1.
Title: Ab initio investigations of structural, elastic and electronic properties of ZnSiP2: Pressure effect
Author(s): Arab, F.; Sahraoui, F. Ali; Haddadi, K.; et al.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 65 Pages: 520-527 DOI: 10.1016/j.commatsci.2012.08.012 Published: DEC 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work, we present ab initio investigations of the pressure effect on the structural, elastic and electronic properties of ZnSiP2 by employing the plane wave pseudo-potential method (PP-PW) within the generalized gradient approximation (GGA-PW91). The calculated equilibrium structural parameters are in excellent agreement with available experimental and theoretical results. We have found that ZnSiP2 undergoes a structural phase transition under pressure from chalcopyrite to rocksalt type structure at 35 GPa. Single-crystal and polycrystalline elastic constants and some related properties under pressure effect in both chalcopyrite and rocksalt phases have been predicted. The analysis of the bulk modulus to shear modulus (B/G) ratio shows that ZnSiP2 must be classified as brittle material. Electronic properties and chemical bonding nature have been studied throughout the band structure, density of states and charge distribution analyses. It is found that the studied compound is a direct band gap (Gamma - Gamma) semiconductor (E-g = 1.34 eV) in chalcopyrite structure, and is a conductor in the rock-salt structure. The chemical bonding of ZnSiP2 has a mixture of ionic-covalent and ionic-covalent-metallic character, respectively in chalcopyrite and rocksalt type structure. (c) 2012 Elsevier B.V. All rights reserved.
2.
Title: Theoretical prediction of the fundamental properties for the ternary Li2PtH6 and Na2PtH6
Author(s): Ghebouli, M. A.; Choutri, H.; Bouarissa, N.; et al.
Source: JOURNAL OF SOLID STATE CHEMISTRY Volume: 196 Pages: 498-503 DOI: 10.1016/j.jssc.2012.06.044 Published: DEC 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Li2PtH6 and Na2PtH6 are good candidate for hydrogen storage. The structural, elastic, electronic and optical properties of Li2PtH6 and Na2PtH6 compounds have been investigated using pseudo-potential plane-wave method based on the density functional theory. Computed lattice constant and H atom positional parameter at equilibrium agree well with the available experimental data. A quadratic pressure dependence of the elastic stiffness is found. A set of isotropic elastic parameters and related properties, namely bulk and shear moduli, Young's modulus, Poisson's ratio, average sound velocity and Debye temperature are numerically estimated in the framework of the Voigt-Reuss-Hill approximation for Li2PtH6 and Na2PtH6 polycrystalline aggregate. The analyses of the band structure indicates that Li2PtH6 and Na2PtH6 are indirect gap semiconductors. The static dielectric constant and static refractive index are inversely proportional to the fundamental gap. (C) 2012 Elsevier Inc. All rights reserved.
3.
Title: A stable adaptive force/position controller for a C5 parallel robot: a neural network approach
Author(s): Achili, B.; Daachi, B.; Amirat, Y.; et al.
Source: ROBOTICA Volume: 30 Pages: 1177-1187 DOI: 10.1017/S0263574711001354 Part: Part 7 Published: DEC 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
This paper presents an adaptive force/position controller for a parallel robot executing constrained motions. This controller, based on an MLPNN (or Multi-Layer Perceptron Neural Network), does not require the inverse dynamic model of the robot to derive the control law. A neural identification

of the dynamic model of the robot is proposed to determine the principal components of the MLPNN input vector. The latter is used to compensate the dynamic effects arising from the robot-environment interaction and its parameters are adjusted according to an adaptation law based on the Lyapunov-analysis methodology. The proposed controller is evaluated experimentally on the C5 parallel robot. This method is capable of tracking accurately the force/position trajectories and its stability robustness is proved.

4.

Title: Prostaglandin E(2) receptor subtypes in human blood and vascular cells.

Author(s): Foudi, Nabil; Gomez, Ingrid; Benyahia, Chabha; et al.

Source: European journal of pharmacology Volume: 695 Issue: 1-3 Pages: 1-6 DOI: 10.1016/j.ejphar.2012.08.009 Published: 2012-Nov-15 (Epub 2012 Sep 03)

Times Cited: 0 (from All Databases)

[Hide abstract]

Prostaglandin E(2) is produced in inflammatory responses via the cyclooxygenase pathway and regulates a variety of physiological and pathological reactions through four different receptor subtypes; EP(1), EP(2), EP(3) and EP(4). The role of the classical prostanoid receptors stimulated by prostaglandin I(2) and thromboxane A(2) in the blood circulation has been largely studied, whereas the other receptors such as EP activated by prostaglandin E(2), have been recently shown to be also implicated. There is now increasing evidence suggesting an important role of EP(3) and EP(4) receptor subtypes in the control of the human vascular tone and remodeling of the vascular wall as well in platelet aggregation and thrombosis. These receptors are implicated in vascular homeostasis and in the development of some pathological situations, such as atherosclerosis, aneurysms and hypertension. The use of specific EP agonists/antagonists would provide a novel cardiovascular therapeutic approach. In this review, we discuss the role of prostaglandin E(2) receptors in the control of human blood and vascular cells.

5.

Title: Systematic study of the elastic properties of Mn(3)AC antiperovskite with A = Zn, Al, Ga, In, Tl, Ge and Sn

Author(s): Medkour, Y.; Roumili, A.; Maouche, D.; et al.

Source: JOURNAL OF ALLOYS AND COMPOUNDS Volume: 541 Pages: 75-78 DOI: 10.1016/j.jallcom.2012.06.081 Published: NOV 15 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

First principle calculations were made to investigate the elastic properties of Mn(3)AC antiperovskites, A = Zn, Al, Ga, In, Tl, Ge and Sn. The estimated equilibrium lattice parameters are in agreement with the experimental ones. From the single crystal elastic constants we have calculated the polycrystalline elastic moduli: the bulk modulus B, shear modulus G, tetragonal shear modulus G', Young's modulus Y, Cauchy's pressure CP, Poisson's ratio v, elastic anisotropy factor and Pugh's criterion G/B. Using Debye's approximation we have deduced the elastic wave velocities and Debye's temperature. (C) 2012 Elsevier B. V. All rights reserved.

6.

Title: A Reciprocal-Orthogonal Parametric Transform and Its Fast Algorithm

Author(s): Bouguezel, Saad

Source: IEEE SIGNAL PROCESSING LETTERS Volume: 19 Issue: 11 Pages: 769-772 DOI: 10.1109/LSP.2012.2220354 Published: NOV 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

In this letter, a reciprocal-orthogonal parametric transform and an efficient algorithm for its simple construction and fast computation are proposed. The algorithm is developed by introducing a recursive approach to decompose the transform matrix into a product of sparse matrices using the Kronecker product. It is shown that the structure of the resulting algorithm is very similar to that of

the well-known Walsh-Hadamard transform, except for the multipliers introduced by the independent parameters. The transform has a large number of independent parameters that can be chosen arbitrarily from the complex plane. Thus, many interesting special cases can easily be obtained from the proposed transform. Moreover, we carry out a number of experiments to show that its independent parameters can successfully be used as an additional secret key for image encryption.

7.

Title: A new robust adaptive fuzzy sliding mode power system stabilizer

Author(s): Nechadi, E.; Harmas, M. N.; Hamzaoui, A.; et al.

Source: INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS Volume: 42 Issue: 1 Pages: 1-7 DOI: 10.1016/j.ijepes.2012.03.032 Published: NOV 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

This paper presents a novel power system stabilizer based on adaptive fuzzy sliding mode approach without reaching phase. We consider consequences of a major post disturbance on a power system for three different loading and operating conditions. Speed deviation and accelerating power are selected as controller inputs. A new sliding surface enabling for sliding to occur at any state initial conditions is used to develop a robust controller. Moreover, two adaptive fuzzy systems are used to approximate power system dynamics. Stability issue is addressed via Lyapunov synthesis. The robustness of the proposed method is verified on a single-machine infinite-bus and on a multi-machine power system stabilizer under different operating conditions. A comparative simulation study is presented to evaluate achieved performance enhancements showing better oscillations damping and faster transient dynamic behaviour over three considered controllers: a conventional, a dual-input and a classical sliding mode power system stabilizer. (c) 2012 Elsevier Ltd. All rights reserved.

8.

Title: Characterization and MCNP simulation of neutron energy spectrum shift after transmission through strong absorbing materials and its impact on tomography reconstructed image

Author(s): Hachouf, N.; Kharfi, F.; Boucenna, A.

Source: APPLIED RADIATION AND ISOTOPES Volume: 70 Issue: 10 Pages: 2355-2361 DOI: 10.1016/j.apradiso.2012.06.017 Published: OCT 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

An ideal neutron radiograph, for quantification and 3D tomographic image reconstruction, should be a transmission image which exactly obeys to the exponential attenuation law of a monochromatic neutron beam. There are many reasons for which this assumption does not hold for high neutron absorbing materials. The main deviations from the ideal are due essentially to neutron beam hardening effect. The main challenges of this work are the characterization of neutron transmission through boron enriched steel materials and the observation of beam hardening. Then, in our work, the influence of beam hardening effect on neutron tomographic image, for samples based on these materials, is studied. MCNP and FBP simulation are performed to adjust linear attenuation coefficients data and to perform 2D tomographic image reconstruction with and without beam hardening corrections. A beam hardening correction procedure is developed and applied based on qualitative and quantitative analyses of the projections data. Results from original and corrected 2D reconstructed images obtained shows the efficiency of the proposed correction procedure. (C) 2012 Elsevier Ltd. All rights reserved.

9.

Title: Theoretical prediction of the structural, elastic, electronic and thermodynamic properties of V3M (M = Si, Ge and Sn) compounds

Author(s): Chihi, T.; Fatmi, M.

Source: SUPERLATTICES AND MICROSTRUCTURES Volume: 52 Issue: 4 Pages: 697-703

DOI: 10.1016/j.spmi.2012.06.009 Published: OCT 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Density functional theory (DFT), is used in our calculations to study the V3M (M = Si, Ge and Sn) compounds, we are found that V3Sn compound is mechanically unstable because of a negative C-44 = -19.41 GPa. For each of these compounds considered, the lowest energy structure is found to have the lowest N(E-f) value. Also there is a strong interaction between V and V, the interaction between M (M = Si, Ge, Sn) and V (M and M) is negative, not including Si [Sn]. In phonon density of states PDOS. the element contributions varies from lighter (high frequency) to heaviest (low frequency). (C) 2012 Elsevier Ltd. All rights reserved.

10.
Title: Modeling and Simulation of Resistive Superconducting Fault-Current Limiters
Author(s): Nemdili, S.; Belkhiat, S.
Source: JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM Volume: 25 Issue: 7 Pages: 2351-2356 DOI: 10.1007/s10948-012-1685-z Published: OCT 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Superconducting fault-current limiters (SFCL) offer ideal performance in electrical power system. The design of SFCL has to be both flexible, to allow an easy adaptation to the specific requirements of each particular application, and a high quality standard with reproducible properties. Up to now no simulation model of SFCL has been validated or introduced in the Library of MATLAB software. In this paper a simulation model for a novel resistive type superconducting fault-current limiter is proposed. This model includes the electric field-current density (E-J) characteristics of High-Temperature Superconductors (HTS). A graphical interface using Graphical User Interface (GUI) of MATLAB is developed in order to ease the operation of the proposed model. This one facilitates the introduction or the parameter modification of materials candidate to a SFCL model. Thus, the operation characteristics and limitation behavior of SFCL have been investigated. The developed model accurately predicted the current-time waveforms achievable with typical limiters, and improved standard of understanding concerning the fault-current limitation mechanisms.

51.
11.
Title: Data mining from multiple heterogeneous relational databases using decision tree classification
Author(s): Mehenni, Tahar; Moussaoui, Abdelouahab
Source: PATTERN RECOGNITION LETTERS Volume: 33 Issue: 13 Pages: 1768-1775 DOI: 10.1016/j.patrec.2012.05.014 Published: OCT 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Nowadays, the expansion of computer networks and the diversity of data sources require new data mining approaches in multi-database systems. We propose a classification approach across multiple heterogeneous relational databases. More specifically, given a set of inter-related databases, we use a regression model for predicting the most useful links that will be connected to build a multi-relational decision tree. Experiments performed on different real and synthetic databases were very satisfactory compared with previous classification approaches in multiple databases. (c) 2012 Elsevier B.V. All rights reserved.

12.
Title: First principles study of the structural, elastic, electronic and optical properties of CaSrTt (Tt=Si, Ge, Sn and Pb)
Author(s): Saoudi, A.; Hachemi, A.; Ferhat-Hamida, A.; et al.
Source: SOLID STATE COMMUNICATIONS Volume: 152 Issue: 19 Pages: 1800-1806 DOI: 10.1016/j.ssc.2012.07.009 Published: OCT 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

We present an ab initio study of the structural, elastic, electronic and optical properties of CaSrTt (Tt=Si, Ge, Sn and Pb) compounds. To more-accurately describe the properties of these materials, the calculations were based on the OFT theory with the generalized gradient approximation (GGA). In particular, the calculated lattice constants are in good agreement with the experimental results, with a deviation less than 0.67%, 2.74% and 1.7% for a, b and c, respectively. For the equilibrium volume, the deviation does not exceed 4.7%. Single-crystal elastic stiffness (C-ij) values were calculated and the polycrystalline elastic moduli (B and G) were estimated utilizing Voigt. Reuss and Hill's approximations. The electronic band-structure calculations indicate that these compounds are semiconductors, in agreement with the literature data on their Ae(2)Tt analogues. The dielectric function, refractive index, extinction coefficient, reflectivity spectrum and electron energy loss are calculated over a spectral range from 0 to 45 eV.
Unfortunately, there is no available previous study for comparison. (C) 2012 Elsevier Ltd. All rights reserved.

13.

Title: Morphological behavior and wear of polyurethane pads used in glass polishing process
Author(s): Belkhir, N.; Bouzid, D.; Herold, V.
Source: PRECISION ENGINEERING-JOURNAL OF THE INTERNATIONAL SOCIETIES FOR PRECISION ENGINEERING AND NANOTECHNOLOGY Volume: 36 Issue: 4 Pages: 641-649 DOI: 10.1016/j.precisioneng.2012.05.006 Published: OCT 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

The porous polyurethane polishing pads are used in the optical glass chemical mechanical polishing process. The wear of the polishing pad and morphology are important for the polishing process efficiency and the surface quality. The subject of this work is to evaluate the morphology and wear of porous polyurethane polishing pads, and their influence on the material removal rate and quality in the optical glass chemical mechanical polishing process.
For this study, several optical glass polishing operations were done using different porous polyurethane polishing pads. The polishing pads were recovered after polishing to be characterized using several techniques such as: the SEM, the optical microscopy and the mechanical profilometry. The obtained results show, that the polyurethane polishing pads produce good surface quality with high material removal rate.
The polyurethane polishing pads are relatively wear resistant in the first hour of use: however some changes were seen on the polishing pads, and their characteristics. The most conspicuous change is the abrasive grains incrustation in the polishing pads microstructure that changes their properties. (C) 2012 Elsevier Inc. All rights reserved.

14.

Title: First and second harmonic generation of the XAl2Se4 (X=Zn,Cd,Hg) defect chalcopyrite compounds
Author(s): Ouahrani, Tank; Khenata, R.; Lasri, B.; et al.
Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 18 Pages: 3760-3766 DOI: 10.1016/j.physb.2012.05.057 Published: SEP 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

The chemical bonding of the ZnAl2Se4, CdAl2Se4 and HgAl2Se4 defect chalcopyrites has been studied in the framework of the quantum theory of atoms in molecules (AIM). The GW quasi-particle approximation is used to correct the DFT-underestimation of energy gap, and as a consequence the linear and nonlinear optical properties are significantly enhanced. The second harmonic generation (SHG) displays certain dependence with the ionicity degree decrease through

the dependency of the SHG on the band gap. The occurrence of the AIM saddle point is characterized and some clarifying features in relationship with the density topology are exposed, which enable to understand the relation with the second harmonic generation effect. (c) 2012 Elsevier B.V. All rights reserved.

15.

Title: Triple-differential cross sections for the ionization of thymine by electrons and positrons

Author(s): Dal Cappello, C.; Charpentier, I.; Houamer, S.; et al.

Source: JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS Volume: 45 Issue: 17 Article Number: 175205 DOI: 10.1088/0953-4075/45/17/175205 Published: SEP 14 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

We apply the second Born approximation and the BBK methods to study triple-differential cross sections for the ionization of valence orbitals of a thymine molecule by electrons and positrons. Calculations have been performed for a coplanar geometry at an incident energy of 250 eV and an ejected-electron energy of 20 eV, while the angle of scattering is fixed at 10 degrees.. We use an accurate single-centre wavefunction for the initial state of the target and the well-known CNDO model. The present second Born approximation (with the single-centre wavefunction for the initial state) and the BBK model (with the CNDO model) yield cross sections in good agreement with the recent experimental data for electron impact. In the case of positron impact, we find that the contribution of the second term of the Born series is not insignificant for the present kinematics.

16.

Title: USE OF A TWO-DIMENSIONAL PSEUDO-HOMOGENEOUS MODEL FOR THE STUDY OF TEMPERATURE AND CONVERSION PROFILES DURING A POLYMERIZATION REACTION IN A TUBULAR CHEMICAL REACTOR

Author(s): Marghsi, Mohamed; Benachour, Djafer

Source: MATERIALI IN TEHNOLOGIJE Volume: 46 Issue: 5 Pages: 539-546 Published: SEP-OCT 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

A two-dimensional pseudo-homogeneous model is used to study temperature and conversion profiles during the polymerization reaction of low-density polyethylene (LDPE) in a tubular chemical reactor. This model is integrated with the Runge-Kutta 4th-order semi-implicit method, using orthogonal collocation to transform a system of complex equations into the ordinary differential ones, with respect to the heat and mass transfers involved.

Ethylene polymerization has been simulated over a range of temperatures and pressures and according to the mechanisms of radical polymerization. The results of several tests, carried out under the conditions similar to those of an industrial-scale polymerization, are presented. The influences of the initial temperature T-o, the total pressure P-t and the ratio L/D (the main dimensions of the reactor) on the profiles of the temperature and conversion rates are tested and analyzed to predict the behavior and performance of the tubular chemical reactor considered.

The focus was on the effect of an increase in the initial temperature T-o since such a rise results in a decrease in T-c (hot spot) appearing at the entrance of the reactor on the one hand, and in an improved conversion on the other hand. An opposite effect is observed for P-t since a pressure increase will result in a rapid rise in T-c and a decrease in the conversion. The ranges of pressures and temperatures are thus limited by the system performance: excessive pressures must be avoided and working temperatures must be chosen in the range where the polymerization reaction is very fast; such conditions allow not only a good conversion, but also a resulting polymer with a low crystallinity and, thus, a low density.

In the present work the effect of the L/D ratio was also studied in order to find the most suitable ratio that permits the best evacuation of the heat released during the polymerization.

17.

Title: An adaptive prototype design to maximize power harvesting using electrostrictive polymers

Author(s): Meddad, M.; Eddiai, A.; Guyomar, D.; et al.
Source: JOURNAL OF APPLIED PHYSICS Volume: 112 Issue: 5 Article Number: 054109
DOI: 10.1063/1.4751456 Published: SEP 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The harvesting energy with electrostrictive polymers has great potential for remote applications such as in vivo sensors, embedded micro-electro-mechanical systems devices, and distributed network instruments. A majority of current research activities in this field refers to classical piezoelectric ceramics, but electrostrictive polymers offer promise of energy harvesting with few moving parts; power can be produced by simply stretching and contracting a relatively low-cost rubbery material. The use of such polymers for energy harvesting is a growing field, which has great potential from an energy density viewpoint. The output power is inversely proportional to the harvester's frequency bandwidth. Consequently, it is much harder to efficiently harvest power from low-frequency sources with a large frequency band response and with a very small system size than from a stabilized high-frequency vibration source. This paper presents a new structure that is able to predict mechanical frequency excitation in order to increase power-harvesting capabilities of electrostrictive polymers. An equivalent structure scheme has been developed by using current and electrical schemes models. With a transverse strain of 0.5% and a bias field of 10 V/mu m, such a process rendered it possible to increase the converted power by 80% with a low-frequency mechanical excitation. This study contributes to provide a framework for developing an innovative energy-harvesting technology that collects vibrations from the environment and converts them into electricity to power a variety of sensors. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.4751456]

18.
Title: Carbapenemase-producing Acinetobacter baumannii in two university hospitals in Algeria
Author(s): Bakour, Sofiane; Kempf, Marie; Touati, Abdelaziz; et al.
Source: JOURNAL OF MEDICAL MICROBIOLOGY Volume: 61 Issue: 9 Pages: 1341-1343
DOI: 10.1099/jmm.0.045807-0 Published: SEP 2012
Times Cited: 0 (from All Databases)

19.
Title: Nonlinear dynamic systems identification based on dynamic wavelet neural units (vol 19, pg 997, 2010)
Author(s): Saoud, L. Saad; Khellaf, A.
Source: NEURAL COMPUTING & APPLICATIONS Volume: 21 Issue: 6 Special Issue: SI
Pages: 1463-1463 DOI: 10.1007/s00521-011-0520-y Published: SEP 2012
Times Cited: 0 (from All Databases)

20.
Title: Ab initio study of the structural, electronic and elastic properties of AgSbTe2, AgSbSe2, Pr3AlC, Ce3AlC, Ce3AlN, La3AlC and La3AlN compounds
Author(s): Berri, S.; Maouche, D.; Medkour, Y.
Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 17 Pages: 3320-3327 DOI: 10.1016/j.physb.2012.04.011 Published: SEP 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this paper, we study the structural, electronic and elastic properties of the ternary AgSbTe2, AgSbSe2, Pr3AlC, Ce3AlC, Ce3AlN, La3AlC and La3AlN compounds using the full-potential linearized augmented plane wave (FP-LAPW) scheme and the pseudopotential plane wave (PP-PW) scheme in the frame of generalized gradient approximation (GGA). Results are given for the lattice parameters, bulk modulus, and its pressure derivative. The calculated lattice parameters are in good agreement with experimental results. We have determined the full set of first-order elastic

constants, shear modulus, Young's modulus and Poisson's ratio of these compounds. Also, we have presented the results of the band structure, densities of states, it is found that this compounds metallic behavior, and a negative gap Gamma -> R for Pr3AlC. The analysis charge densities show that bonding is of covalent-ionic and ionic nature for AgSbSe2 and AgSbTe2 compounds. (C) 2012 Elsevier B.V. All rights reserved.

21.

Title: Ab initio study of the structural, electronic, elastic and magnetic properties of Cu2GdIn, Ag2GdIn and Au2GdIn

Author(s): Berri, Saadi; Maouche, Djamel; Zerarga, Fares; et al.

Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 17 Pages: 3328-3334 DOI: 10.1016/j.physb.2012.04.012 Published: SEP 1 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

We preformed first-principle calculations for the structural, electronic, elastic and magnetic properties of Cu(2)Gdln, Ag2GdIn and Au2GdIn using the full-potential linearized augmented plane wave (FP-LAPW) scheme within the generalized gradient approximation by Wu and Cohen (GGA-WC), GGA+U, the local spin density approximation (LSDA) and LSDA+U. The lattice parameters, the bulk modulus and its pressure derivative and the elastic constants were determined. Also, we present the band structures and the densities of states. The electronic structures of the ferromagnetic configuration for Heusler compounds (X2GdIn) have a metallic character. The magnetic moments were mostly contributed by the rare-earth Gd 4f ion. (C) 2012 Elsevier B.V. All rights reserved.

22.

Title: Ab initio study of some fundamental properties of the M3X (M=Cr, V; X=Si, Ge) compounds

Author(s): Chihi, T.; Fatmi, M.; Ghebouli, M. A.

Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 17 Pages: 3591-3595 DOI: 10.1016/j.physb.2012.05.032 Published: SEP 1 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

M3X (M=Cr, V; X=Si, Ge) compounds are studied using first-principles calculations based on the Density Functional Theory (DFT). It is found that the bulk of Cr3X (X=Si, Ge) compounds are comparable to those of Al2O3, the nearest-neighbor distance DM-M and DM-X in these compounds increase and the bulk modulus decrease, there is a strong interaction between M and M (M=Cr the interaction is stronger). Also the interaction between M (M=Cr, V) and X (X=Ge) is negative, an anti-bonding-type interaction is dominant between these atoms. (C) 2012 Elsevier B.V. All rights reserved.

23.

Title: Comment on "Experimental and theoretical study of the triple-differential cross section for electron-impact ionization of thymine molecules"

Author(s): Houamer, S.; Dal Cappello, C.; Charpentier, I.; et al.

Source: PHYSICAL REVIEW A Volume: 86 Issue: 2 Article Number: 026701 DOI: 10.1103/PhysRevA.86.026701 Published: AUG 22 2012

Times Cited: 0 (from All Databases)

[View abstract]

24.

Title: Relationship between ammonia sensing properties of polyaniline nanostructures and their deposition and synthesis methods

Author(s): Kebiche, H.; Debarnot, D.; Merzouki, A.; et al.

Source: ANALYTICA CHIMICA ACTA Volume: 737 Pages: 64-71 DOI:

10.1016/j.aca.2012.06.003 Published: AUG 6 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The ammonia absorption properties of polyaniline nanostructures are studied in terms of sensitivity, response and recovery times and stability. These characteristics are obtained by measuring, at room temperature, the absorbance variations at 632 nm. The nanostructures are synthesized either by interfacial or rapid or dropwise polymerizations with the oxidant-to-monomer mole ratio equals to 0.5 or 1. The influence of the deposition method (in-situ or drop-coating technique) as well as the nature of the dopant (HCl CSA or I-2) on the gas detection properties are also studied. The results show a strong dependence of the morphology on the deposition method, the in-situ technique leads to the best sensitivity and response time. For this deposition method, the nanostructures sensitivity, response time and regeneration rate depend on the synthesis method, the dopant and the mole ratio. The ageing effect after 8 months under ambient conditions and the mechanism of interaction between the polyaniline nanostructures and ammonia molecules are also presented. (C) 2012 Elsevier B.V. All rights reserved.

25.
Title: First-principles investigation of the ternary scandium based inverse-perovskite carbides Sc(3)AC (A = Al, Ga, In and Tl)
Author(s): Haddadi, K.; Bouhemadou, A.; Zerarga, F.; et al.
Source: SOLID STATE SCIENCES Volume: 14 Issue: 8 Pages: 1175-1185 DOI: 10.1016/j.solidstatesciences.2012.04.028 Published: AUG 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Based on first-principles approach, we present a comparative study of structural, electronic, elastic and thermo-dynamical properties of the series of inverse-perovskites Sc(3)AC, with A = Al, Ga, In and Tl. The calculated equilibrium lattice constants are in excellent agreement with the experimental and available theoretical data. The electronic band structures and densities of states profiles show that the studied compounds are conductors. Analysis of atomic site projected local density of states and charge densities reveals that a mixture of covalent-ionic-metallic characterizes the chemical bonding of the considered inverse-perovskites. Pressure dependence up to 40 GPa of the single-crystal and polycrystalline elastic constants has been investigated in details. The computed B/G ratios show that all Sc(3)AC compounds are brittle. We have estimated the sound velocities in the principal directions. Through the quasi-harmonic Debye model, in which the phononic effects are taken into account, the temperature and pressure effects on the lattice constant, bulk modulus, heat capacity and Debye temperature are performed. (C) 2012 Elsevier Masson SAS. All rights reserved.

26.
Title: Sequential optimization approach for enhanced production of glutamic acid from Corynebacterium glutamicum 2262 using date juice
Author(s): Abdenacer, Mouffok; Kahina, Bedaida Ibtissam; Aicha, Nancib; et al.
Source: BIOTECHNOLOGY AND BIOPROCESS ENGINEERING Volume: 17 Issue: 4 Pages: 795-803 DOI: 10.1007/s12257-011-0486-8 Published: AUG 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
To improve glutamic acid production from Corynebacterium glutamicum 2262 using date juice, a culture medium was screened and optimized using the statistical experimental designs of Plackett-Burman and response-surface methodology. In the first step, a two-level Plackett-Burman design was adopted to select the most important nutrients influencing the glutamic acid production, which showed that the date juice sugars, urea, peptone, and glycine betaine were the most significant ingredients ($P < 0.05$). Finally, response surface Box-Behnken design was employed to develop a mathematical model to identify the optimum concentrations of key components for higher glutamic

acid production, which revealed the following: date juice (45 g/L), urea (16.9 g/L), peptone (15 g/L), and glycine betaine (12 g/L). The high correlation between the predicted and observed values indicated the validity of the model. Glutamic acid concentration increased significantly with optimized medium (33.2 g/L) when compared with non-optimized medium (12 g/L).

27.

Title: First-principles study on stability, energy gaps, optical phonon and related parameters of In1-x-yAlxGayAs alloys

Author(s): Ghebouli, M. A.; Choutri, H.; Bouarissa, N.; et al.

Source: JOURNAL OF SOLID STATE CHEMISTRY Volume: 192 Pages: 161-167 DOI: 10.1016/j.jssc.2012.03.052 Published: AUG 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Based on the density functional theory as implemented in the Abinit code under the virtual crystal approximation, the lattice constant, bulk modulus, elastic constants, gap energies, electron effective mass, the dielectric constants and born effective charge in In1-x-yAlxGayAs have been calculated with both GGA and LDA in the range 0 <= y <= 0.9801. The optical and acoustical phonon frequencies, Frohlich coupling parameter, deformation energy and polaron effective mass are calculated and their dependence on the Ga content is examined. For AlAs, our results are in reasonable agreement with the known data in the literature; while for other contents our treatments are predictions. (C) 2012 Elsevier Inc. All rights reserved.

28.

Title: k(0)-NAA quality assessment in an Algerian laboratory by analysis of SMELS and four IAEA reference materials using Es-Salam research reactor

Author(s): Hamidatou, L. A.; Dekar, S.; Boukari, S.

Source: NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT Volume: 682 Pages: 75-78 DOI: 10.1016/j.nima.2012.04.042 Published: AUG 1 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Different types of synthetic multi-element standard material (SMELS) and four IAEA reference materials, 140, Sl-1, Soil-7 and Lichen-336 were analyzed for validation and QC/QA of the k(0)-standardised Neutron Activation Analysis (k(0)-NAA). The samples of SMELS and RMs were irradiated at Es-Salam research reactor and measured on an absolutely calibrated HPGe detector with 35% relative efficiency connected to a Canberra Genie 2k inspector. Concentrations of 33 elements such as As, Au, Ba, Br, Ca, Ce, Co, Cr, Cs, Eu, Fe, Hf, In, K, La, Mn, Mo, Na, Nd, Rb, Sb, Sc, Sc, Sm, Sr, Ta, Tb, Th, Tm, U, Yb, Zn, and Zr were determined in SMELS and RMs. The analytical results agreed well with the assigned values of SMELS and certified values of RMs. In the case of RMs, concentrations of a few elements, whose certified values are not available, could be determined. The comparison between experimental values and assigned/certified data for SMELS and RMs was made by means of the results from Relative Bias, Z-score and U-score. The relatives bias of the elements determined in SMELS with respect to the assigned values were all within +/- 4.6%. For RMs with respect to certified values were within +/- 10% except for few elements for which RB varied from -28.6% to +12.8%. The Z-score values at 95% confidence level for most of the elements in both the materials were within +/- 1. The U-scores for most of the elements were lower than 1. (C) 2012 Elsevier BM. All rights reserved.

29.

Title: Structural, electronic and elastic properties of the new ternary alkali metal chalcogenides KLiX (X = S, Se and Te)

Author(s): Seddik, T.; Khenata, R.; Bouhemadou, A.; et al.

Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 61 Pages: 206-212 DOI: 10.1016/j.commatsci.2012.04.020 Published: AUG 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

The structural, electronic and elastic properties of the tetragonal alkali metal chalcogenides KLiX [X: S, Se and Te] have been investigated using the full-potential (linearized) augmented plane wave plus local orbitals method. The exchange-correlation potential is treated within the generalized gradient approximation of Wu and Cohen. Moreover, the alternative form of GGA proposed by Engel and Vosko is also used for the electronic properties. The calculated structural parameters are in excellent agreement with the experimental data. The elastic constants C-ij are predicted using the total energy variation versus strain technique. The polycrystalline elastic moduli, namely; shear modulus, Young's modulus, Poisson's ratio, sound velocities and Debye temperature are derived from the obtained single-crystal elastic constants. Brittleness behavior of these compounds is interpreted via the calculated elastic constants C-ij. Calculated band structures show that KLiS and KLiSe have an indirect energy band gap, whereas KLiTe has a direct energy band gap. The contribution of alkali metals and chalcogen atoms to the electronic band structure and electronic density of states has been analyzed. This is the first quantitative theoretical prediction of the elastic and electronic properties for these investigated compounds and still awaits experimental confirmations. (c) 2012 Elsevier B.V. All rights reserved.

30.

Title: La1.98NiO4 +/-delta, a new cathode material for solid oxide fuel cell: Impedance spectroscopy study and compatibility with gadolinia-doped ceria and yttria-stabilized zirconia electrolytes

Author(s): Ferkhi, M.; Ringuede, A.; Khaled, A.; et al.

Source: ELECTROCHIMICA ACTA Volume: 75 Pages: 80-87 DOI: 10.1016/j.electacta.2012.04.064 Published: JUL 30 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

A new SOFC cathode material, La1.98NiO4 +/-delta, was tested in presence of two electrolytes, yttria-stabilized zirconia (YSZ) and gadolinia-doped ceria (GDC). XRD analysis showed the absence of undesirable phases at the La1.98NiO4 +/-delta/GDC interface, whereas lanthanum zirconate (La2Zr2O7), an insulating phase, is present between electrode La1.98NiO4 +/-delta and YSz electrolyte. XPS analysis showed that the oxygen lattice can be present in form of La-O and LaNiO3, which explains the high conductivity for these materials. At temperatures lower than 650 degrees C, the area specific resistance of the electrodes, measured by electrochemical impedance spectroscopy is significantly inferior when associated to GDC rather than YSZ electrolyte. In addition, in the case of GDC, a lower activation energy of about 0.7 eV was obtained, which could be explained by a higher mobility of oxide ions at the La1.98NiO4 +/-delta/GDC interface compared to the La1.98NiO4 +/-delta/YSZ one. (C) 2012 Elsevier Ltd. All rights reserved.

31.

Title: Electrocatalytic oxidation of organic substrates with molecular oxygen using tetradentate ruthenium(III)-Schiff base complexes as catalysts

Author(s): Ourari, Ali; Khelafi, Mostefa; Aggoun, Djouhra; et al.

Source: ELECTROCHIMICA ACTA Volume: 75 Pages: 366-370 DOI: 10.1016/j.electacta.2012.05.021 Published: JUL 30 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Three complexes Ru(III)CILn involving different tetradentate Schiff base ligands L-n (see L-1, L-2 and L-3 in Chart 1) were used as catalysts in the oxidation of cyclooctene and tetraline in the presence of molecular dioxygen associated with benzoic anhydride. The efficiency of this oxidation reaction was tested in the presence of two apical bases: 1- or 2-methylimidazole. All complexes exhibit a quasi-reversible redox system. The electrolysis experiments were carried out at controlled

potential for each complex, using different substrates such as cyclooctene and tetraline. The oxidized products are cyclooctene oxide (turnover 6.7), a mixture of 1-tetralol and 1-tetralone (turnover 7.6) respectively. (C) 2012 Published by Elsevier Ltd.

32.

Title: The KATRIN pre-spectrometer at reduced filter energy

Author(s): Prall, M.; Renschler, P.; Glueck, F.; et al.

Source: NEW JOURNAL OF PHYSICS Volume: 14 Article Number: 073054 DOI: 10.1088/1367-2630/14/7/073054 Published: JUL 27 2012

Times Cited: 1 (from All Databases)

[Hide abstract]

The Karlsruhe Tritium Neutrino (KATRIN) experiment will determine the mass of the electron neutrino with a sensitivity of 0.2 eV (90% CL) via a measurement of the beta-spectrum of gaseous tritium near its endpoint of E-0 = 18.57 keV. An ultra-low background of about b = 10 mHz is among the requirements on reaching this sensitivity. In the KATRIN main beam line, two spectrometers of MAC-E filter type are used in tandem configuration. This setup, however, produces a Penning trap, which could lead to increased background. We have performed test measurements showing that the filter energy of the pre-spectrometer can be reduced by several keV in order to diminish this trap. These measurements were analyzed with the help of a complex computer simulation, modeling multiple electron reflections from both the detector and the photoelectric electron source used in our test setup.

33.

Title: Low bias histogram-based estimation of mutual information for feature selection

Author(s): Hacine-Gharbi, Abdenour; Ravier, Philippe; Harba, Rachid; et al.

Source: PATTERN RECOGNITION LETTERS Volume: 33 Issue: 10 Pages: 1302-1308 DOI: 10.1016/j.patrec.2012.02.022 Published: JUL 15 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

This paper presents a low bias histogram-based estimation of mutual information and its application to feature selection problems. By canceling the first order bias, the estimation avoids the bias accumulation problem that affects classical methods. As a consequence, on a synthetic feature selection problem, only the proposed method results in the exact number of features to be chosen in the Gaussian case when compared to four other approaches. In a speech recognition application, the proposed method and the Sturges method are the only ones that lead to a correct number of selected features in the noise free case. In the reduced data case, only the proposed method points out the optimal number of features to select. Finally, in the noisy case, only the proposed method leads to results of high quality; other methods show severely underestimated numbers of selected features. (C) 2012 Elsevier B.V. All rights reserved.

34.

Title: First-Principles Study of Structural, Elastic and Mechanical Properties of Zinc-Blende Boron Nitride (B3-BN)

Author(s): Daoud, S.; Loucif, K.; Bioud, N.; et al.

Source: ACTA PHYSICA POLONICA A Volume: 122 Issue: 1 Pages: 109-115 Published: JUL 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

First principles study of structural, elastic properties and anisotropy effect on the mechanical parameters of the zinc-blende boron nitride has been performed using the pseudopotential plane wave method based on density functional theory with the Teter and Pade exchange-correlation functional of the local density approximation. The equilibrium lattice constant, molecular and crystal densities, bond length, the independent elastic constants, bulk modulus and its pressure derivatives, compressibility, shear modulus, internal strain parameter, isotropy factor, compliance

constants, the Debye temperature, Young's modulus, Poisson's ratio, the Lame constants and sound velocity for directions within the important crystallographic planes of this compound are obtained and analyzed in comparison with the available theoretical data reported in the literature.

35.

Title: Exact Green function for a Dirac particle in a weak gravitational plane wave field. Alternative path integral approach

Author(s): Ould-Lahoucine, H. K.; Chetouani, L.

Source: JOURNAL OF MATHEMATICAL PHYSICS Volume: 53 Issue: 7 Article Number: 072303 DOI: 10.1063/1.4736720 Published: JUL 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

The exact Green function for a Dirac particle in interaction with a weak gravitational plane wave field is obtained throughout an alternative path integral approach. In addition, a canonical transformation is obtained so that the generating function is showed to be a solution to the Hamilton-Jacobi equation for spin zero particle. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.4736720]

36.

Title: Theoretical prediction of the structural, elastic, electronic, optical and thermal properties of the cubic perovskites CsXF3 (X = Ca, Sr and Hg) under pressure effect

Author(s): Ghebouli, B.; Ghebouli, M. A.; Bouhemadou, A.; et al.

Source: SOLID STATE SCIENCES Volume: 14 Issue: 7 Pages: 903-913 DOI: 10.1016/j.solidstatesciences.2012.04.019 Published: JUL 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Some physical properties of the cubic perovskites CsXF3 (X = Ca, Sr and Hg) have been investigated using pseudopotential plane-wave method based on the density functional theory. The calculated lattice parameters within GGA and LDA agree reasonably with the available experimental data. The elastic constants and their pressure derivatives are predicted using the static finite strain technique. We derived the bulk and shear moduli. Young's modulus, Poisson's ratio and Lame's constants for ideal polycrystalline aggregates. The analysis of B/G ratio indicates that CsXF3 (X = Ca, Sr and Hg) are ductile materials. The thermal effect on the volume, bulk modulus, heat capacity and Debye temperature was predicted. (C) 2012 Elsevier Masson SAS. All rights reserved.

37.

Title: Effect of hydrostatic pressure on the structural, elastic and electronic properties of (B3) boron phosphide

Author(s): Daoud, Salah; Loucif, Kamel; Bioud, Nadhira; et al.

Source: PRAMANA-JOURNAL OF PHYSICS Volume: 79 Issue: 1 Pages: 95-106 DOI: 10.1007/s12043-012-0283-8 Published: JUL 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

In this paper we present the results obtained from first-principles calculations of the effect of hydrostatic pressure on the structural, elastic and electronic properties of (B3) boron phosphide, using the pseudopotential plane-wave method (PP-PW) based on density functional theory within the Teter and Pade exchange-correlation functional form of the local density approximation (LDA). The lattice parameter, molecular and crystal densities, near-neighbour distances, independent elastic constants, bulk modulus, shear modulus, anisotropy factor and energy bandgaps of (B3) BP under high pressure are presented. The results showed a phase transition pressure from the zinc blende to rock-salt phase at around 1.56 Mbar, which is in good agreement with the theoretical data reported in the literature.

38.

Title: Structural, elastic, electronic and magnetic properties of Mn3ZnC and Mn3GeC
Author(s): Medkour, Y.; Roumili, A.; Louail, L.; et al.
Source: COMPUTATIONAL AND THEORETICAL CHEMISTRY Volume: 991 Pages: 161-164 DOI: 10.1016/j.comptc.2012.04.013 Published: JUL 1 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
We report first-principles calculations, on the structural, elastic, electronic and magnetic properties of Mn3ZnC and Mn3GeC antiperovskite. Our calculations show that these compounds are more stable in the ferromagnetic states, the estimated equilibrium lattice parameters (a and V) are in agreement with the experimental ones. From the single crystal elastic constants: we have derived the polycrystalline elastic moduli, the calculated bulk modulus of Mn3ZnC and Mn3GeC which are respectively 191 and 221 GPa. Mn3ZnC shows a weak resistance to shear deformation (54 GPa) as compared to Mn3GeC (116 GPa). Similarly to previous studies on carbides antiperovskite, these compounds are good electrical conductors. The investigation of the total and partial densities of states shows that the conductivity is assured by d electrons of the transition metal atoms. The ground state was found ferromagnetic and the magnetic moment in these compounds is mainly related to the spin polarisation of Mn d electrons. The average magnetic moment per unit formula decreases from 7.02 mu(B) to 3.18 mu(B) for Mn3ZnC and Mn3GeC respectively. (C) 2012 Elsevier B.V. All rights reserved.
39.
Title: Updated database and new empirical values for K-shell fluorescence yields
Author(s): Kahoul, A.; Aylikci, V.; Aylikci, N. Kup; et al.
Source: RADIATION PHYSICS AND CHEMISTRY Volume: 81 Issue: 7 Pages: 713-727 DOI: 10.1016/j.radphyschem.2012.03.006 Published: JUL 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The measured K-shell fluorescence yield values that were reported in the literature from 1994 to 2011 were reviewed and presented in a table form (about 341 new measurements). The Weighted-mean values of experimental data were fitted by the analytical function to deduce new empirical K-shell fluorescence yields for a broad range of elements. The results were compared with the other theoretical, experimental and semi-empirical values reported in the literature. Reasonable agreement was typically obtained between our result and other works. (C) 2012 Elsevier Ltd. All rights reserved.
40.
Title: Exact Green Function for a Dirac Particle in Presence of Two Orthogonal Plane Wave Fields. Path Integral Derivation
Author(s): Ould-Lahoucine, H. K.; Chetouani, L.
Source: INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS Volume: 51 Issue: 7 Pages: 2208-2219 DOI: 10.1007/s10773-012-1100-3 Published: JUL 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Exact Green function for a Dirac particle subject to a couple of orthogonal plane wave fields is obtained throughout a path integral approach. In addition, a suitable representation of the Dirac matrices is deduced so that the initial problem becomes the one of a free particle.
41.
Title: Opto-electronic response of spinels MgAl2O4 and MgGa2O4 through modified Becke-Johnson exchange potential
Author(s): Amin, B.; Khenata, R.; Bouhemadou, A.; et al.
Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 13 Pages: 2588-2592 DOI: 10.1016/j.physb.2012.03.075 Published: JUL 1 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
A first-principles technique capable of describing the state accurately near to excited states of semiconductors and insulators, namely the modified Becke-Johnson (mBJ) exchange potential approximation is used to investigate the opto-electronic response of magnesium spinel oxides: MgAl2O4 and MgGa2O4. The predicted bandgaps using the mBJ exchange approximation show a significant improvement over previous theoretical work using the common LDA and GGA, and are very closer to the experimental results. Band gap dependent optical parameters, like dielectric constant, index of refraction, reflectivity and optical conductivity are calculated and analyzed. The static dielectric constant and refractive index of MgGa2O4 are much larger than that of MgAl2O4. Refractive index drops below unity for higher energy photons, higher than 17 eV, show that the velocities of incident photons are greater than the velocity of light. However, these overlook can be explained by the fact that a signal must be transmitted as a wave packet rather than monochromatic wave. Moreover, the peak positions of the calculated optical parameters move down to low energies when the value of the band gap decreases. This comprehensive theoretical study of the optoelectronic properties predicts that these materials can be effectively used in the optical devices working in major part of the spectrum. (C) 2012 Elsevier B.V. All rights reserved.

42.
Title: Prediction study of the elastic and thermodynamic properties of the SnMg2O4, SnZn2O4 and SnCd2O4 spinel oxides
Author(s): Allali, D.; Bouhemadou, A.; Zerarga, F.; et al.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 60 Pages: 217-223 DOI: 10.1016/j.commatsci.2012.03.044 Published: JUL 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We have carried out a first-principles density functional study of the structural, elastic and thermodynamic properties for the SnMg2O4, SnZn2O4 and SnCd2O4 cubic normal spinel structures. We have calculated the equilibrium structural parameters: the lattice constant and internal structural parameter. These results agree very well with experimental data. We have investigated the zero-pressure single-crystal and polycrystalline elastic constants and their related properties, confirming prior theoretical results for SnMg2O4 and predicting values for SnZn2O4 and SnCd2O4. The pressure dependence of the elastic constants C-ij can be fit by a straight line over the range 0-30 GPa. Thermal and pressure effects on some macroscopic properties of SnMg2O4, SnZn2O4 and SnCd2O4 are predicted using the quasi-harmonic Debye model in which the lattice vibrations are taken into account. (C) 2012 Elsevier B. V. All rights reserved.

43.
Title: Type-2 fuzzy based adaptive synergetic power system control
Author(s): Nechadi, E.; Harmas, M. N.; Hamzaoui, A.; et al.
Source: ELECTRIC POWER SYSTEMS RESEARCH Volume: 88 Pages: 9-15 DOI: 10.1016/j.epsr.2012.01.009 Published: JUL 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
This paper introduces a new type-2 fuzzy based adaptive synergetic power system stabilizer used in damping power flow limiting oscillations that often occur following disturbances in power systems. Small magnitude and low frequency oscillations, linked to the electromechanical modes in power systems, often persist for long periods of time leading in some cases to loss of synchronism and eventually to blackouts. These oscillations may occur locally or between different areas of a power system. Among many robust control techniques to assure service continuity sliding mode has been proposed despite its inherent chattering drawback. This paper present a novel power system stabilizer based on synergetic control which possesses the same strong robustness and invariance to external disturbances as sliding mode but without its negative chattering. Type-1 fuzzy systems have also been heavily relied on to describe unknown system model but they lack fuzziness in dealing with uncertainties. Better suited to deal with uncertainties type-2 fuzzy systems are used in this paper in

approximating the unknown power system nonlinear dynamics while stability is insured through Lyapunov synthesis. Severe operating conditions are used in a simulation study to test the validity and effectiveness of the proposed method. Results indicate good performance and satisfactory transient dynamic behaviour. A multi-machine power system is used to demonstrate the performance of the proposed controller and to show its superiority over other conventional stabilizers used in the literature. (C) 2012 Elsevier B.V. All rights reserved.

44.

Title: Optical properties of xenon implanted CuInSe2 by photoacoustic spectroscopy

Author(s): Satour, F. Z.; Zegadi, A.

Source: JOURNAL OF LUMINESCENCE Volume: 132 Issue: 7 Pages: 1688-1694 DOI: 10.1016/j.jlumin.2012.02.009 Published: JUL 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

A theoretical relation is derived for the normalized photoacoustic amplitude signal of a gas-coupled cell for the case of double-layer solid samples with particular application given to ion implanted semiconductors. Numerical estimates for a solar cell of the type CdS/CuInSe2 based on experimental measured data of these compounds are given to illustrate the photoacoustic effect originating from double-layer samples. In application to ion implanted semiconductors, we show that the absorption coefficient of the implanted layer can be very easily extracted by photoacoustic spectroscopy if the absorption coefficient of the untreated substrate is known. We also present the optical properties results obtained from the analysis of the effect of xenon implantation into CuInSe2 single crystals with the energy of 40 keV and a dose of 5 x 10(16) ions/cm(2). (C) 2012 Elsevier B.V. All rights reserved.

45.

Title: Mechanical characterization of an electrostrictive polymer for actuation and energy harvesting

Author(s): Eddiai, A.; Meddad, M.; Touhtouh, S.; et al.

Source: JOURNAL OF APPLIED PHYSICS Volume: 111 Issue: 12 Article Number: 124115 DOI: 10.1063/1.4729532 Published: JUN 15 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Electroactive polymers have been widely used as smart material for actuators in recent years. Electromechanical applications are currently focused on energy harvesting and actuation, including the development of wireless portable electronic equipment autonomous and specific actuators such as artificial muscles. The problem to be solved is to make its devices the most efficient, as possible in terms of harvested energy and action. These two criteria are controlled by the permittivity of the electrostrictive polymer used, the Young's modulus, and their dependence on frequency and level of stress. In the present paper, we presented a model describing the mechanical behaviour of electrostrictive polymers with taking into account the mechanical losses. Young's modulus follows a linear function of strain and stress. However, when the elongation becomes higher, the data obtained from this strain linear trend and significant hysteresis loops appear the reflections on the existence of mechanical losses. In this work, to provide the analysis of the experimental observations, we utilized a theoretical model in order to define a constitutive law implying a representative relationship between stress and strain. After detailing this theoretical model, the simulation results are compared with experimental ones. The results show that hysteresis loss increases with the increase of frequency and strain amplitude. The model used here is in good agreement with the experimental results. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.4729532]

46.

Title: Structural, elastic and thermodynamic properties under pressure and temperature effects of MgIn2S4 and CdIn2S4

Author(s): Bouhemadou, A.; Haddadi, K.; Khenata, R.; et al.

Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 12 Pages: 2295-2300 DOI:

10.1016/j.physb.2012.03.017 Published: JUN 15 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
A density functional-based method is used to investigate the structural, elastic and thermodynamic properties of the cubic spinel semiconductors MgIn2S4 and CdIn2S4 at different pressures and temperatures. Computed ground structural parameters are in good agreement with the available experimental data. Single-crystal elastic parameters are calculated for pressure up to 10 GPa and temperature up to 1200 K. The obtained elastic constants values satisfy the requirement of mechanical stability, indicating that MgIn2S4 and CdIn2S4 compounds could be stable in the investigated pressure range. Isotropic elastic parameters for ideal polycrystalline MgIn2S4 and CdIn2S4 aggregates are computed in the framework of the Voigt-Reuss-Hill approximation. Pressure and thermal effects on some macroscopic properties such as lattice constant, volume expansion coefficient and heat capacities are predicted using the quasi-harmonic Debye model in which the lattice vibrations are taken into account. (C) 2012 Elsevier B.V. All rights reserved.

47.
Title: Role of Periodic Input Composition and Sweeping Gas for Improvement of Hydrogen Production in a Palladium Membrane Reactor by Partial Oxidation of Methane
Author(s): Chibane, Lemnouer; Djellouli, Brahim
Source: CHINESE JOURNAL OF CHEMICAL ENGINEERING Volume: 20 Issue: 3 Pages: 577-588 Published: JUN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The partial oxidation of methane under periodic operation over Ni/gamma-Al2O3 catalyst was investigated in a Pd-membrane reactor. The effects of key parameters such as the inlet composition and the sweeping gas on methane conversion and the hydrogen recovery are numerically established with two periodic input functions. In order to analyze the effect of the inputs modulation, the reaction was performed under low steam to methane ratio at a moderate temperature and pressure. It was obtained that to achieve process intensification is to operate the process in a periodic way. The main results show that the periodic input functions can improve the performance of the process compared to the optimal steady state operation. Moreover, there is an optimum amplitude of manipulated inputs leads to a maximum of hydrogen recovery. It is noteworthy that the comparison between the predicted performance via the sinusoidal and the square ways show that the better average performance was obtained with the square way.

48.
Title: EPIDEMIOLOGY OF GALLBLADDER CANCER IN ALGERIA
Author(s): Zoubida, Zaidi; Djamel, Abdellouche
Conference: 14th World Congress on Gastrointestinal Cancer of the European-Society-for-Medical-Oncology (ESMO) Location: Barcelona, SPAIN Date: JUN 27-30, 2012
Sponsor(s): European Soc Med Oncol (ESMO)
Source: ANNALS OF ONCOLOGY Volume: 23 Supplement: 4 Pages: 78-78 Published: JUN 2012
Times Cited: 0 (from All Databases)

49.
Title: Secure DV-Hop localization scheme against wormhole attacks in wireless sensor networks
Author(s): Labraoui, Nabila; Gueroui, Mourad; Aliouat, Makhlouf
Source: TRANSACTIONS ON EMERGING TELECOMMUNICATIONS TECHNOLOGIES Volume: 23 Issue: 4 Pages: 303-316 DOI: 10.1002/ett.1532 Published: JUN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

Localization is an important topic in mobile wireless ad hoc and sensor networks, which has received considerable attention from the research community during the past few decades. In many sensor networks applications, location awareness is useful or even necessary. However, because of their key role in wireless sensor networks, localization systems can be the target of an attack that could compromise the entire functioning of a wireless sensor network. In this paper, we present a novel defense mechanism against wormhole attacks in DV-Hop localization algorithm. The main idea of our approach is to plug in a proactive countermeasure to the basic DV-Hop scheme called Infection prevention. We choose the wormhole attack as our defending target because it is a particularly challenging attack that can be successfully launched without compromising any nodes or having access to any cryptographic keys. Using analysis and simulation, we show that our solution is effective in detecting and defending against wormhole attacks with a high detection rate. Copyright (c) 2011 John Wiley & Sons, Ltd.

50.

Title: Hybrid Moment/Position Control of a Parallel Robot
Author(s): Daachi, Mohamed El Hossine; Achili, Brahim; Daachi, Boubaker; et al.
Source: INTERNATIONAL JOURNAL OF CONTROL AUTOMATION AND SYSTEMS Volume: 10 Issue: 3 Pages: 536-546 DOI: 10.1007/s12555-012-0310-z Published: JUN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this paper, a hybrid moment/position controller in task space is proposed for tasks involving a contact between a robot and its environment. We consider a contour-tracking task performed by a six DOF (Degrees Of Freedom) parallel robot. The task space dynamic model of the robot in contact with its environment, seen as a black box, is estimated by a MLP-NN (Multi Layer Perceptron Neural Network). The neural network non-linearity is treated using Taylor series expansion. An adaptation algorithm of the neural parameters resulting from a closed-loop stability analysis is proposed. The performance of the proposed controller is validated on the C5 parallel robot by considering two different environments: rigid and compliant.

Title: On the Quantization of One-Dimensional Nonstationary Coulomb Potential System
Author(s): Menouar, Salah; Maamache, Mustapha; Choi, Jeong Ryeol; et al.
Source: JOURNAL OF THE PHYSICAL SOCIETY OF JAPAN Volume: 81 Issue: 6 Article Number: 064003 DOI: 10.1143/JPSJ.81.064003 Published: JUN 2012
Times Cited: 0 (from All Databases)

51.
[Hide abstract]
Exact solutions of the one-dimensional Schrodinger equation with a time-dependent Coulomb potential [-z(t)/|x|] are investigated using the invariant method (Lewis and Riesenfeld theorem) together with unitary transformation approach. The eigenfunctions and the corresponding eigenvalues of the system are obtained analytically. When the time dependence of all coefficients vanishes, our results exactly reduce to those known for stationary case.

52.

Title: Effect of Water Corrosion on Cracks and Vickers Imprints in Glass
Author(s): Benbahouche, Saci; Brient, Antoine; Rouxel, Tanguy; et al.
Source: INTERNATIONAL JOURNAL OF FRACTURE Volume: 175 Issue: 2 Pages: 199-206 DOI: 10.1007/s10704-012-9712-4 Published: JUN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Erosion and corrosion result in potential material loss. The erosion is a physical phenomenon but corrosion is chemical one. The study of these two phenomena, as functions of time and temperature, would lead to a better understanding of glass surface damage.
Results allow one to determine the effects of immersion time, temperature of the water bath and residual stresses generated by Vickers indentation on the radial crack and topography of the imprint on the surface of a soda-lime silica glass. Water corrosion effects are different at the imprint

corner and the radial crack tip as compared to edges and faces.

53.

Title: A population-based iterated greedy algorithm for the minimum weight vertex cover problem

Author(s): Bouamama, Salim; Blum, Christian; Boukerram, Abdellah

Source: APPLIED SOFT COMPUTING Volume: 12 Issue: 6 Pages: 1632-1639 DOI: 10.1016/j.asoc.2012.02.013 Published: JUN 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Given an undirected, vertex-weighted graph, the goal of the minimum weight vertex cover problem is to find a subset of the vertices of the graph such that the subset is a vertex cover and the sum of the weights of its vertices is minimal. This problem is known to be NP-hard and no efficient algorithm is known to solve it to optimality. Therefore, most existing techniques are based on heuristics for providing approximate solutions in a reasonable computation time.
Population-based search approaches have shown to be effective for solving a multitude of combinatorial optimization problems. Their advantage can be identified as their ability to find areas of the space containing high quality solutions. This paper proposes a simple and efficient population-based iterated greedy algorithm for tackling the minimum weight vertex cover problem. At each iteration, a population of solutions is established and refined using a fast randomized iterated greedy heuristic based on successive phases of destruction and reconstruction. An extensive experimental evaluation on a commonly used set of benchmark instances shows that our algorithm outperforms current state-of-the-art approaches. (C) 2012 Elsevier B. V. All rights reserved.

54.

Title: Full-wave modeling of superconducting microstrip lines including the nonlinearity behavior

Author(s): Mayouf, A.; Mayouf, F.; Djahli, F.; et al.

Source: PHYSICA C-SUPERCONDUCTIVITY AND ITS APPLICATIONS Volume: 476 Pages: 15-18 DOI: 10.1016/j.physc.2012.02.002 Published: JUN 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

This paper describes a new theoretical model to characterize the superconducting microstrip line and carefully studies the effects of the nonlinearity of superconductors, the strip thickness and losses on circuit performances. The microstrip line has been considered as a multilayered structure. The integral equation for the electrical field has been formulated, in the spectral domain, using the exact dyadic Green's function of bianisotropic planar media. The Galerkin's technique has been used for solving this integral equation. Obtained results concern the effective permittivity constant and the attenuation constant versus frequency and temperature rate. (C) 2012 Elsevier B. V. All rights reserved.

55.

Title: PbSO4 as a precursor for positive active material electrodes

Author(s): Foudia, M.; Matrakova, M.; Zerroual, L.

Conference: 8th International Conference on Lead-Acid Batteries (LABAT) Location: BULGARIA Date: JUN 07-10, 2011

Source: JOURNAL OF POWER SOURCES Volume: 207 Pages: 51-55 DOI: 10.1016/j.jpowsour.2012.01.075 Published: JUN 1 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

The present work investigates the use of PbSO4 as a precursor for positive active material (PAM) electrodes. Lead sulphate was prepared by the chemical precipitation of a lead nitrate solution in the presence of sodium sulphate. Tubular electrodes were filled with PbSO4 and oxidized in solutions with different pH. The study is based on X-ray diffraction analysis (XRD), Thermogravimetry (TG), Differential scanning calorimetry (DSC) and Scanning electronic

microscopy (SEM). The capacity of the different PAM electrodes was also determined. The results show that the pH of the electrolyte affects significantly the average crystallite size, phase composition and PAM capacity. (C) 2012 Elsevier B.V. All rights reserved.

56.

Title: Ab initio study of some fundamental physical properties of the cubic inverse-perovskite Mn3ZnC and Mn3GeC

Author(s): Bouhemadou, A.; Ghebouli, M. A.; Ugur, G.; et al.

Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 58 Pages: 162-166 DOI: 10.1016/j.commatsci.2012.01.030 Published: JUN 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Structural, elastic, electronic and magnetic properties of Mn3ZnC and Mn3GeC are investigated via ab initio calculations. Total energy calculations show that the ferromagnetic state is energetically more stable than the non-magnetic state at equilibrium volume. No found imaginary phonon frequency in the whole Brillouin zone for the two compounds supports their dynamical stability. The elastic parameters are predicted. The electrical conductivity is assured by the Mn-d electrons. The total moment comes principally from the transition metal Mn in both compounds. The magnetic moment of the Mn atom decrease considerably when the Zn atom is substituted by the Ge one. (C) 2012 Elsevier B.V. All rights reserved.

57.

Title: Gaussian laser beam tailoring using acoustooptic cell

Author(s): Bencheikh, Abdelhalim; Ferria, Kouider

Source: OPTICS AND LASER TECHNOLOGY Volume: 44 Issue: 4 Pages: 806-809 DOI: 10.1016/j.optlastec.2011.11.026 Published: JUN 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Profile shaping of a Gaussian laser beam by an acoustic wave is well described using Collins integral and ABCD matrix formalism. It is shown by a numerical simulation that the relative width of the laser beam to the ultrasonic wavelength and the acoustic pressure inside the acoustooptic cell act on the light intensity diffraction pattern.

Obtained results show that the output intensity profile differs from the incident Gaussian beam shape, and it is more broadened with an increase in the acoustic pressure. The intensity of a focused laser beam is transformed in a flat form in the central region if the acoustic pressure is proprely controlled.

On the other hand the intensity longitudinal range (ILR) of the flat shape is discussed along the propagation axes, we have found the ILR is about 2 mm for a focal length distance f=100 mm. (C) 2011 Elsevier Ltd. All rights reserved.

58.

Title: Clinical, diagnostic and Cryptococcosis neuromeningees evolutionary aspects in HIV infection

Author(s): Mounira, Rais; Ouyahia, Amel; Gasmi, Abedelkader; et al.

Source: RETROVIROLOGY Volume: 9 Supplement: 1 Article Number: P149 DOI: 10.1186/1742-4690-9-S1-P149 Published: MAY 25 2012

Times Cited: 0 (from All Databases)

59.

Title: Synthesis and adsorption properties, toward some heavy metal ions, of a new polystyrene-based terpyridine polymer

Author(s): Saadeh, Haythem A.; Abu Shairah, Eman A.; Charef, Noureddine; et al.

Source: JOURNAL OF APPLIED POLYMER SCIENCE Volume: 124 Issue: 4 Pages: 2717-2724 DOI: 10.1002/app.34977 Published: MAY 15 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

A novel polymeric ligand having 2,2':6',2-terpyridine as pendant group was prepared through a Williamson type etherification approach for the reaction between 4'-hydroxy-2,2': 6',2-terpyridine and the commercially available 4-chloromethyl polystyrene. The chelating properties of the new polymer toward the divalent metal ions (Cu2+, Zn2+, Ni2+, and Pb2+) in aqueous solutions was studied by a batch equilibration technique as a function of contact time, pH, mass of resin, and concentration of metal ions. The amount of metal-ion uptake of the polymer was determined by using atomic absorption spectrometry. Results of the study revealed that the resin exhibited higher capacities and a more pronounced adsorption toward Pb2+ and that the metal-ion uptake follows the order: Pb2+ > Cu2+ > Zn2+ > Ni2+. The adsorption and binding capacity of the resin toward the various metal ions investigated are discussed. (C) 2011 Wiley Periodicals, Inc. J Appl Polym Sci, 2012

60.

Title: Study of iPP crosslinking by means of dynamic and steady rheology measurements

Author(s): Khellaf, S.; Khoffi, F.; Tabet, H.; et al.

Source: JOURNAL OF APPLIED POLYMER SCIENCE Volume: 124 Issue: 4 Pages: 3184-3191 DOI: 10.1002/app.34996 Published: MAY 15 2012

Times Cited: 1 (from All Databases)

[Hide abstract]

The crosslinking of isotactic polypropylene (iPP) using crosslinking agents (CAs) based on a peroxide/sulfur/accelerator system is a very attractive new method that has been reported recently. The present work deals with the study of the dynamic rheological behavior of iPP during and after the crosslinking process. The influence of the CA concentration and the processing temperature T on the rheological behavior of the iPP was analyzed. The kinetics of the crosslinking reaction was established using the technique described by G. A. Harpell and D. H. Walrod. This reaction is found to be of order one. At T = 180 degrees C, the crosslinking reaction was faster. By varying the crosslinking agent content, different crosslinking degrees of iPP, expressed by the corresponding gel content, are achieved. On the other hand, the modified polypropylene exhibits an unexpected viscosity-shear rate pattern, which describes the reverse crosslinking reaction mainly occurring by the opening of the bridges of the new interpenetrating network (IPN) formed. (C) 2011 Wiley Periodicals, Inc. J Appl Polym Sci, 2012

61. Title: Preserving log-convexity for generalized Pascal triangles

Author(s): Ahmia, Moussa; Belbachir, Hacene

Source: ELECTRONIC JOURNAL OF COMBINATORICS Volume: 19 Issue: 2 Article Number: P16 Published: MAY 4 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

We establish the preserving log-convexity property for the generalized Pascal triangles. It is an extension of a result of H. Davenport and G. Polya "On the product of two power series", who proved that the binomial convolution of two log-convex sequences is log-convex.

62. Title: Structural, mechanical and electronic properties of transition metal hydrides MH2 (M = Ti, Zr, Hf, Sc, Y, La, V and Cr)

Author(s): Chihi, T.; Fatmi, M.; Bouhemadou, A.

Source: SOLID STATE SCIENCES Volume: 14 Issue: 5 Pages: 583-586 DOI: 10.1016/j.solidstatesciences.2012.02.010 Published: MAY 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

First-principles calculations have been carried out to investigate the structural, mechanic and electronic of transition metal hydrides MH2 (M = Ti, Zr, Hf, Sc, Y, La, V and Cr). It is found that TiH2 is mechanically unstable because of a negative C-44 = -21.31 GPa and C-11-C-12 < 0, the same behavior can be found in MH2 (M = Zr, Hf, and Y) compounds. Also there is a strong interaction between M (Ti, Zr, Hf, Sc, Y, La, V and Cr) and H. On the other hand, the

H-H bond orders are always negative or nil reason of brittleness. (C) 2012 Elsevier Masson SAS. All rights reserved.

63. **Title: A new approach for load flow analysis of integrated AC-DC power systems using sequential modified Gauss-Seidel methods**
Author(s): Messalti, Sabir; Belkhiat, Saad; Saadate, Shahrokh; et al.
Source: EUROPEAN TRANSACTIONS ON ELECTRICAL POWER Volume: 22 Issue: 4 Pages: 421-432 DOI: 10.1002/etep.570 Published: MAY 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The paper describes a new approach for the load flow calculations of integrated ACDC system. A simple and reliable method for sequential modified Gauss and GaussSeidel power flow for ACDC system is developed. This approach is based on applying nodal injection theory at all buses. The DC system is treated by the current injected to the buses where it is connected and its effect is reflected at internal buses by additional power injection. Iterations between AC and DC power flow algorithms are made to match boundary conditions between the two systems. In this approach, the active and reactive power and the AC voltages at the converter buses are considered as the interface between the AC and DC equations in each iteration step. The combined ACDC equations are solved separately using sequential modified Gauss and GaussSeidel methods. The developed algorithm to solve the ACDC power flow has been tested on the IEEE 9-bus test system. Copyright (c) 2011 John Wiley & Sons, Ltd.

64. **Title: Analytical formulas for calculation of K X-ray production cross sections by alpha ions**
Author(s): Abdellatif, A.; Kahoul, A.; Deghfel, B.; et al.
Source: RADIATION PHYSICS AND CHEMISTRY Volume: 81 Issue: 5 Pages: 499-505 DOI: 10.1016/j.radphyschem.2011.12.036 Published: MAY 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In the present study, different procedures are followed to deduce the semi-empirical and the empirical K X-rayX-ray production cross sections induced by alpha ions from the available experimental data and the theoretical results of the ECPSSR model for elements with 20 <= Z <= 30. The deduced K X-ray production cross sections are compared with predictions from ECPSSR model and with other earlier works. Generally, the deduced K X-ray production cross sections obtained by fitting the available experimental data for each element separately give the most reliable values than those obtained by a global fit. (C) 2012 Elsevier Ltd. All rights reserved.

65. **Title: Prostaglandin E-2 induced contraction of human intercostal arteries is mediated by the EP3 receptor**
Author(s): Longrois, Dan; Gomez, Ingrid; Foudi, Nabil; et al.
Source: EUROPEAN JOURNAL OF PHARMACOLOGY Volume: 681 Issue: 1-3 Pages: 55-59 DOI: 10.1016/j.ejphar.2012.01.041 Published: APR 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Arterial vascularization of the spinal cord may be mechanically or functionally altered during thoracoabdominal surgery/ intravascular procedures. Increased arterial pressure has been shown to restore spinal perfusion and function probably by increasing the blood flow through the intercostal arteries. The regulation of human intercostal artery (HICA) vascular tone is not well documented. Prostaglandin (PG) E-2 concentration is increased during inflammatory conditions and has been shown to regulate vascular tone in many preparations. In this context, the pharmacological response of HICA to PGE2 and the characterization of the PGE(2) receptor subtypes (EP1, EP2, EP3 or EP4) involved are of importance and that is the aim of this study. Rings of HICA were prepared from 29 patients and suspended in organ

baths for isometric recording of tension. Cumulative concentration-response curves were performed in these preparations with various EP receptor agonists in the absence or presence of different receptor antagonists or inhibitors. PGE(2) induced the contraction of HICA (E-max=7.28 +/- 0.16 g; pEC(50) value=0.79 +/- 0.18; n=17); contractions were also observed with the EP3 receptor agonists, sulprostone, 17-phenyl-PGE(2), misoprostol or ONO-AE-248. In conclusion, PGE(2) induced vasoconstriction of HICA via EP3 receptor subtypes and this result was confirmed by the use of selective EP receptor antagonists (L-826266, ONO-8713, SC-51322) and by a strong detection of EP3 mRNA. These observations suggest that in the context of perioperative inflammation, increased PGE2 concentrations could trigger vasoconstriction of HICA and possibly alter spinal vascularization. (C) 2012 Elsevier B.V. All rights reserved.

66. **Title:** Removal of methyl orange from aqueous solution by uncalcined and calcined MgNiAl layered double hydroxides (LDHs)
Author(s): Zaghouane-Boudiaf, Hassina; Boutahala, Mokhtar; Arab, Loubna
Source: CHEMICAL ENGINEERING JOURNAL Volume: 187 Pages: 142-149 DOI: 10.1016/j.cej.2012.01.112 Published: APR 1 2012
Times Cited: 1 (from All Databases)

[Hide abstract]

In this study, both uncalcined (MgNiAl-CO3) and calcined (MgNiAl-C) hythotalcites were used in the adsorption of methyl orange (MO) from aqueous solution as an anionic dye in a batch system. Various conditions such as initial dye concentration, adsorbent dosage, contact time, solution pH, and temperature were investigated. The adsorption kinetics was studied using classic equations of pseudo-first-order, -second-order and intraparticle diffusion models. The dynamical data fit well with the pseudo-second-order kinetic model. The positive value of the changes in enthalpy (Delta H degrees), the negative value of Gibbs free energy (Delta G degrees), showed that the adsorption is endothermic and spontaneous for all the studied temperatures. The equilibrium adsorption data were analyzed using three non linear adsorption models: Langmuir, Freundlich and Redlich-Peterson. The results showed that Langmuir and Redlich-Peterson isotherms fit the experimental results very well with high correlation coefficients. The Langmuir isotherm model exhibited a maximum adsorption capacity q(max) of 375 mg/g for the calcined MgNiAl-C. This result is of practical interest, with respect to the selection of sorbents, to optimize aquatic environment remediation technologies. (C) 2012 Elsevier B.V. All rights reserved.

67. **Title:** Simulation of multimodal vibration damping of a plate structure using a modal SSDI-Max technique
Author(s): Cherif, Aida; Richard, Claude; Guyomar, Daniel; et al.
Source: JOURNAL OF INTELLIGENT MATERIAL SYSTEMS AND STRUCTURES Volume: 23 Issue: 6 Pages: 675-689 DOI: 10.1177/1045389X12437891 Published: APR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

Modal synchronized switch damping on inductor control is a vibration damping technique that combines the advantages of both semiactive and active control techniques based on a modal strategy. This method allows targeting any unwanted vibration mode of a structure while using a semiactive autonomous synchronized switch damping on inductor damping technique. This article presents a performance analysis of an improved modal synchronized switch damping on inductor approach called "SSDI-Max." The particularity of this new approach is to maximize the self-generated voltage amplitude by a proper definition of the switch instants (voltage inversion) according to the chosen targeted mode. Following the basic modal synchronized switch damping on inductor technique, the switch is synchronized with the chosen modal coordinate extremum. In the investigated approach, the voltage is increased

by waiting for the next voltage extremum following immediately any targeted modal coordinate extremum in a given time window. This article presents simulations performed on a model representative of a clamped plate. The damping results are given in the case of multimodal, pulse, or noise excitations. This article analyzes the performance of the observer used to focus on a given mode and the influence of the control time window on the damping performance of the system. The results show that substantial damping increase can be obtained with a very slight modification of the control architecture and the same control energy.

68. Title: Influence of annealing on the structural properties of evaporated CoxCr1-x/Si(100) and CoxCr1-x/glass thin films
Author(s): Djouada, I.; Kharmouche, A.; Schmerber, G.
Source: EUROPEAN PHYSICAL JOURNAL-APPLIED PHYSICS Volume: 58 Issue: 1 Article Number: 10301 DOI: 10.1051/epjap/2012110391 Published: APR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Series of CoxCr1-x thin films have been evaporated under vacuum onto Si(1 0 0) and glass substrates, x ranging from 0.80 to 0.88; these chemical composition values are provided by modeling Rutherford Backscattering (RBS) spectra using SIMNRA program. Thickness ranges from 17 to 220 nm. Microscopic characterizations of the films have been performed with X-ray diffraction (XRD) measurements. The samples have been annealed for 1 h at 700 degrees C. All the as deposited samples are polycrystalline, with an hcp structure and show a < 0 0 0 1 > preferred orientation. The annealed samples, on the contrary, present hcp and fcc phases. The as deposited films are under a compressive stress while the annealed films are under a tensile stress. Grain sizes increase with chromium content decrease and are higher for the annealed films. Excellent orientations of the CoCr crystallites around the normal to the film plane have been observed, the full width at half maximum (FWHM) ranging from 0.49 degrees to 0.79 degrees.

69. Title: A new sol-gel synthesis of Mn3O4 oxide and its electrochemical behavior in alkaline medium
Author(s): Naamoune, Farid; Messaoudi, Bouzid; Kahoul, Abdelkrim; et al.
Source: IONICS Volume: 18 Issue: 4 Pages: 365-370 DOI: 10.1007/s11581-011-0621-8 Published: APR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this investigation, Mn3O4 spinel-type oxide was synthesized at low temperature using the Pechini process. We employed a sol-gel route, in which a solution of Mn(II) in a mixture of citric acid and ethylene glycol was heated to form a polymeric precursor, followed by annealing at lower temperature. The oxide obtained was identified by X-ray diffraction, scanning electron spectroscopy, and Raman spectroscopy. The results revealed that the formation of Mn3O4 hausmannite structure with a minor secondary phase of MnSO4 occurred at or above 280 A degrees C. The sample powder consisted of fine grains with homogeneous morphology and an average size close to 1 mu m was obtained. This new preparation procedure yielded an electrode oxide which appears to be a promising cathode material for fuel cells and metal-air batteries.

70. Title: The influence of pH electrolyte on the electrochemical deposition and properties of nickel thin films
Author(s): Boubatra, Mustapha; Azizi, Amor; Schmerber, Guy; et al.
Source: IONICS Volume: 18 Issue: 4 Pages: 425-432 DOI: 10.1007/s11581-011-0642-3 Published: APR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Ni thin films were electrodeposited on gold substrate from chloride solution with different pH

at room temperature. The effect of electrolyte pH on Ni coatings was studied by using the cyclic voltammetry, the scanning electron microscopy (SEM), x-ray diffraction, and alternating gradient force magnetometer measurements. From electrochemical measurements, the onset potential for reduction of Ni was gradually shifted towards more cathodic scan with increase in pH; this is due to the protons in the case of low pH values and to the hydroxide ions in the case of higher pH values. The SEM study showed that a granular and compact structure of the electrodeposited Ni layers and the variation of film morphology with bath pH are established. The x-ray diffraction spectra revealed the formation of fcc structure Ni thin films with a preferential orientation along the Ni(111). The size of the deposited crystals in both the cases has been found to be in the range of 49-153 nm. Magnetic properties such as coercivity and saturation magnetization showed strong dependence on the electrolyte solution pH and consequently the crystallite size. Coercivity higher than 130-160 Oe was achieved for a pH value of 4 to 5. The differences observed in the magnetic properties were attributed to the structural changes caused by the electrolyte pH.

71. **Title: On-line robust nonlinear state estimators for nonlinear bioprocess systems**
Author(s): Iratni, A.; Katebi, R.; Mostefai, M.
Source: COMMUNICATIONS IN NONLINEAR SCIENCE AND NUMERICAL SIMULATION Volume: 17 Issue: 4 Pages: 1739-1752 DOI: 10.1016/j.cnsns.2011.09.032 Published: APR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

This paper presents the design of a new robust nonlinear estimator for estimation of states of nonlinear systems. Two approaches are considered based on the state-dependent Riccati equation formulation and the technique of H-infinity control design. The proposed method differs from other well-known state estimators, because not only nonlinear dynamics but also the robustness is taken into account. The proposed method is implemented and tested on a biological wastewater system. The simulation study compares the Extended Kalman Estimator (EKE), the State-Dependent Riccati Estimator (SDRE), and the Extended H-infinity Estimator (EHE) with a new proposed State Dependent H-infinity Estimator (SDHE). The results are compared for different weather conditions, i.e. dry, rain and storm, showing a superior performance of the proposed method. (C) 2011 Elsevier B.V. All rights reserved.

72. **Title: Xe irradiation-induced defects in CuInSe2 by phase resolved photoacoustic spectroscopy**
Author(s): Satour, F. Z.; Zegadi, A.
Source: MATERIALS SCIENCE AND ENGINEERING B-ADVANCED FUNCTIONAL SOLID-STATE MATERIALS Volume: 177 Issue: 5 Pages: 436-440 DOI: 10.1016/j.mseb.2012.01.018 Published: MAR 25 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

We report a study on the optical properties of 40 keV Xe+ implants with a dose of 5 x 10(16) ions/cm(2) into p-type conducting CuInSe2 single crystals using the phase resolved method of the photoacoustic spectroscopy (PAS) technique. Photoacoustic spectra have been measured in the photon energy range 0.7 < hv < 1.4 eV prior and after implantation at various phase angles using a high resolution fully computerized spectrometer. Once the spectra separation is carried out, an analysis on the impact of Xe+ on the defect structure of CuInSe2 is presented. The results obtained here are discussed in the light of current reported literature. (C) 2012 Elsevier B.V. All rights reserved.

73. **Title: Non-adiabatic quantum evolution: The S matrix as a geometrical phase factor**
Author(s): Saadi, Y.; Maamache, M.
Source: PHYSICS LETTERS A Volume: 376 Issue: 16 Pages: 1328-1334 DOI:

10.1016/j.physleta.2012.02.054 Published: MAR 19 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We present a complete derivation of the exact evolution of quantum mechanics for the case when the underlying spectrum is continuous. We base our discussion on the use of the Weyl eigendifferentials. We show that a quantum system being in an eigenstate of an invariant will remain in the subspace generated by the eigenstates of the invariant, thereby acquiring a generalized non-adiabatic or Aharonov-Anandan geometric phase linked to the diagonal element of the S matrix. The modified Pischl-Teller potential and the time-dependent linear potential are worked out as illustrations. (C) 2012 Elsevier B.V. All rights reserved.

74. Title: Efficiency of the entomopathogenic fungus Verticillium lecanii in the biological control of Trialeurodes vaporariorum, (Homoptera: Aleyrodidae), a greenhouse culture pest
Author(s): Bouhous, Mostefa; Larous, Larbi
Source: AFRICAN JOURNAL OF MICROBIOLOGY RESEARCH Volume: 6 Issue: 10 Pages: 2435-2442 DOI: 10.5897/AJMR11.1502 Published: MAR 16 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Our investigation in the region of Jijel revealed that whiteflies are the predominant greenhouses pests; they are polyphagous, moreover, some species can transmit many plant viruses. The treatment method is based on the systematic use of insecticides that have side effects on both the consumer and the farmer. The objective of this study was to evaluate the use of biological control in situ and in vitro as an alternative method by using an entomopathogenic fungus Verticillium lecanii. In vitro experiments showed that the fungus was active during all stages of development of the insect, Trialeurodes vaporariorum Westwood (Homoptera: Aleyrodidae): Eggs (LD50 = 0.59. 10(7) spores / ml) larvae (LD50 = 0.5. 10(3) spores / ml) and adults. Our results showed the influence of spore concentration, contact time and relative humidity on the development of the parasite to reach an efficient anti-larval effect of 100%.

75. Title: Nutritional Factors, Homocysteine and C677T Polymorphism of the Methylenetetrahydrofolate Reductase Gene in Algerian Subjects with Cardiovascular Disease
Author(s): Houcher, Zahira; Houcher, Bakhouche; Touabti, Abderrezak; et al.
Source: PTERIDINES Volume: 23 Issue: 1 Pages: 14-21 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The C677T variant of methylenetetrahydrofolate reductase (MTHFR), a key enzyme in the remethylation of homocysteine (HCY) to methionine, is a frequent genetic cause of moderate hyperhomocysteinemia (HHCY) among individuals with cardiovascular disease (CVD), and particularly when combined with other factors such as hyperlipidaemia. However, in Algeria the influence of nutrient-gene interactions is not known. The aim of the present study was to explore the influence of age and gender, together with folate status, on the association between the C677T MTHFR polymorphism and plasma total HCY (tHCY) concentrations. This research was carried out as a prospective study on 98 patients hospitalized in the Cardiology Section, University of Setif, Algeria. Mean age of participants was 57 y (range 20-96 y). The genetic analysis of the MTHFR C677T polymorphism was performed by real-time polymerase chain reaction (PCR) performed on Light Cycler in borosilicate capillaries with MTHFR 677CT polymorphism detection kit. The concentrations of tHCY, folic acid vitamin B-12 levels were determined using a competitive immunoassay on the IMMULITE 1000 Analyzers. Plasma total cholesterol, triglycerides, glucose, creatinine and urea concentrations were measured by colorimetric methods. Assays were conducted according to the manufacturers' instructions. Plasma tHCY was significantly higher in the patients with CVD, and HHCY was associated with the presence of mildly elevated serum urea and creatinine (p <0.05). MTHFR

gene mutation does not seem to be associated with elevation of plasma tHCY in the studied patients and this lack of correlation could be influenced by the higher folate concentrations in our study. CVD patients with 677CT/TT genotypes had a higher concentration of total cholesterol than those with 677CC genotype (p <0.05). Although, the presence of 677T variant together with hypofolatemia (<15.4 ng/ml) had a more detrimental effect on the level of total cholesterol (p <0.05). Folatemia and vitamin B-12 were much higher in 677CC genotype compared to 677CT/TT genotype in CVD subjects without hyperlipidemia (p <0.05). However in patients with hyperlipidemia these values became lower also with 677CC genotype. In conclusion, hyperlipidemia affects the levels of plasma folate and vitamin B-12 concentrations independent of mutated MTHFR genotype. The effect of 677T variant on total cholesterol, folate and vitamin B-12 concentrations may relate to possible adverse effects of elevated tHCY on lipid profiles and on plasma folate and vitamin B-12.

76. **Title: Influence of organic additives on electrodeposition of Co-Cu alloys from sulphate bath**
Author(s): Mentar, L.; Khelladi, M. R.; Azizi, A.; et al.
Source: TRANSACTIONS OF THE INSTITUTE OF METAL FINISHING Volume: 90 Issue: 2 Pages: 98-104 DOI: 10.1179/0020296712Z.0000000008 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work, the authors report on the influence of additives on the onset of deposition, the current efficiency (CE) and the nucleation growth mechanism of Co-Cu alloys electrodeposited on n-Si(100) substrate from sulphate solution with an addition of sodium citrate (SC) and citric acid (CA). The study was carried out by means of cyclic voltammetry, chronoamperometry methods using the Scharifker-Hills model for the determination of nucleation and growth mechanism and some kinetic parameters for nucleation. The CV curves indicate that the deposition potential of Cu(II) is shifted to more negative potentials while additive anion is added in the solution. Also, the results show that the additives do not improve the CE. For all baths, electrodeposited Co-Cu alloy follows instantaneous nucleation and three-dimensional (3D) diffusion limited growth. The nucleation density in the solutions without additive and with SC increases exponentially with the potential whereas in solution containing CA additive, it is no longer possible to consider exponential increase, indicating the existence of a reaction in addition to the 3D nucleation mechanism in the Co-Cu electrodeposition process.

77. **Title: ISOLATION, IDENTIFICATION AND ANTIMICROBIAL ACTIVITY OF PSEUDOMONADS ISOLATED FROM THE RHIZOSPHERE OF POTATOES GROWING IN ALGERIA**
Author(s): Mezaache-Aichour, S.; Gueehi, A.; Nicklin, J.; et al.
Source: JOURNAL OF PLANT PATHOLOGY Volume: 94 Issue: 1 Pages: 89-98 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Fourteen bacterial isolates from the rhizosphere of potato plants growing near Setif, (Algeria) were characterised as fluorescent Pseudomonads by phenotypical methods and one was identified as Pseudomonas chlororaphis by sequencing ribosomal DNA. In dual culture, this isolate inhibited the growth of the phytopathogenic fungi Fusarium oxysporum f. sp. lycopersici, E oxysporum f. sp. albedinis, F. solani and Rhizoctonia solani and the oomycete Pythium ultimum. Extracts of supernatants from liquid cultures of the Ps. chlororaphis isolate completely inhibited these organisms when incorporated into potato dextrose agar at a rate equivalent to 0.31 ml culture filtrate/ml, or greater. In a disc assay, extracts equivalent to 0.31 ml supernatant gave inhibition zones of 15 mm and 25 mm for the Gram-positive bacteria Bacillus subtilis and Paracoccus paratrophus, respectively. Fractionation of extracts of supernatants by TLC and HPLC with diode array detection allowed the identification of phenazine carboxylic acid as one of the antimicrobial compounds and the tentative identification of two others as 2-hydroxy phenazine carboxylic acid and 2-hydroxy phenazine.

78. **Title: Evaluation of springback under the effect of holding force and die radius in a stretch bending test**
Author(s): Ouakdi, E. H.; Louahdi, R.; Khirani, D.; et al.
Source: MATERIALS & DESIGN Volume: 35 Pages: 106-112 DOI: 10.1016/j.matdes.2011.09.003 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work, we evaluate springback using U-form stretch bending tests. Tests are carried out on aluminum alloy test pieces using an experimental set up made in our laboratory. This apparatus can be mounted on a tensile testing machine and gives the possibility to vary several parameters. We show the role played by certain factors such as die radius of curvature, blank holding force (BHF) and stretching depth. Springback and sliding at extremities are strongly influenced by these technological and geometrical parameters. In this work we also show the gradual decrease of springback with the increase of stretching depth. The radius of curvature of the die can remarkably influence the two stages of springback. (C) 2011 Elsevier Ltd. All rights reserved.

79. **Title: Theory study of structural parameters, elastic stiffness, electronic structures and lattice dynamics of RBRh3 (R = Sc, Y, La and Lu)**
Author(s): Bouhemadou, A.; Ugur, G.; Ugur, S.; et al.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 54 Pages: 336-344 DOI: 10.1016/j.commatsci.2011.10.029 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Density functional-based method has been used to investigate the systematic trends for structural parameters, elastic stiffness, lattice dynamics and thermal properties of cubic perovskite-type RBRh3 depending on the type of R atoms (R are Sc, Y, La and Lu). The structural parameters, single-crystal elastic constants, directional elastic wave velocities and their pressure dependence are calculated and analyzed in comparison with the available experimental and theoretical data. A set of isotropic elastic parameters and related properties, namely bulk and shear moduli, Young's modulus, Poisson's ratio, Lame's coefficients, average sound velocity. Debye temperature and thermal conductivity are predicted in the frame work of the Voigt-Reuss-Hill approximation for the polycrystalline RBRh3. The correlation between the mechanical properties and electronic structures has been discussed. Using the density-functional perturbation theory (DFPT), the phonon properties of RBRh3 (R = Sc, Y and La) are investigated for the first time. (C) 2011 Elsevier B.V. All rights reserved.

80. **Title: Elastic, electronic and thermodynamic properties of fluoro-perovskite KZnF3 via first-principles calculations**
Author(s): Seddik, T.; Khenata, R.; Merabiha, O.; et al.
Source: APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING Volume: 106 Issue: 3 Pages: 645-653 DOI: 10.1007/s00339-011-6643-2 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The elastic, electronic and thermodynamic properties of fluoro-perovskite KZnF3 have been calculated using the full-potential linearized augmented plane wave (FP-LAPW) method. The exchange-correlation potential is treated with the generalized gradient approximation of Perdew-Burke-Ernzerhof (GGA-PBE). Also, we have used the Engel and Vosko GGA formalism (GGA-EV) to improve the electronic band structure calculations. The calculated structural properties are in good agreement with available experimental and theoretical data. The elastic constants C (ij) are calculated using the total energy variation with strain

technique. The shear modulus, Young's modulus, Poisson's ratio and the Lam, coefficients for polycrystalline KZnF3 aggregates are estimated in the framework of the Voigt-Reuss-Hill approximations. The ductility behavior of this compound is interpreted via the calculated elastic constants C (ij) . Electronic and bonding properties are discussed from the calculations of band structure, density of states and electron charge density. The thermodynamic properties are predicted through the quasi-harmonic Debye model, in which the lattice vibrations are taken into account. The variation of bulk modulus, lattice constant, heat capacities and the Debye temperature with pressure and temperature are successfully obtained.

81. Title: Optimal feeding profile for a fuzzy logic controller in a bioreactors using genetic algorithm
Author(s): Mokeddem, D.; Khellaf, A.
Source: NONLINEAR DYNAMICS Volume: 67 Issue: 4 Pages: 2835-2845 DOI: 10.1007/s11071-011-0192-2 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The ultimate objective of any control strategy is to maximize productivity, and improve the quantity of products and reduce costs. The performance of a bioprocess operating in fed batch production of protein can be obtained in two steps. First, we determine the optimal trajectories (profiles) for the variables of interests and then a genetic algorithm based on a fuzzy logic controller is applied to regulate these variables around these profiles.
An optimal feeding profile of a fed batch process based on an evolutionary algorithm is designed. This algorithm is well suited to derive multi-objective optimization, since it involves a set of non-dominated solutions distributed along the Pareto front. Several evolutionary multi-objective optimization algorithms have been developed in which the Non-dominated Sorting Genetic Algorithm NSGA-II is recognized to be very effective to overcome a variety of problems; an optimal control problem, usually solved by several methods considering single-objective dynamic optimization, is worked out.

82. Title: Influence of deposition temperature on structural, optical and electrical properties of sputtered Al doped ZnO thin films
Author(s): Mosbah, A.; Aida, M. S.
Source: JOURNAL OF ALLOYS AND COMPOUNDS Volume: 515 Pages: 149-153 DOI: 10.1016/j.jallcom.2011.11.113 Published: FEB 25 2012
Times Cited: 2 (from All Databases)

[Hide abstract]
Al doped ZnO thin films have been deposited by DC magnetron sputtering technique from ZnO-2 wt.% Al2O3 target onto glass and oxidized silicon substrates heated at temperature ranging between 150 and 370 degrees C in Ar plasma. X-ray diffraction analysis shows that the deposits have a preferential growth along the c-axis of the hexagonal structure. The average grain size increases from 10 to 59 nm with temperatures ranging from 150 up to 330 degrees C then it decreases to 45 nm at 370 degrees C. The root main square (RMS) surface roughness decreases with substrate temperature from 20.9 to 4.1 nm. The films are transparent up to 90% in the visible wavelength range and the optical gap increases with substrate temperature from 3.41 to 3.64 eV. The resistivity measured in Van der Pauw configuration at room temperature is very sensitive to the substrate temperature. It decreases from 5 x 10(-4) to 3 x 10(-5) Omega cm when the deposition temperature increases from 150 to 370 degrees C. Both carrier mobility and carrier concentration were found to increase with substrate temperature. (C) 2011 Elsevier B. V. All rights reserved.

83. Title: Analysis of a frictionless contact problem for elastic-viscoplastic materials
Author(s): Selmani, Mohamed; Selmani, Lynda
Source: NONLINEAR ANALYSIS-MODELLING AND CONTROL Volume: 17 Issue: 1 Pages: 99-117 Published: FEB 24 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

We consider a dynamic frictionless contact problem for elastic-viscoplastic materials with damage. The contact is modelled with normal compliance condition. The adhesion of the contact surfaces is considered and is modelled with a surface variable, the bonding field whose evolution is described by a first order differential equation. We derive variational formulation for the model and prove an existence and uniqueness result of the weak solution. The proof is based on arguments of nonlinear evolution equations with monotone operators, a classical existence and uniqueness result on parabolic inequalities, differential equations and fixed-point arguments.

84. Title: Electron transfer in fast proton-helium collisions
Author(s): Kim, Hong-Keun; Schoeffler, M. S.; Houamer, S.; et al.
Source: PHYSICAL REVIEW A Volume: 85 Issue: 2 Article Number: 022707 DOI: 10.1103/PhysRevA.85.022707 Published: FEB 14 2012
Times Cited: 4 (from All Databases)

[Hide abstract]

We have measured the electron-transfer process in fast collisions (630-1200 keV/u) of protons with helium, which is dependent on the projectile scattering angle and the final electronic state. The fully differential data accompanied by theoretical second-order perturbation theory allow a detailed insight into the mechanism of electron-transfer processes.

85. Title: Effect of Azotobacter vinelandii and compatible solutes on germination wheat seeds and root concentrations of sodium and potassium under salt stress.
Author(s): Silini, A; Silini-Cherif, H; Ghoul, M
Source: Pakistan journal of biological sciences: PJBS Volume: 15 Issue: 3 Pages: 132-40 Published: 2012-Feb-1
Times Cited: 0 (from All Databases)

[Hide abstract]

The effect of plant growth-promoting Rhizobacteria (PGPR) and exogenous application of compatible solutes on seed germination and root concentrations of sodium and potassium of two wheat varieties (Triticum durum L.) were evaluated under saline stress. In this experiment, Azotobacter vinelandii strain DSM85, glycine betaine and proline were used. Inoculated seeds for each variety were placed on Whatman paper in 9 cm Petri dishes containing 15 mL of distilled water or NaCl solutions at various concentrations (control, 100, 200, 300 mM) supplemented with or without glycine betaine (GB) or proline at 5 mM. The results indicated that addition of proline (5 mM) stimulated the production of indol acetic acid and the growth of A. vinelandii at 200 and 300 mM NaCl, respectively. The germination rate index and the germination final percentage decreased significantly ($p < 0.05$) with increasing salinity level. The germination was significantly diminished at 300 mM with significant variation among varieties and Waha variety had higher germination percentage than Bousselam variety. Inoculation of seeds by A. vinelandii and exogenous application of proline had significantly positive effect on the germination at this concentration of NaCl. The rate of accumulation of Na+ in roots was important at 100 mM and increased at 200 mM. The concentration of K+ decreased when salinity increased. The effect of inoculation or inoculation with proline decreased the accumulation of Na' and reduced the loss of K+ under salt stress. From the present study we can conclude that the use of A. vinelandii strain DSM85 and external application of low concentrations of proline on seeds might be considered as a strategy for the protection of plants under saline stress.

86. Title: Structural, elastic, electronic, chemical bonding and thermodynamic properties of CaMg2N2 and SrMg2N2: First-principles calculations
Author(s): Haddadi, K.; Bouhemadou, A.; Bin-Omran, S.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 53 Issue: 1 Pages: 204-213 DOI: 10.1016/j.commatsci.2011.08.009 Published: FEB 2012

Times Cited: 0 (from All Databases)

[Hide abstract]
We report first-principles density functional theory calculations of the structural, elastic, electronic, chemical bonding and thermodynamic properties of the ternary alkaline earth metal nitrides CaMg2N2 and SrMg2N2. The calculated equilibrium structural parameters agree well with the experimental findings. Single-crystal and polycrystalline elastic constants and some related properties under pressure effect have been predicted. Both compounds exhibit a striking elastic anisotropy and a ductile behavior. Electronic properties and chemical bonding nature have been studied throughout the band structure, density of states and charge distribution analyses. It is found that these two materials have a direct band gap (Gamma-Gamma) and a transition to an indirect gap (Gamma-M) occurs at about 8.63 and 5.16 GPa in CaMg2N2 and SrMg2N2, respectively. The chemical bonding has a mixture covalent-ionic character. Thermal effects on some macroscopic properties are predicted using the quasi-harmonic Debye model. (C) 2011 Elsevier B. V. All rights reserved.

87. Title: Optimal robust adaptive fuzzy synergetic power system stabilizer design
Author(s): Bouchama, Z.; Harmas, M. N.
Source: ELECTRIC POWER SYSTEMS RESEARCH Volume: 83 Issue: 1 Pages: 170-175 DOI: 10.1016/j.epsr.2011.11.003 Published: FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A new particle swarm optimized robust indirect adaptive power system stabilizer is developed based on recently developed synergetic control methodology. Fuzzy systems are used in an adaptive scheme to approximate the system using a nonlinear model while synergetic control guarantees robustness and the use of a chatter free continuous control law which makes the controller easy to implement. In addition the controller parameters are optimized using PSO approach. Simulation of severe operating conditions of a power system is conducted to validate the effectiveness of the proposed approach while stability is guaranteed via Lyapunov synthesis. (C) 2011 Elsevier B.V. All rights reserved.

88. Title: Nucleation, growth and properties of Co nanostructures electrodeposited on n-Si(1 1 1)
Author(s): Khelladi, Mohamed Redha; Mentar, Loubna; Azizi, Amor; et al.
Source: APPLIED SURFACE SCIENCE Volume: 258 Issue: 8 Pages: 3907-3912 DOI: 10.1016/j.apsusc.2011.12.060 Published: FEB 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In the present work, cobalt thin films deposited directly on n-Si(111) surfaces by electrodeposition in Watts bath have been investigated. The electrochemical deposition and properties of deposits were studied using cyclic voltammetry (CV), chronoamperometry (CA), ex situ atomic force microscopy (AFM), X-ray diffraction (XRD) and alternating gradient field magnetometer (AGFM) techniques. The nucleation and growth kinetics at the initial stages of Co studied by current transients indicate a 3D island growth (Volmer-Weber); it is characterized by an instantaneous nucleation mechanism followed by diffusion limited growth. According to this model, the estimated nucleus density and diffusion coefficient are on the order of magnitude of 10(6) cm(-2) and 10(-5) cm(2) s(-1), respectively. AFM characterization of the deposits shows a granular structure of the electrodeposited layers. XRD measurements indicate a small grain size with the presence of a mixture of hcp and fcc Co structures. The hysteresis loops with a magnetic field in the parallel and perpendicular direction and showed that the easy magnetization axis of Co thin film is in the film plane. (C) 2011 Elsevier B.V. All rights reserved.

89. **Title: Synthesis and characterization of a PbO2-clay nanocomposite: Removal of lead from water with montmorillonite**
Author(s): Aroui, L.; Zerroual, L.; Boutahala, M.
Source: MATERIALS RESEARCH BULLETIN Volume: 47 Issue: 2 Pages: 206-211 DOI: 10.1016/j.materresbull.2011.11.043 Published: FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The aim of this paper is to present the results obtained with Pb(II) sorption on an Algerian Clay. The experiments were carried out using a batch process. Powder X-rays diffraction patterns (PXRD) prove that in the montmorillonite Pb replaces Na ions. A significant restructuring at the particle scale is observed leading to the disappearance of the d(0 0 1) reflection of the clay at high concentrations of lead. The replacement of hydrated Na with Pb ions influenced significantly the thermal behaviour of the montmorillonite samples with regard to their dehydration and dehydroxilation capacities with a lowering of the water content. A PbO2-clay composite material with good electrical conductivity is synthesized. (C) 2011 Elsevier Ltd. All rights reserved.

90. **Title: A Dynamic Frictionless Elastic-Viscoplastic Problem with Normal Damped Response and Damage**
Author(s): Selmani, Mohamed; Messaoudi, Tayeb
Source: MEDITERRANEAN JOURNAL OF MATHEMATICS Volume: 9 Issue: 1 Pages: 81-94 DOI: 10.1007/s00009-011-0117-9 Published: FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We consider a mathematical model for the process of a frictionless contact between an elastic-viscoplastic and a reactive foundation. The material is elastic-viscoplastic with internal state variable which may describe the damage of the system caused by plastic deformations. We establish a variational formulation for the model and prove the existence and uniqueness result of the weak solution. The proof is based on arguments of nonlinear equations with monotone operators, on parabolic type inequalities and fixed point.

91. **Title: Photoacoustic spectroscopy analysis of silicon crystals**
Author(s): Benamrani, H.; Satour, F. Z.; Zegadi, A.; et al.
Source: JOURNAL OF LUMINESCENCE Volume: 132 Issue: 2 Pages: 305-312 DOI: 10.1016/j.jlumin.2011.08.027 Published: FEB 2012
Times Cited: 2 (from All Databases)

[Hide abstract]
A high resolution fully automated photoacoustic spectrometer (PAS) of the gas-microphone type is used in the photon energy region 0.8-1.6 eV to analyze the optical properties of silicon single crystals at different frequencies between 25 and 312 Hz. At modulating frequencies at which the sample thickness approaches its thermal diffusion length, the results obtained of untreated specimens using different PA cells reveal the presence of several peaks in the absorption tail, some of which are independent of the photon energy. The magnitude of these peaks is seen to be stronger than that of the maximum of the fundamental edge of silicon, thus making it indistinct. At lower modulating frequencies at which the sample thickness is far less than its thermal diffusion length and using a highly reflecting backing material, multiple reflections of the light beam within the sample interfaces are seen to enhance the PA amplitude signal sensitivity response as predicted theoretically. The effect of etching silicon samples in a diluted solution of hydrofluoric acid (5%) on photoacoustic spectra has been investigated. It is observed that this process removes all spurious features in the spectra originating from the surface contaminants making the fundamental absorption edge clearly visible and leaving only one distinct peak at hv = 0.9 eV. Transmission-photoacoustic (T-PAS)

has also been used to study silicon single crystals. In the light of recent literature a comparison is carried out between the results obtained using the two techniques in determining the absorption coefficient and the gap energy. (C) 2011 Elsevier B.V. All rights reserved.

92. Title: Two-dimensional transport equation as Fredholm integral equation
Author(s): Kadem, Abdelouahab; Baleanu, Dumitru
Source: COMMUNICATIONS IN NONLINEAR SCIENCE AND NUMERICAL SIMULATION Volume: 17 Issue: 2 Pages: 530-535 DOI: 10.1016/j.cnsns.2011.01.027 Published: FEB 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
The transport equation has many applications in various fields of science and engineering. In this paper we shown that we can transform a transport equation in two-dimensional case into a Fredholm integral equation of the second kind with a compact integral operator for the angular flux by using the Sumudu transform. (C) 2011 Elsevier B.V. All rights reserved.

93. Title: Reducing transformation and global optimization
Author(s): Guettal, Djaouida; Ziadi, Abdelkader
Source: APPLIED MATHEMATICS AND COMPUTATION Volume: 218 Issue: 10 Pages: 5848-5860 DOI: 10.1016/j.amc.2011.11.053 Published: JAN 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this paper, we give new results on the Alienor method of dimension reduction. This technique is used to solve multidimensional global optimization problems of type min(x is an element of X)f(x) where f is a non convex Lipschitz function and X a compact set of R-n (n >= 2) defined by Lipschitz constraints. The idea is to construct an alpha-dense curve h in the feasible set X. The global minimum of f on X is then approximated by the global minimum of f on the curve h. That is, our problem has become a one-dimensional problem which can be solved by the Piyavskii-Shubert method. Examples of these curves and numerical implementations on several test functions are given. Crown Copyright (C) 2011 Published by Elsevier Inc. All rights reserved.

94. Title: Study of nucleation and growth process of electrochemically synthesized ZnO nanostructures
Author(s): Khelladi, M. R.; Mentar, L.; Boubatra, M.; et al.
Source: MATERIALS LETTERS Volume: 67 Issue: 1 Pages: 331-333 DOI: 10.1016/j.matlet.2011.09.098 Published: JAN 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The electrodeposition of ZnO nanostructures on ITO substrates was investigated by cyclic voltammetry, chronoamperometry and X-ray diffraction techniques. The potential deposition-dependent nucleation and growth mechanism of electrodeposited ZnO were studied by using the Scharifker-Hills nucleation model. From the analysis of the experimental current transients, the nucleation is in a good agreement with the instantaneous nucleation and three-dimensional (3D) diffusion-limited growth. X-ray diffraction measurements indicated that the as-grown films were of hexagonal wurtzite phase with a high crystalline quality. (C) 2011 Elsevier B.V. All rights reserved.

95. Title: REAL INTERPOLATION SPACES BETWEEN THE DOMAIN OF THE LAPLACE OPERATOR WITH TRANSMISSION CONDITIONS AND L-p ON A POLYGONAL DOMAIN
Author(s): Aibeche, Aissa; Chikouche, Wided; Daikh, Yasmina

Source: ELECTRONIC JOURNAL OF DIFFERENTIAL EQUATIONS Article Number: 10 Published: JAN 13 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We provide a description of the real interpolation spaces between the domain of the Laplace operator (with transmission conditions in a polygonal domain Omega) and L-p(Omega) as interpolation spaces between W-2,W-p(Omega) (possibly augmented with singular solutions) and L-p(Omega). This result relies essentially on estimates on the resolvent and the reiteration theorem.

96. **Title: Elongational and Shear Flow Behavior of Calcium Carbonate Filled Low Density Polyethylene: Effect of Filler Particle Size, Content, and Surface Treatment**
Author(s): Zoukrami, Fouzia; Haddaoui, Nacerddine; Bailly, Christian; et al.
Source: JOURNAL OF APPLIED POLYMER SCIENCE Volume: 123 Issue: 1 Pages: 257-266 DOI: 10.1002/app.34466 Published: JAN 5 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this article, calcium carbonate filled low density polyethylene (LDPE) was prepared and the influence of filler content, particle size, and surface treatment with stearic acid on the strain hardening and viscoelastic properties of the composites were investigated. Both elongational and shear rheological measurements were conducted on the different formulations and completed by microscopical observations and by differential scanning thermal analysis. The obtained results indicate that the effect of filler content and particle size are negligible on strain hardening behavior. Also the filler surface treatment has a less important effect on the nonlinear elongational tests in comparison with low frequency range measurements. However in shear rheology, we noted the absence of yield stress and network structure at different filler contents, and the presence of shear thinning behavior. Scanning electron microscopy (SEM) observations showed the enhancement of dispersion for surface treated samples, while differential scanning calorimetry (DSC) experiments have shown that the content of crystallinity of LDPE matrix is slightly affected by the presence of filler. (C) 2011 Wiley Periodicals, Inc. J Appl Polym Sci 123: 257-266, 2012

97. **Title: Failure Mechanisms and Comparative Study of Ruggedness in IGBTs Devices (IR, IXYS)**
Author(s): Benbahouche, Ly; Merabet, A.; Zegadi, A.
Book Group Author(s): IEEE
Conference: 28th International Conference on Microelectronics (MIEL) Location: Nis, SERBIA Date: MAY 13-16, 2012
Sponsor(s): IEEE; IEEE Serbia & Montenegro Sect - ED/SSC Chapter; IEEE Electron Devices Soc (EDS); IEEE Solid-State Circuits Soc (SSCS)
Source: 2012 28TH INTERNATIONAL CONFERENCE ON MICROELECTRONICS (MIEL) Book Series: International Conference on Microelectronics-MIEL Pages: 111-114 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
This paper present a detailed study of performance of two the most commercially available IGBT for International Rectifier and IXYS e. g. IRGBC40 (S, F, U) and IXGH40N60A, when subjected to two such stressful conditions short circuit operation and unclamped inductive switching and it takes into account specific phenomena limiting its SOA (Safe Operation Area), avalanche, second breakdown as well as latch up. As both these tests conditions are potentially destructive, it is extremely cost efficient to model the device performance under these conditions. The need of a good physics based simulation to carry out a reliability study is pointed out in this paper. An explanation comparison of ruggedness of IRGBC40 (S, F, U) as well as of IXGH40N60A which leads to a fundamental understanding of physics of two

devices.

98. Title: Optical and Photo-Electrochemical Properties of Conducting Polymer/Inorganic Semiconductor Nanoparticle
Author(s): Habelhames, Farid; Lamiri, Leila; Wided, Zerguine; et al.
Book Editor(s): Yang, G
Conference: International Symposium on Materials Science and Engineering Technology (ISMSET 2011) Location: Dubai, U ARAB EMIRATES Date: NOV 12-13, 2011
Sponsor(s): Hong Kong Educ Technol Soc
Source: MATERIALS SCIENCE AND ENGINEERING TECHNOLOGY Book Series: Advanced Materials Research Volume: 428 Pages: 78-83 DOI: 10.4028/www.scientific.net/AMR.428.78 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Optical and photoelectrochemical properties of polybithiophene Poly(bTh) films electrochemically synthesized and modified with incorporation of silicon nanoparticles (n-Si or p-Si) dispersed in the electrolytic during polymerization were studied. The characterisation of these modified surface electrodes by Poly(bTh)+n-Si or Poly(bTh)+p-Si, was carried out by using the photocurrent measurements and UV-visible spectroscopy. Cyclic voltammetry (CV) and electrochemical impedance spectroscopy (EIS) have been used to investigate the electrochemical behaviour of the resulting materials. The results show that the photosensitive composite materials have good photoelectrochemical and optical properties, and it can be used as material for the photovoltaic cells applications.

99. Title: Multicenter Transversal Two-Phase Study to Determine a National Prevalence of Epilepsy in Algeria
Author(s): Moualek, Dalila; Pacha, Lamia Ali; Abrouk, Samira; et al.
Source: NEUROEPIDEMIOLOGY Volume: 39 Issue: 2 Pages: 131-134 DOI: 10.1159/000339637 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Background/Aims: The prevalence of epilepsy in Algeria is unknown. The aims of this multicenter transversal study were to determine the national prevalence and clinical characteristics of epilepsy in the Algerian population. Methods: This two-phase study was conducted in 5 circumscriptions and included 8,046 subjects aged over 2 months who attended the randomly selected public and private primary care clinics. In the phase 1 study, a questionnaire was submitted to the sample of patients. In the phase 2 study, all potentially epileptic people were examined by neurologists and a second questionnaire was submitted, eventually assessed by appropriate investigations. Results: Sixty-seven patients were identified as having active epilepsy, giving a crude prevalence ratio of 8.32 per 1,000(95% CI, 6.34-10.3) and an age-adjusted prevalence ratio of 8.9 per 1,000. The highest age-specific ratio was found in patients aged 10-19 years (16.92 per 1,000). Generalized seizures (68.7%) were more common than partial seizures (29.8%). Perinatal injuries were the major leading putative causes (11.9%). Conclusion: The prevalence of epilepsy of 8.32 determined in this study is relatively high. These results provide new epidemiological data and suggest that epilepsy remains an important public health issue to consider in Algeria. Copyright (C) 2012 S. Karger AG, Basel

100. Title: A modified variable time step method for solving ice melting problem
Author(s): Boureghda, Abdellatif
Source: JOURNAL OF DIFFERENCE EQUATIONS AND APPLICATIONS Volume: 18 Issue: 9 Pages: 1443-1455 DOI: 10.1080/10236198.2011.561797 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A modified numerical method was used by authors for solving 1D Stefan problem. In this

paper a modified method is proposed with difference formulae and different methods of calculating the variable time step, which are deduced from Taylor series expansions of different conditions at the boundary. Also an extrapolation formula for the solution at the first point at the right of the computational domain is proposed. The numerical results are compared with those obtained from other methods.

101.
Title: EFFICIENCY OF POLYURETHANE POLISHERS DURING THE OPTICAL GLASS POLISHING
Author(s): Belkhir, Nabil; Bouzid, Djamel; Herold, Volker
Source: ANNALES DE CHIMIE-SCIENCE DES MATERIAUX Volume: 37 Issue: 1 Pages: 31-48 DOI: 10.3166/acsm.37.31-48 Published: JAN-FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The subject of this work is to study the efficiency of the polyurethane polishing pad relatively to its quality during the free abrasive polishing process of the optical glass.
In this work, samples of BK7 optical glass were polished. Three kinds of polyurethane polishers were used. The glass surface and the polishers were characterized using several characterization techniques. The obtained results show that the polishing pad quality influences the polishing efficiency and the glass surface quality. The polyurethane polishers undergo wear during their use more than one hour in the glass polishing process, where some changes of the polisher characteristics were observed.

102.
Title: Mechanical Properties of Biodegradable Composites Reinforced with Short Spartium Junceum Fibers before and after Treatments
Author(s): Nekkaa, S.; Guessoum, M.; Grillet, A. C.; et al.
Source: INTERNATIONAL JOURNAL OF POLYMERIC MATERIALS Volume: 61 Issue: 13 Pages: 1021-1034 DOI: 10.1080/00914037.2011.617332 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In the present study, Spartium junceum (SJ) fibers were chemically treated with different concentrations of two coupling agents, silane N [-3 Trimethoxysilyl propyl] ethylene diamine (Z-6020) and stearic acid, in order to improve the mechanical properties of polypropylene/Spartium junceum fibers (PP/SJ) composites. The chemical modification efficiency was verified by FTIR analysis, which showed the appearance of bands around 1260 and 1100 cm(-1) attributed to asymmetric stretching of Si-O-Si linkage and Si-O-Cellulose for (Z-6020) modified SJ fibers. The mechanical properties of the composites prepared from chemically treated Spartium junceum fibers are found to increase substantially compared to those with untreated fibers.

103.
Title: Shell Model Calculation for Te and Sn Isotopes in the Vicinity of Sn-100
Author(s): Yakhelef, A.; Bouldjedri, A.
Book Editor(s): Mebarki, N; Mimouni, J; Belaloui, N; et al.
Conference: 8th International Conference on Progress in Theoretical Physics (ICPTP) Location: Campus Mentouri Univ, Constantine, ALGERIA Date: OCT 23-25, 2011
Sponsor(s): Algerian Minist Higher Educ & Sci Res; Directorate Gen Sci Res & Technol Dev (DGRSDT); Rectorate Mentouri Univ; Fac Sci Mentouri Univ
Source: 8TH INTERNATIONAL CONFERENCE ON PROGRESS IN THEORETICAL PHYSICS (ICPTP 2011) Book Series: AIP Conference Proceedings Volume: 1444 Pages: 197-201 DOI: 10.1063/1.4715420 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
New Shell Model calculations for even-even isotopes Sn104-108 and Te-106,Te-108, in the vicinity of

Sn-100 have been performed. The calculations have been carried out using the windows version of NuShell@MSU. The two matrix elements TBMEs of the effective interaction between valence nucleons are obtained from the renormalized two effective interaction based on G-matrix derived from the CD-bonn nucleon-nucleon potential. The single particle energies of the proton and neutron valence spaces orbitals are defined from the available spectra of lightest odd isotopes of Sb and Sn respectively.

104.
Title: Time Dependent Systems with Continuous Spectra: Some Applications
Author(s): Saadi, Y.; Maamache, M.
Book Editor(s): Mebarki, N; Mimouni, J; Belaloui, N; et al.
Conference: 8th International Conference on Progress in Theoretical Physics (ICPTP) Location: Campus Mentouri Univ, Constantine, ALGERIA Date: OCT 23-25, 2011
Sponsor(s): Algerian Minist Higher Educ & Sci Res; Directorate Gen Sci Res & Technol Dev (DGRSDT); Rectorate Mentouri Univ; Fac Sci Mentouri Univ
Source: 8TH INTERNATIONAL CONFERENCE ON PROGRESS IN THEORETICAL PHYSICS (ICPTP 2011) Book Series: AIP Conference Proceedings Volume: 1444 Pages: 443-447 DOI: 10.1063/1.4715473 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We present some concrete applications to the recent results obtained for the study of time dependent systems involving continuous spectra. Before doing, a brief recall of these results is provided.

105.
Title: Time Dependent Systems with Continuous Spectra: Some Applications
Author(s): Saadi, Y.; Maamache, M.
Book Editor(s): Mebarki, N; Mimouni, J; Belaloui, N; et al.
Conference: 8th International Conference on Progress in Theoretical Physics (ICPTP) Location: Campus Mentouri Univ, Constantine, ALGERIA Date: OCT 23-25, 2011
Sponsor(s): Algerian Minist Higher Educ & Sci Res; Directorate Gen Sci Res & Technol Dev (DGRSDT); Rectorate Mentouri Univ; Fac Sci Mentouri Univ
Source: 8TH INTERNATIONAL CONFERENCE ON PROGRESS IN THEORETICAL PHYSICS (ICPTP 2011) Book Series: AIP Conference Proceedings Volume: 1444 Pages: 448-452 DOI: 10.1063/1.4715474 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We present some concrete applications to the recent results obtained for the study of time dependent systems involving continuous spectra. Before doing, a brief recall of these results is provided.

106.
Title: Acousto-optic Method Used to Control Water Pollution by Miscible Liquids
Author(s): Ferria, Kouider; Griani, Lazhar; Laouar, Naamane
Book Editor(s): Linde, BBJ; Paczkowski, J; Ponikwicki, N
Conference: International Congress on Ultrasonics (ICU) Location: Univ Gdansk, Inst Expt Phys, Gdansk-Oliwa Campus, Gdansk, POLAND Date: SEP 05-08, 2011
Sponsor(s): Univ Gdansk; Polish Acoust Soc; Polish Acad Sci, Comm Acoust; Int Commiss Acoust (ICA)
Source: INTERNATIONAL CONGRESS ON ULTRASONICS (GDANSK 2011) Book Series: AIP Conference Proceedings Volume: 1433 Pages: 76-83 DOI: 10.1063/1.3703143 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
An acousto-optic (A.O.) method has been developed for controlling the quality of water mixed by miscible liquids like acetone or ethanol. The liquid mixture is filled in a rectangular glass cell, which is placed orthogonally to the incident collimated beam of light. This cell consists of a piezoelectric transducer for generating ultrasonic waves. The collimated light while passing through this cell undergoes a diffraction phenomenon. The diffracted dots are collected by a converging

photographic objective and displayed in its back focal plane. The location of the diffracted dots and their intensity are sensitive to any variation of the interaction medium. This result leads to decide about the quality of the water.

107.

Title: Anthropometry of Algerian elderly

Author(s): Bouabdallah, L.

Source: WORK-A JOURNAL OF PREVENTION ASSESSMENT & REHABILITATION Volume: 41 Supplement: 1 Pages: 5415-5416 DOI: 10.3233/WOR-2012-0838-5415 Published: 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

In Algeria, a lot of attention is given to the elderly by both the government and private institutions. On the government side, two ministries participate in caring for the elderly. These are the ministry of social development and the Ministry of public health. On the private side, a lot of effort is given to the elderly through many societies and centres. If the elderly is to live independently and self-efficiently, whether at home or in social care institutions, equipment, tools, environment, daily-use items, and personal-use items should be designed for them, so that their needs are entirely satisfied, and abilities and limitations are carefully considered. Therefore, this study was carried out to provide anthropometric data of the elderly in Algeria, so that it may be used either to design equipment for them or to evaluate it in order that its use is efficient, and safe. Therefore, An anthropometric study of Algerian elderly was carried out. 29 dimensions were measured. Mean, variation measures, and percentiles, were calculated. dimensions results were presented in one table so that they can easily be used by designers.

108.

Title: Effects of Kaolin Surface Treatments on the Thermomechanical Properties and on the Degradation of Polypropylene

Author(s): Guessoum, Melia; Nekkaa, Sorya; Fenouillot-Rimlinger, Francoise; et al.

Source: INTERNATIONAL JOURNAL OF POLYMER SCIENCE Article Number: 549154 DOI: 10.1155/2012/549154 Published: 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

The effects of kaolin content and treatments on the thermal and mechanical properties and on the degradation of polypropylene were examined using mechanical tests, differential scanning calorimetry (DSC), and thermogravimetry (TGA). The weak interactions filler/matrix have been reinforced using a modification with urea then with an ammonium salt and a surface treatment with a silane coupling agent. The XRD results showed that the peak at the d-value of 10.7 angstrom increases in urea/kaolin complex, but the treatment with the ammonium salt caused the return to the initial state of the clay. FTIR results showed the appearance of new bands characteristic of the interactions between urea and kaolinite and the alkylammonium and kaolinite. The mechanical properties of the composites exhibited important variations while the DSC results showed the decrease of the crystallization temperature as a function of kaolin content. TGA thermograms pointed out the improvement of the composites' thermal stability.

109.

Title: Optimal Control Problem Governed by an Infinite Dimensional One-Nilpotent Bilinear Systems

Author(s): Aib, Aziza; Bensalem, Naceurdine

Source: BULLETIN MATHEMATIQUE DE LA SOCIETE DES SCIENCES MATHEMATIQUES DE ROUMANIE Volume: 55 Issue: 2 Pages: 107-128 Published: 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

The object of this work is to construct an explicit linear operators B which commute with a given linear operator A in infinite dimensional spaces. This construction can be applied to give exact optimal solution for a class of infinite dimensional bilinear systems.

110.
Title: Dynamic modelling of the secondary settler of a wastewater treatment via activated sludge to low-load
Author(s): Bakiri, Zahir; Chebli, Derradji; Nacef, Saci
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 1-9 DOI: 10.1016/j.egypro.2012.05.012 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The aim of this study is to apply a mathematical treatment to a case study that concerns the biological wastewater treatment. Its objective was to develop a model that aims at predicting the conditions that would lead to an outlet clear water out from a secondary settler. It deals with a wastewater treatment process which consists of the separation by decantation of an activated sludge coming out of an aerobic low-load reactor.
First, it was necessary to estimate the pollution parameters namely: the total suspended solid (TSS), the chemical oxygen demand (COD), the biological oxygen demand (BOD5) and ammonia content (NH3-N).
Secondly a mathematical model for the secondary settler was developed. The monitoring of the wastewater treatment plant as well as the knowledge of the experimental parameters such as the sludge blanket height, the TSS, and decantation time enabled us to develop the mathematical model. The advantage of this model is that it would allow a better process control. (C) 2012 Published by Elsevier Ltd. Selection and/or peer-review under responsibility of The TerraGreen Society.

111. **Title: The performances of Durum Wheat Yield (Triticum durum Desf.) under Tillage Effect in Semi-Arid Environment**
Author(s): Houria, Chennafi; Saci, A.
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 879-887 DOI: 10.1016/j.egypro.2012.05.102 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Yield performances of durum wheat (Triticum durum Desf.) variety Waha were evaluated under effects of crop precedent: fallow and wheat, and tool nature of soil preparation: scarifier, moldboards plow or disks plow, during 2006/2007 growth season. The results showed the advantage, in grain yield, of wheat that crop precedent is fallow relatively to wheat following wheat. Tool effect of tillage soil is related to crop precedent. Indeed, Waha cultivated under fallow tilled with scarifier produced more grain than after wheat. However, proper management of production system improved productivity efficiency in rainfed agriculture. It is focused on soil and water resources conservation. (C) 2012 Published by Elsevier Ltd. Selection and/or peer-review review under responsibility of The TerraGreen Society.

112. **Title: Decadal Evaluation of Durum Wheat Water Requirements to Improve Rainfed Agriculture under Semi-Arid conditions**
Author(s): Houria, Chennafi
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable

Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 896-904
DOI: 10.1016/j.egypro.2012.05.104 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The estimating water requirement of durum wheat is a technical tool which seats a practical water management. The water needs of durum wheat grown on the High Plains of Setif raised sharply by the first decade of march. In fact, it reached 46 mm from the mid of the tillering to the mid of jointing (march - april) and raised to 103 mm during the booting - heading growth phase. For a crop cycle lasting from the mid-november to the third decade of may, the crop water requirements were estimated to 672 mm. The periods with the high water demand coincide with limited offer. These results suggested applying limited water quantities to reduce water deficit effect on the crop. This contributes to stabilize wheat production through soil conservation and durable management of the scarce water resources in semi-arid area. (C) 2012 Published by Elsevier Ltd. Selection and/or peer-review review under responsibility of The TerraGreen Society.

113. **Title: Solar cells parameters evaluation from dark I-V characteristics**
Author(s): Bouzidi, K.; Chegaar, M.; Aillerie, M.
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 1601-1610
DOI: 10.1016/j.egypro.2012.06.001 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this paper, a comparative analysis of three methods to determine the four solar cells parameters (the saturation current (Is), the series resistance (Rs), the ideality factor (n), and the shunt conductance (Gsh)) of the single diode lumped model from its dark curve is presented. These methods are based on Gromov, Werner, and Mikhelashviliet al. methods that were used to extract the Schottky diode parameters. These techniques have been adequately modi ed, extended to cover the case of solar cells and used to extract the parameters of interest from experimental I-V characteristic of a Poly-Si solar cell under dark condition. (C) 2010 Published by Elsevier Ltd. Selection and/or peer-review under responsibility of The TerraGreen Society.

114. **Title: Environmental effects on the performance of nanocrystalline silicon solar cells**
Author(s): Guechi, A.; Chegaar, M.; Aillerie, M.
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 1611-1623
DOI: 10.1016/j.egypro.2012.06.002 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this paper the global, direct and diffuse solar radiation incident on solar cells is simulated using the spectral model SMARTS2, for varying environmental conditions on the site of Setif. The effect of changes in total intensity and spectral distribution on the short circuit current and efficiency of nanocrystalline silicon (nc-Si: H) is examined. The results show a reduction in the short circuit current due to increasing turbidity. It is 27.06% and 67.97% under global and direct radiation respectively. However it increases under diffuse radiation. This increase

is about 53.97%. Increasing albedo leads to an increase in the short circuit current of 5.70% and 27.05% for global and diffuse solar radiation, respectively and it is not influenced under direct solar radiation. The performance of the cells is notably reduced, both in terms of efficiency and open circuit voltage, with increasing air mass. It is about 81.86%, 37.47% and 94.18% for global, diffuse and direct solar radiation respectively. (C) 2012 Published by Elsevier Ltd. Selection and/or peer-review under responsibility of The TerraGreen Society.

115. **Title: Decadal Evaluation of Durum Wheat Water Requirements to Improve Rainfed Agriculture under Semi-Arid conditions**
Author(s): Houria, Chennafi
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 896-904 DOI: 10.1016/j.egypro.2012.05.104 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The estimating water requirement of durum wheat is a technical tool which seats a practical water management. The water needs of durum wheat grown on the High Plains of Setif raised sharply by the first decade of march. In fact, it reached 46 mm from the mid of the tillering to the mid of jointing (march - april) and raised to 103 mm during the booting - heading growth phase. For a crop cycle lasting from the mid-november to the third decade of may, the crop water requirements were estimated to 672 mm. The periods with the high water demand coincide with limited offer. These results suggested applying limited water quantities to reduce water deficit effect on the crop. This contributes to stabilize wheat production through soil conservation and durable management of the scarce water resources in semi-arid area. (C) 2012 Published by Elsevier Ltd. Selection and/or peer-review review under responsibility of The TerraGreen Society.

116. **Title: SILVER DIFFUSION AND COLORATION OF SODA LIME AND BOROSILICATE GLASSES PART 1: EFFECT ON THE TRANSMISSION AND COLORATION OF STAINED GLASSES**
Author(s): Chorfa, Abdellah; Belkhir, Nabil; Rubio, Fausto; et al.
Source: CERAMICS-SILIKATY Volume: 56 Issue: 1 Pages: 69-75 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Using the conventional method of coloration, soda lime and borosilicate glasses have been painted. Once stained, these glasses were heat treated at temperatures close to their transition temperatures (T). A parametric study was carried out in order to determine at first the effect of the silver concentration in the stain spread on glass. In addition, it was studied the effect of the heat treatment duration and the chemical composition of the painted glasses on the formation and size of the silver nanoparticles, the silver diffusion depth and also the glasses coloration. The characterization was made using UV-Vis spectroscopy, Raman confocal spectroscopy, SEM, EDX Technique and Abbe Refractometer The obtained results shows that the coloration intensity of both glass types painted by the conventional method differs and depends essentially on the proportion of alkali ions in the glass. Moreover it was found that the effect of the silver concentration in the stain is primordial and the heat treatment duration has a limited effect.

117. **Title: Direct adaptive fuzzy control of a class of MIMO non-affine nonlinear systems**
Author(s): Doudou, Sofiane; Khaber, Farid
Source: INTERNATIONAL JOURNAL OF SYSTEMS SCIENCE Volume: 43 Issue: 6 Pages: 1029-1038 DOI: 10.1080/00207721.2010.547631 Published: 2012
Times Cited: 1 (from All Databases)

[Hide abstract]

An adaptive fuzzy control approach is proposed for a class of multiple-input-multiple-output (MIMO) nonlinear systems with completely unknown non-affine functions. The global implicit function theorem is first used to prove the existence of an unknown ideal implicit controller that can achieve the control objectives. Within this scheme, fuzzy systems are employed the approximate the unknown ideal implicit controller, and robustifying control terms are used to compensate the approximation errors and external disturbances. The adjustable parameters of the used fuzzy systems are deduced from the stability analysis of the closed-loop system in the sense of Lyapunov. To show the efficiency of the proposed controllers, two simulation examples are presented.

118. **Title:** Study of the behaviour of electrostrictive polymers for energy harvesting with FFT analysis
Author(s): Meddad, M.; Eddialal, A.; Guyomar, D.; et al.
Source: JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS Volume: 14 Issue: 1-2 Pages: 55-60 Published: JAN-FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

Electrostrictive polymers energy harvesters are an emerging technology that promises high power density, low cost and scalability. Power can be produced simply by stretching and contracting a polymer film. At present, the investigation of using electrostrictive polymers for energy harvesting (a conversion of mechanical to electrical energy) is beginning to show potential for this application. The relative energy gain basically depends in the current induced by the mechanical strain and frequency. Previous work of some of the co-authors, has indicated that one can measure the dielectric constant, the Young modulus and the electrostrictive coefficient of a polymer film by the determination of the current flowing through the sample when simultaneously driven by electrical field and mechanical excitation. This paper investigates the effects of this method for different frequencies for both electrical field E and strain in order to develop a more in-depth understanding of the changes in system response for increased current and energy harvesting. Results relating amplitude strain and the frequency for electrical field provide a framework for developing energy harvesting techniques which improve the overall performance of the system. Experimental data indicate that the current induced with polymer is proportional with the change in frequency of the deformation. In the present paper the theory is detailed and the simulation results are compared with experimental ones. Good agreements are found between both approaches.

119. **Title:** PREPARATION OF A NEW POLYSTYRENE SUPPORTED-ETHYLENEDIAMINEDIACETIC ACID RESIN AND ITS SORPTION BEHAVIOR TOWARD DIVALENT METAL IONS
Author(s): Charef, Noureddine; Benmaamar, Zina; Arrar, Lekhmici; et al.
Source: SOLVENT EXTRACTION AND ION EXCHANGE Volume: 30 Issue: 1 Pages: 101-112 DOI: 10.1080/07366299.2011.581070 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

A new polystyrene-supported ethylenediaminediacetic acid resin has been synthesized through a reaction between the amination of the commercially available 4-chloromethyl polystyrene polymer with ethylenediamine and the subsequent carboxymethylation with monobromoacetic acid, using ethylenediamine as spacer. The chelation behavior of this resin toward the divalent metal ions Cu2+, Ni2+, Zn2+, and Pb2+ in aqueous solutions was investigated. Batch equilibration experiments were carried out as a function of contact time, pH, amount of metal-ion, and polymer mass. The amount of metal-ion uptake of the polymer was determined by using atomic absorption spectrometry (AAS). Results of the investigation revealed that the resin exhibited higher capacities and a more pronounced adsorption toward Cu2+ and that the metal-ion uptake follows the order: Cu2+ > Zn2+ > Ni2+ > Pb2+. The

adsorption and binding capacity of the resin toward the various metal ions investigated are discussed.

120. **Title:** Synthesis, Spectroscopic, and Electrochemical Characterization of a Schiff Base: 4,4'-bis [(4-diethylaminosalicylaldehyde)diphenyl methane]diimine and Its Complexes With Copper(II), Cobalt(II), and Cadmium(II)
Author(s): Benabid, Sonia; Douadi, Tahar; Debab, Houria; et al.
Source: SYNTHESIS AND REACTIVITY IN INORGANIC METAL-ORGANIC AND NANO-METAL CHEMISTRY Volume: 42 Issue: 1 Pages: 1-8 DOI: 10.1080/15533174.2011.614993 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The synthesis of a new ligand tetradentate Schiff base: 4,4'-bis[(4-diethyl aminosalicylaldehyde) diphenyl methane] diimine (H2L), obtained by condensation of 4,4'-diaminodiphenyl methane with 4-diethylaminosalicylaldehyde, and its complexes with copper(II), cobalt(II) and cadmium(II), is described. The metal complexes were characterized by elemental analysis, by UV-visible, infrared, and EPR spectroscopy, by cyclic voltammetry, and by thermal analysis (DTA-TG). The coordination of the metal ions to the ligand occurs through the N2O2 system. Thermal studies indicate that the ligand is more stable than the metal complexes (up to 310 degrees C).

121. **Title:** Study of the genetic variation of tall fescue varieties using AFLP markers
Author(s): Mefti, Mohammed; Bouzerzour, Hamena
Source: CAHIERS AGRICULTURES Volume: 21 Issue: 1 Pages: 4-10 DOI: 10.1684/agr.2012.0540 Published: JAN-FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Study of the genetic variation of tall fescue varieties using AFLP markers
Little information is available regarding genetic variation in tall fescue (Festuca arundinacea Schreb). Such information is important in constructing mapping populations and targeting germplasm collection and utilization. The objective of this study was to evaluate the genetic diversity among seven tall fescue accessions from diverse geographic origins. Tall fescue accessions were assayed by a fluorescence-labeled amplified fragment length polymorphism (AFLP) detection method using DNA samples bulked from each accession. On the basis of 105 AFLP markers from two primer combinations, the seven accessions were clustered in groups that largely supported the known origins of these plants. Fraydo and Lutine are genetically the most divergent, Tank and Sisa are genetically very similar, whereas Centurion has a very similar structure to the genotypes Flecha and endophyte-infected Flecha (E542), and a large genetic distance from Lutine although both Centurion and Lutine were bred by the same institute (Institut national de la recherche agronomique [INRA]).

122. **Title:** Power Factor Correction based on Fuzzy Logic Controller with Fixed Switching Frequency
Author(s): Kessal, A.; Rahmani, L.; Mostefai, M.; et al.
Source: ELEKTRONIKA IR ELEKTROTECHNIKA Issue: 2 Pages: 67-72 DOI: 10.5755/j01.eee.118.2.1176 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A. Kessal, L. Rahmani, M. Mostefai, J. Gaubert. Power Factor Correction based on Fuzzy Logic Controller with Fixed Switching Frequency // Electronics and Electrical Engineering. - Kaunas: Technologija, 2012. - No. 2(118). - P. 67-72.
This paper presents an application of different methods to regulate the output voltage of AC-DC converter associated with power factor corrector (PFC), a classical PI regulator was used, and another based on fuzzy logic was built, the both regulators were inserted in the voltage loop. To reduce the total harmonic distortion of the input current to give it a

sinusoidal shape, hysteresis bands control were used, the variable band hysteresis give better results compared to other bands. All these controllers have been verified via simulation in Simulink and experimental test. The fuzzy logic inference based controller can achieve better dynamic response than its PI counterpart under large load disturbance and plant uncertainties. Furthermore, the variable hysteresis band control in the current loop gives a low THD of the input current compared to classical bands control. Ill. 12, bibl. 10, tabl. 2 (in English; abstracts in English and Lithuanian).

123. Title: Optical glass surfaces polishing by cerium oxide particles
Author(s): Bouzid, D.; Belkhie, N.; Aliouane, T.
Book Group Author(s): IOP
Conference: National conference on MATERIAUX Location: Mahdia, TUNISIA Date: NOV 04-07, 2010
Sponsor(s): Tunisian Mat Res Soc-Tu-MRS
Source: MATERIAUX 2010 Book Series: IOP Conference Series-Materials Science and Engineering Volume: 28 Article Number: 012007 DOI: 10.1088/1757-899X/28/1/012007 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The use of powders in metallic oxides as means of grinding and polishing of the optical glass components have seen recently a large application in optical industry. In fact, cerium oxide abrasive is more used in the optical glass polishing. It is used as grains abrasive in suspension or fixed abrasive (pellets); these pellets are manufactured from a mixture made of cerium oxide abrasive and a organic binder.
The cerium oxide used in the experiments is made by (Logitech USA) of 99% purity, the average grain size of the particle is 300 nm, the density being 6,74 g/cm(3) and the specific surface is 3,3042 m(2)/g.
In this study, we are interested in the surfaces quality of the optical glass borosilicate crown (BK7) polished by particles in cerium oxide bounded by epoxy. The surfaces of the optical glass treated are characterized by the roughness, the flatness by using the microscope Zygo and the SEM.

124. Title: A study of the electrodeposition of Co-Cu alloys thin films on FTO substrate
Author(s): Mentar, Loubna
Source: IONICS Volume: 18 Issue: 1-2 Pages: 223-229 DOI: 10.1007/s11581-011-0602-y Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work, the early stages and the properties of the electrodeposition process of Co-Cu alloys thin films on a fluorine-doped tin oxide (FTO)-coated conducting glass substrate from a sulfate bath were investigated using conventional electrochemical techniques and X-ray diffraction technique (XRD). FTO was chosen as a foreign substrate because of its high transparence and its properties as inert material. Within the potential range analyzed, the kinetics of the Co-Cu electrodeposition corresponded to a model including instantaneous nucleation on active sites and diffusion controlled cluster growth. The number of active sites of the substrate, N-0, and the diffusion coefficient, D, were determined from the analysis of potentiostatic current transients on the basis of existing theoretical models. XRD patterns of the Co-Cu alloys thin films display fcc and hcp phase, with peaks quite close to those of the Co phase (fcc and hcp). Therefore, the variation of the composition of thin films alloy is possible depending on the deposition potential.

125. Title: First-principle calculations to investigate the elastic and thermodynamic properties of RBRh3 (R = Sc, Y and La) perovskite compounds
Author(s): Litimein, F.; Khenata, R.; Bouhemadou, A.; et al.
Source: MOLECULAR PHYSICS Volume: 110 Issue: 2 Pages: 121-128 DOI:

10.1080/00268976.2011.635607 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We have performed first-principle calculations using the full-potential linear augmented plane wave (FP-LAPW) method within density functional theory (DFT) to investigate the structural, elastic and thermodynamic properties of the cubic perovskite RBRh3 (R = Sc, Y and La) compounds. The exchange-correlation potential is treated within the generalized gradient approximation of Perdew-Burke-Ernzerhof (GGA-PBE). Single-crystal elastic constants are calculated using the total energy variation versus strain technique, then the shear modulus, Young's modulus, Poisson's ratio and anisotropic factor are derived for polycrystalline RBRh3 using the Voigt-Reuss-Hill approximations. Analysis of the calculated elastic constants C-ij and B/G ratios shows that these compounds are mechanically stable and ductile in nature. Using the quasi-harmonic Debye model, the effect of pressure P and temperature T on the lattice parameter a(0), bulk modulus B-0, thermal expansion coefficient alpha, Debye temperature theta(D) and the heat capacity C-v for these compounds are investigated for the first time. The computed structural and elastic constants are in good agreement with the available experimental and theoretical data.

126. Title: First-principles prediction of metastable niobium and tantalium nitrides M4N5 and M5N6 stoichiometry
Author(s): Chihi, T.; Fatmi, M.; Ghebouli, B.
Source: SOLID STATE SCIENCES Volume: 14 Issue: 1 Pages: 80-83 DOI: 10.1016/j.solidstatesciences.2011.10.020 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A first-principles plane-wave pseudopotential method based on the density functional theory is used to investigate the structural, elastic and electronic properties of M4N5 and M5N6 (M = a transition metal (TM) Nb, Ta). C-33 elastic constant for all compounds is found to be much larger than C-11, indicating that a-axis is more compressible than c-axis. Interestingly, we find that C-33 and C-11 are significantly larger than other elastic constants, resulting in a pronounced elastic anisotropy. (C) 2011 Elsevier Masson SAS. All rights reserved.

127. Title: Anti-inflammatory, anti-oxidant, and apoptotic activities of four plant species used in folk medicine in the Mediterranean basin
Author(s): Amira, Smain; Dade, Martin; Schinella, Guillemo; et al.
Source: PAKISTAN JOURNAL OF PHARMACEUTICAL SCIENCES Volume: 25 Issue: 1 Pages: 65-72 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The aim of this research was to study the potential anti-inflammatory activity of myrtle (Myrtus communis), sarsaparilla (Smilax aspera), Arabian or French lavender (Lavandula stoechas), and calamint (Calamintha nepeta) along with their apoptotic effects on the pro-inflammatory cells, and the correlation of these effects with the plants' potential anti-oxidant activity. Myrtle extract exhibited the highest inhibitory activity in the paw oedema induced by carrageenan (60% at 3 h), whereas calamint, lavender, and sarsaparilla produced inhibitions of 49%, 38%, and 47%, respectively. None of them had an effect on the TPA-induced ear oedema. Moreover, all the extracts except sarsaparilla showed different degrees of anti-oxidant activity. Lavender and myrtle at 200 mu g/mL decreased cell viability by 63% and 59%, respectively, after 3 h of incubation. Neutrophil elimination through apoptosis could be implicated in the resolution of acute inflammation in the case of lavender, whereas the reduction of reactive oxygen species produced by neutrophils, such as the superoxide anion and the hydroxyl radical, could be implicated in the overall reduction of inflammation. These results may support the traditional use of these plants.

128. **Title: URANIUM CONTENT AND DOSE ASSESSMENT FOR PHOSPHATE FERTILISER AND SOIL SAMPLES: COMPARISON OF URANIUM CONCENTRATION BETWEEN VIRGIN SOIL AND FERTILISED SOIL**
Author(s): Boukhenfouf, Wassila; Boucenna, Ahmed
Source: RADIATION PROTECTION DOSIMETRY Volume: 148 Issue: 2 Pages: 263-267 DOI: 10.1093/rpd/ncr025 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Specific activity of U-235 and U-238 in soil and fertiliser samples from Guellal region in Setif (Algeria) was determined by gamma-ray spectrometry. The selected phosphate fertilisers samples were collected from two types of fertilisers NPK (N, nitrogen; P, phosphorus; K, potassium) and NPKs (sulphate-based NPK). These last ones are used to fertilise the studied area as well as a radioactivity comparison between the soils before and after fertilisation. NPK and NPKs fertilisers have presented higher concentrations of the radionuclide U-238, up to 1125 and 1545 Bq kg(-1), respectively. For soils before and after fertilisation, the concentrations of U-238 were, respectively, 252.8 and 316.2 Bq kg(-1). The average value and range of measured concentration of U-235 for soils before fertilisation was 12.16 +/- 1.4 Bq kg(-1) and for the fertilised soils was 15.16 +/- 1.8 Bq kg(-1), whereas the corresponding values for NPK and NPKs fertilisers were, respectively, 49.38 +/- 5.7 and 50.61 +/- 5.2 Bq kg(-1).

129. **Title: Geochemical characterization of groundwater from shallow aquifer surrounding Fetzara Lake N. E. Algeria**
Author(s): Abdelkader, Rouabhia; Larbi, Djabri; Rihab, Hadji; et al.
Source: ARABIAN JOURNAL OF GEOSCIENCES Volume: 5 Issue: 1 Pages: 1-13 DOI: 10.1007/s12517-010-0202-6 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Hydrogeochemical investigations were carried out around Fetzara Lake, Northeast Algeria, to assess the quality of groundwater for its suitability for drinking and irrigation purposes. The groundwater chemistry is mainly controlled by the water-rock interactions, but also influenced by other processes such as evapotranspiration and ion exchange. Groundwater samples collected, during two periods (1993 and 2007) from wells in the area were analyzed for pH, EC, TDS, Ca(2+), Mg(2+), Na(+), K(+), CO (3) (2-) , HCO (3) (-) , Cl(-), SO (4) (2-) , and NO (3) (-) . The chemical relationships in Piper's diagram and Gibbs's diagram suggest that groundwaters mainly belong to noncarbonate alkali type and Cl(-) group and are controlled by evaporation dominance, respectively, due to the sluggish drainage conditions, greater water-rock interaction, and anthropogenic activities. A comparison of the groundwater quality in relation to drinking water quality standards proves that most of the water samples are not suitable for drinking. US Salinity Laboratory's and Wilcox's diagrams and %Na(+) used for evaluating the water quality for irrigation suggest that the majority of the groundwater samples are not good for irrigation.

130. **Title: A generalized CAD model for the full-wave modeling of Coplanar striplines discontinuities**
Author(s): Laib, S.; Djahli, F.; Mayouf, A.; et al.
Source: INTERNATIONAL JOURNAL OF NUMERICAL MODELLING-ELECTRONIC NETWORKS DEVICES AND FIELDS Volume: 25 Issue: 1 Pages: 82-95 DOI: 10.1002/jnm.816 Published: JAN-FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work, the coplanar stripline (CPS) and its discontinuities: open-end, short-end, gaps and resonator have been modeled. New integral equations for the electrical field components are formulated, in the spectral domain, using an exact dyadic Green's function, applied to the

CPS structure. The use of this form of Green's function allows the consideration of the effects of the dielectric losses, the surface wave excitation and the space wave radiation on the propagation characteristics of the CPS and its discontinuities. The resulting integral equation has been solved using the two-dimensional Galerkin's technique. The resolution of the resulting matrix equation gives the scattering parameters of the studied structures. The obtained results are commented and compared with those of other approaches and measurements. Copyright (C) 2011 John Wiley & Sons, Ltd.

131. Title: Double perovskite oxides Sr2MMoO6 (M = Fe and Co) as cathode materials for oxygen reduction in alkaline medium
Author(s): Cheriti, Mabrouk; Kahoul, Abdelkrim
Source: MATERIALS RESEARCH BULLETIN Volume: 47 Issue: 1 Pages: 135-141 DOI: 10.1016/j.materresbull.2011.09.016 Published: JAN 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
The oxygen reduction reaction (ORR) was studied on Sr2MMoO6 (M = Fe and Co) double perovskites, prepared by a solid-state reaction, in 0.5 M NaOH at 25 degrees C with a rotating disk electrode (RDE). The two oxide powders were characterized by X-ray diffraction, scanning electron microscopy and BET analysis. The electrochemical techniques considered are linear voltammetry, steady state polarization and ac impedance spectroscopy. The electrocatalysts (SFMO/C, SCMO/C) consisting of the double perovskite oxides and carbon (Vulcan XC-72) were mixed and spread out into a thin layer on a glassy carbon substrate. At room temperature, a significantly electrocatalytic activity is observed for both electrocatalysts. Compared to SFMO/C, the SCMO/C electrocatalyst was found to show a relatively high electrocatalytic activity for O-2 reduction, which agrees well with the results obtained using the ac impedance spectroscopy. (C) 2011 Elsevier Ltd. All rights reserved.

132. Title: Modeling and simulation of a grid connected PV system based on the evaluation of main PV module parameters
Author(s): Chouder, Aissa; Silvestre, Santiago; Sadaoui, Nawel; et al.
Source: SIMULATION MODELLING PRACTICE AND THEORY Volume: 20 Issue: 1 Pages: 46-58 DOI: 10.1016/j.simpat.2011.08.011 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work we present a new method for the modeling and simulation study of a photovoltaic grid connected system and its experimental validation. This method has been applied in the simulation of a grid connected PV system with a rated power of 3.2 Kw(p), composed by a photovoltaic generator and a single phase grid connected inverter. First, a PV module, forming part of the whole PV array is modeled by a single diode lumped circuit and main parameters of the PV module are evaluated. Results obtained for the PV module characteristics have been validated experimentally by carrying out outdoor I-V characteristic measurements. To take into account the power conversion efficiency, the measured AC output power against DC input power is fitted to a second order efficiency model to derive its specific parameters.
The simulation results have been performed through Matlab/Simulink environment. Results has shown good agreement with experimental data, whether for the I-V characteristics or for the whole operating system. The significant error indicators are reported in order to show the effectiveness of the simulation model to predict energy generation for such PV system. (C) 2011 Elsevier B.V. All rights reserved.

133. Title: Spatial resolution limit study of a CCD camera and scintillator based neutron imaging system according to MTF determination and analysis
Author(s): Kharfi, F.; Denden, O.; Bourenane, A.; et al.
Source: APPLIED RADIATION AND ISOTOPES Volume: 70 Issue: 1 Pages: 162-166

DOI: 10.1016/j.apradiso.2011.09.020 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Spatial resolution limit is a very important parameter of an imaging system that should be taken into consideration before examination of any object. The objectives of this work are the determination of a neutron imaging system's response in terms of spatial resolution. The proposed procedure is based on establishment of the Modulation Transfer Function (MTF). The imaging system being studied is based on a high sensitivity CCD neutron camera (2 x 10(-5) lx at f1.4). The neutron beam used is from the horizontal beam port (H.6) of the Algerian Es-Salam research reactor. Our contribution is on the MTF determination by proposing an accurate edge identification method and a line spread function undersampling problem-resolving procedure. These methods and procedure are integrated into a MatLab code. The methods, procedures and approaches proposed in this work are available for any other neutron imaging system and allow for judging the ability of a neutron imaging system to produce spatial (internal details) properties of any object under examination. (C) 2011 Elsevier Ltd. All rights reserved.

134. Title: Structural, electronic, optical and thermodynamic properties of NaxRb1-xH and NaxK1-xH alloys
Author(s): Fatmi, Messaoud; Ghebouli, Brahim; Ghebouli, Mohamed Amine; et al.
Source: JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS Volume: 73 Issue: 1 Pages: 1-7 DOI: 10.1016/j.jpcs.2011.08.015 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A theoretical study of the structural, electronic, optical and thermodynamic properties of NaxRb1-xH and NaxK1-xH ternary alloys in NaCl phase has been carried out using the first-principles method. We modeled the alloys at some selected compositions with ordered structures described in terms of periodically repeated supercells. The dependences on the composition of the lattice constant, band gap, dielectric constant, refractive index, Debye temperature, mixing entropy and heat capacities were analyzed for x=0, 0.25, 0.50, 0.75 and 1. The lattice constants of NaxRb1-xH and NaxK1-xH exhibit a marginal deviation from Vegard's law. A strong deviation of the bulk modulus from linear concentration dependence was observed for both alloys. We found that the composition dependence of the energy band gap is highly non linear and the large bowing coefficient for NaxRb1-xH is sensitive to the composition. Using the approach of Zunger and co-workers, the microscopic origins of the gap bowing were detailed and explained. The thermodynamic stability of these alloys was investigated by calculating the phase diagram. The thermal effect on some macroscopic properties was investigated using the quasi-harmonic Debye model. There is a good agreement between our results and the available experimental data for the binary compounds, which is a support for those of the ternary alloys that we report for the first time. (C) 2011 Published by Elsevier Ltd.

135. Title: Theoretical prediction of the structural, electronic and optical properties of SnB2O4 (B = Mg, Zn, Cd)
Author(s): Allali, D.; Bouhemadou, A.; Bin-Omran, S.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 51 Issue: 1 Pages: 194-205 DOI: 10.1016/j.commatsci.2011.07.046 Published: JAN 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
The structural, electronic and optical properties of the cubic spinels SnB2O4, with B = Mg, Zn and Cd, were studied by means of the full-potential (linear) augmented plane wave plus

local orbitals method within the local density and generalized gradient approximations for the exchange-correlation potential. The Engel-Vosko form of the generalized gradient approximation (EV-GGA), which better optimizes the potential for the band structures, was also used. The results of bulk properties, including lattice constants, internal parameters, bulk moduli and their pressure derivatives are in good agreement with the literature data. The band structures show a direct band gap (Gamma-Gamma) for the three compounds. The computed band gaps using the EV-GGA show a significant improvement over the more common GGA. All the calculated band gaps increase with increasing pressure and fit well to a quadratic function. Analysis of the density of states revealed that the lowering of the direct gap (Gamma-Gamma) from SnMg2O4 to SnZn2O4 to SnCd2O4 can be attributed to the p-d mixing in the upper valence band of SnZn2O4 and SnCd2O4. We present calculations of the frequency-dependent complex dielectric function epsilon(omega). We find that the values of zero-frequency limit epsilon(1)(0) increase with decreasing the energy band gap. The origin of the peaks and structures in the optical spectra is determined in terms of the calculated energy band structures. (C) 2011 Elsevier B.V. All rights reserved.

136. Title: A new criterion of optimization of the simple multipole coefficients in a modified Green's function for the elastic two-dimensional case
Author(s): Sahli, Belkacem
Source: APPLIED MATHEMATICS LETTERS Volume: 25 Issue: 1 Pages: 77-80 DOI: 10.1016/j.aml.2011.07.014 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The question of non-uniqueness in the integral formulation of an exterior boundary value problem in the elastic two-dimensional case has been resolved using the modified Green's function technique. In this work, a new criterion of optimality based on the minimization of the norm of the kernel of the modified integral operator is established. (C) 2011 Elsevier Ltd. All rights reserved.

1.
Title: Ab initio investigations of structural, elastic and electronic properties of ZnSiP2: Pressure effect
Author(s): Arab, F.; Sahraoui, F. Ali; Haddadi, K.; et al.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 65 Pages: 520-527 DOI: 10.1016/j.commatsci.2012.08.012 Published: DEC 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work, we present ab initio investigations of the pressure effect on the structural, elastic and electronic properties of ZnSiP2 by employing the plane wave pseudo-potential method (PP-PW) within the generalized gradient approximation (GGA-PW91). The calculated equilibrium structural parameters are in excellent agreement with available experimental and theoretical results. We have found that ZnSiP2 undergoes a structural phase transition under pressure from chalcopyrite to rocksalt type structure at 35 GPa. Single-crystal and polycrystalline elastic constants and some related properties under pressure effect in both chalcopyrite and rocksalt phases have been predicted. The analysis of the bulk modulus to shear modulus (B/G) ratio shows that ZnSiP2 must be classified as brittle material. Electronic properties and chemical bonding nature have been studied throughout the band structure, density of states and charge distribution analyses. It is found that the studied compound is a direct band gap (Gamma - Gamma) semiconductor (E-g = 1.34 eV) in chalcopyrite structure, and is a conductor in the rock-salt structure. The chemical bonding of ZnSiP2 has a mixture of ionic-covalent and ionic-covalent-metallic character, respectively in chalcopyrite and rocksalt type structure. (c) 2012 Elsevier B.V. All rights reserved.

2.
Title: Theoretical prediction of the fundamental properties for the ternary Li2PtH6 and Na2PtH6

Author(s): Ghebouli, M. A.; Choutri, H.; Bouarissa, N.; et al.
Source: JOURNAL OF SOLID STATE CHEMISTRY Volume: 196 Pages: 498-503 DOI: 10.1016/j.jssc.2012.06.044 Published: DEC 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Li2PtH6 and Na2PtH6 are good candidate for hydrogen storage. The structural, elastic, electronic and optical properties of Li2PtH6 and Na2PtH6 compounds have been investigated using pseudo-potential plane-wave method based on the density functional theory. Computed lattice constant and H atom positional parameter at equilibrium agree well with the available experimental data. A quadratic pressure dependence of the elastic stiffness is found. A set of isotropic elastic parameters and related properties, namely bulk and shear moduli, Young's modulus, Poisson's ratio, average sound velocity and Debye temperature are numerically estimated in the framework of the Voigt-Reuss-Hill approximation for Li2PtH6 and Na2PtH6 polycrystalline aggregate. The analyses of the band structure indicates that Li2PtH6 and Na2PtH6 are indirect gap semiconductors. The static dielectric constant and static refractive index are inversely proportional to the fundamental gap. (C) 2012 Elsevier Inc. All rights reserved.

3.
Title: A stable adaptive force/position controller for a C5 parallel robot: a neural network approach
Author(s): Achili, B.; Daachi, B.; Amirat, Y.; et al.
Source: ROBOTICA Volume: 30 Pages: 1177-1187 DOI: 10.1017/S0263574711001354 Part: Part 7 Published: DEC 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
This paper presents an adaptive force/position controller for a parallel robot executing constrained motions. This controller, based on an MLPNN (or Multi-Layer Perceptron Neural Network), does not require the inverse dynamic model of the robot to derive the control law. A neural identification of the dynamic model of the robot is proposed to determine the principal components of the MLPNN input vector. The latter is used to compensate the dynamic effects arising from the robot-environment interaction and its parameters are adjusted according to an adaptation law based on the Lyapunov-analysis methodology. The proposed controller is evaluated experimentally on the C5 parallel robot. This method is capable of tracking accurately the force/position trajectories and its stability robustness is proved.

4.
Title: Prostaglandin E(2) receptor subtypes in human blood and vascular cells.
Author(s): Foudi, Nabil; Gomez, Ingrid; Benyahia, Chabha; et al.
Source: European journal of pharmacology Volume: 695 Issue: 1-3 Pages: 1-6 DOI: 10.1016/j.ejphar.2012.08.009 Published: 2012-Nov-15 (Epub 2012 Sep 03)
Times Cited: 0 (from All Databases)

[Hide abstract]
Prostaglandin E(2) is produced in inflammatory responses via the cyclooxygenase pathway and regulates a variety of physiological and pathological reactions through four different receptor subtypes; EP(1), EP(2), EP(3) and EP(4). The role of the classical prostanoid receptors stimulated by prostaglandin I(2) and thromboxane A(2) in the blood circulation has been largely studied, whereas the other receptors such as EP activated by prostaglandin E(2), have been recently shown to be also implicated. There is now increasing evidence suggesting an important role of EP(3) and EP(4) receptor subtypes in the control of the human vascular tone and remodeling of the vascular wall as well in platelet aggregation and thrombosis. These receptors are implicated in vascular homeostasis and in the development of some pathological situations, such as atherosclerosis, aneurysms and hypertension. The use of specific EP agonists/antagonists would provide a novel cardiovascular therapeutic approach. In this review, we discuss the role of prostaglandin E(2) receptors in the control of human blood and vascular cells.

5.
Title: Systematic study of the elastic properties of Mn(3)AC antiperovskite with A = Zn, Al, Ga, In, Tl, Ge and Sn
Author(s): Medkour, Y.; Roumili, A.; Maouche, D.; et al.
Source: JOURNAL OF ALLOYS AND COMPOUNDS Volume: 541 Pages: 75-78 DOI: 10.1016/j.jallcom.2012.06.081 Published: NOV 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
First principle calculations were made to investigate the elastic properties of Mn(3)AC antiperovskites, A = Zn, Al, Ga, In, Tl, Ge and Sn. The estimated equilibrium lattice parameters are in agreement with the experimental ones. From the single crystal elastic constants we have calculated the polycrystalline elastic moduli: the bulk modulus B, shear modulus G, tetragonal shear modulus G', Young's modulus Y, Cauchy's pressure CP, Poisson's ratio v, elastic anisotropy factor and Pugh's criterion G/B. Using Debye's approximation we have deduced the elastic wave velocities and Debye's temperature. (C) 2012 Elsevier B. V. All rights reserved.
6.
Title: A Reciprocal-Orthogonal Parametric Transform and Its Fast Algorithm
Author(s): Bouguezel, Saad
Source: IEEE SIGNAL PROCESSING LETTERS Volume: 19 Issue: 11 Pages: 769-772 DOI: 10.1109/LSP.2012.2220354 Published: NOV 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this letter, a reciprocal-orthogonal parametric transform and an efficient algorithm for its simple construction and fast computation are proposed. The algorithm is developed by introducing a recursive approach to decompose the transform matrix into a product of sparse matrices using the Kronecker product. It is shown that the structure of the resulting algorithm is very similar to that of the well-known Walsh-Hadamard transform, except for the multipliers introduced by the independent parameters. The transform has a large number of independent parameters that can be chosen arbitrarily from the complex plane. Thus, many interesting special cases can easily be obtained from the proposed transform. Moreover, we carry out a number of experiments to show that its independent parameters can successfully be used as an additional secret key for image encryption.
7.
Title: A new robust adaptive fuzzy sliding mode power system stabilizer
Author(s): Nechadi, E.; Harmas, M. N.; Hamzaoui, A.; et al.
Source: INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS Volume: 42 Issue: 1 Pages: 1-7 DOI: 10.1016/j.ijepes.2012.03.032 Published: NOV 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
This paper presents a novel power system stabilizer based on adaptive fuzzy sliding mode approach without reaching phase. We consider consequences of a major post disturbance on a power system for three different loading and operating conditions. Speed deviation and accelerating power are selected as controller inputs. A new sliding surface enabling for sliding to occur at any state initial conditions is used to develop a robust controller. Moreover, two adaptive fuzzy systems are used to approximate power system dynamics. Stability issue is addressed via Lyapunov synthesis. The robustness of the proposed method is verified on a single-machine infinite-bus and on a multi-machine power system stabilizer under different operating conditions. A comparative simulation study is presented to evaluate achieved performance enhancements showing better oscillations damping and faster transient dynamic behaviour over three considered controllers: a conventional, a dual-input and a classical sliding mode power system stabilizer. (c) 2012 Elsevier Ltd. All rights

reserved.
8.
Title: Characterization and MCNP simulation of neutron energy spectrum shift after transmission through strong absorbing materials and its impact on tomography reconstructed image
Author(s): Hachouf, N.; Kharfi, F.; Boucenna, A.
Source: APPLIED RADIATION AND ISOTOPES Volume: 70 Issue: 10 Pages: 2355-2361 DOI: 10.1016/j.apradiso.2012.06.017 Published: OCT 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
An ideal neutron radiograph, for quantification and 3D tomographic image reconstruction, should be a transmission image which exactly obeys to the exponential attenuation law of a monochromatic neutron beam. There are many reasons for which this assumption does not hold for high neutron absorbing materials. The main deviations from the ideal are due essentially to neutron beam hardening effect. The main challenges of this work are the characterization of neutron transmission through boron enriched steel materials and the observation of beam hardening. Then, in our work, the influence of beam hardening effect on neutron tomographic image, for samples based on these materials, is studied. MCNP and FBP simulation are performed to adjust linear attenuation coefficients data and to perform 2D tomographic image reconstruction with and without beam hardening corrections. A beam hardening correction procedure is developed and applied based on qualitative and quantitative analyses of the projections data. Results from original and corrected 2D reconstructed images obtained shows the efficiency of the proposed correction procedure. (C) 2012 Elsevier Ltd. All rights reserved.
9.
Title: Theoretical prediction of the structural, elastic, electronic and thermodynamic properties of V3M (M = Si, Ge and Sn) compounds
Author(s): Chihi, T.; Fatmi, M.
Source: SUPERLATTICES AND MICROSTRUCTURES Volume: 52 Issue: 4 Pages: 697-703 DOI: 10.1016/j.spmi.2012.06.009 Published: OCT 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Density functional theory (DFT), is used in our calculations to study the V3M (M = Si, Ge and Sn) compounds, we are found that V3Sn compound is mechanically unstable because of a negative C-44 = -19.41 GPa. For each of these compounds considered, the lowest energy structure is found to have the lowest N(E-f) value. Also there is a strong interaction between V and V, the interaction between M (M = Si, Ge, Sn) and V (M and M) is negative, not including Si [Sn]. In phonon density of states PDOS. the element contributions varies from lighter (high frequency) to heaviest (low frequency). (C) 2012 Elsevier Ltd. All rights reserved.
10.
Title: Modeling and Simulation of Resistive Superconducting Fault-Current Limiters
Author(s): Nemdili, S.; Belkhiat, S.
Source: JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM Volume: 25 Issue: 7 Pages: 2351-2356 DOI: 10.1007/s10948-012-1685-z Published: OCT 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Superconducting fault-current limiters (SFCL) offer ideal performance in electrical power system. The design of SFCL has to be both flexible, to allow an easy adaptation to the specific requirements of each particular application, and a high quality standard with reproducible properties. Up to now no simulation model of SFCL has been validated or introduced in the Library of MATLAB software. In this paper a simulation model for a novel resistive type superconducting fault-current limiter is proposed. This model includes the electric field-current density (E-J) characteristics of High-Temperature Superconductors (HTS). A graphical interface using Graphical User Interface

(GUI) of MATLAB is developed in order to ease the operation of the proposed model. This one facilitates the introduction or the parameter modification of materials candidate to a SFCL model. Thus, the operation characteristics and limitation behavior of SFCL have been investigated. The developed model accurately predicted the current-time waveforms achievable with typical limiters, and improved standard of understanding concerning the fault-current limitation mechanisms.

51.

11.

Title: Data mining from multiple heterogeneous relational databases using decision tree classification

Author(s): Mehenni, Tahar; Moussaoui, Abdelouahab

Source: PATTERN RECOGNITION LETTERS Volume: 33 Issue: 13 Pages: 1768-1775 DOI: 10.1016/j.patrec.2012.05.014 Published: OCT 1 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Nowadays, the expansion of computer networks and the diversity of data sources require new data mining approaches in multi-database systems. We propose a classification approach across multiple heterogeneous relational databases. More specifically, given a set of inter-related databases, we use a regression model for predicting the most useful links that will be connected to build a multi-relational decision tree. Experiments performed on different real and synthetic databases were very satisfactory compared with previous classification approaches in multiple databases. (c) 2012 Elsevier B.V. All rights reserved.

12.

Title: First principles study of the structural, elastic, electronic and optical properties of CaSrTt (Tt=Si, Ge, Sn and Pb)

Author(s): Saoudi, A.; Hachemi, A.; Ferhat-Hamida, A.; et al.

Source: SOLID STATE COMMUNICATIONS Volume: 152 Issue: 19 Pages: 1800-1806 DOI: 10.1016/j.ssc.2012.07.009 Published: OCT 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

We present an ab initio study of the structural, elastic, electronic and optical properties of CaSrTt (Tt=Si, Ge, Sn and Pb) compounds. To more-accurately describe the properties of these materials, the calculations were based on the OFT theory with the generalized gradient approximation (GGA). In particular, the calculated lattice constants are in good agreement with the experimental results, with a deviation less than 0.67%, 2.74% and 1.7% for a, b and c, respectively. For the equilibrium volume, the deviation does not exceed 4.7%. Single-crystal elastic stiffness (C-ij) values were calculated and the polycrystalline elastic moduli (B and G) were estimated utilizing Voigt. Reuss and Hill's approximations. The electronic band-structure calculations indicate that these compounds are semiconductors, in agreement with the literature data on their Ae(2)Tt analogues. The dielectric function, refractive index, extinction coefficient, reflectivity spectrum and electron energy loss are calculated over a spectral range from 0 to 45 eV.
Unfortunately, there is no available previous study for comparison. (C) 2012 Elsevier Ltd. All rights reserved.

13.

Title: Morphological behavior and wear of polyurethane pads used in glass polishing process

Author(s): Belkhir, N.; Bouzid, D.; Herold, V.

Source: PRECISION ENGINEERING-JOURNAL OF THE INTERNATIONAL SOCIETIES FOR PRECISION ENGINEERING AND NANOTECHNOLOGY Volume: 36 Issue: 4 Pages: 641-649 DOI: 10.1016/j.precisioneng.2012.05.006 Published: OCT 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

The porous polyurethane polishing pads are used in the optical glass chemical mechanical polishing process. The wear of the polishing pad and morphology are important for the polishing process efficiency and the surface quality. The subject of this work is to evaluate the morphology and wear of porous polyurethane polishing pads, and their influence on the material removal rate and quality in the optical glass chemical mechanical polishing process.
For this study, several optical glass polishing operations were done using different porous polyurethane polishing pads. The polishing pads were recovered after polishing to be characterized using several techniques such as: the SEM, the optical microscopy and the mechanical profilometry. The obtained results show, that the polyurethane polishing pads produce good surface quality with high material removal rate.
The polyurethane polishing pads are relatively wear resistant in the first hour of use: however some changes were seen on the polishing pads, and their characteristics. The most conspicuous change is the abrasive grains incrustation in the polishing pads microstructure that changes their properties.
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14.
Title: First and second harmonic generation of the XAl2Se4 (X=Zn,Cd,Hg) defect chalcopyrite compounds
Author(s): Ouahrani, Tank; Khenata, R.; Lasri, B.; et al.
Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 18 Pages: 3760-3766 DOI: 10.1016/j.physb.2012.05.057 Published: SEP 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The chemical bonding of the ZnAl2Se4, CdAl2Se4 and HgAl2Se4 defect chalcopyrites has been studied in the framework of the quantum theory of atoms in molecules (AIM). The GW quasi-particle approximation is used to correct the DFT-underestimation of energy gap, and as a consequence the linear and nonlinear optical properties are significantly enhanced. The second harmonic generation (SHG) displays certain dependence with the ionicity degree decrease through the dependency of the SHG on the band gap. The occurrence of the AIM saddle point is characterized and some clarifying features in relationship with the density topology are exposed, which enable to understand the relation with the second harmonic generation effect. (c) 2012 Elsevier B.V. All rights reserved.
15.
Title: Triple-differential cross sections for the ionization of thymine by electrons and positrons
Author(s): Dal Cappello, C.; Charpentier, I.; Houamer, S.; et al.
Source: JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS Volume: 45 Issue: 17 Article Number: 175205 DOI: 10.1088/0953-4075/45/17/175205 Published: SEP 14 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We apply the second Born approximation and the BBK methods to study triple-differential cross sections for the ionization of valence orbitals of a thymine molecule by electrons and positrons. Calculations have been performed for a coplanar geometry at an incident energy of 250 eV and an ejected-electron energy of 20 eV, while the angle of scattering is fixed at 10 degrees.. We use an accurate single-centre wavefunction for the initial state of the target and the well-known CNDO model. The present second Born approximation (with the single-centre wavefunction for the initial state) and the BBK model (with the CNDO model) yield cross sections in good agreement with the recent experimental data for electron impact. In the case of positron impact, we find that the contribution of the second term of the Born series is not insignificant for the present kinematics.
16.
Title: USE OF A TWO-DIMENSIONAL PSEUDO-HOMOGENEOUS MODEL FOR THE STUDY OF TEMPERATURE AND CONVERSION PROFILES DURING A POLYMERIZATION REACTION IN A TUBULAR CHEMICAL REACTOR

Author(s): Marghsi, Mohamed; Benachour, Djafer
Source: MATERIALI IN TEHNOLOGIJE Volume: 46 Issue: 5 Pages: 539-546 Published: SEP-OCT 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A two-dimensional pseudo-homogeneous model is used to study temperature and conversion profiles during the polymerization reaction of low-density polyethylene (LDPE) in a tubular chemical reactor. This model is integrated with the Runge-Kutta 4th-order semi-implicit method, using orthogonal collocation to transform a system of complex equations into the ordinary differential ones, with respect to the heat and mass transfers involved.
Ethylene polymerization has been simulated over a range of temperatures and pressures and according to the mechanisms of radical polymerization. The results of several tests, carried out under the conditions similar to those of an industrial-scale polymerization, are presented. The influences of the initial temperature T-o, the total pressure P-t and the ratio L/D (the main dimensions of the reactor) on the profiles of the temperature and conversion rates are tested and analyzed to predict the behavior and performance of the tubular chemical reactor considered.
The focus was on the effect of an increase in the initial temperature T-o since such a rise results in a decrease in T-c (hot spot) appearing at the entrance of the reactor on the one hand, and in an improved conversion on the other hand. An opposite effect is observed for P-t since a pressure increase will result in a rapid rise in T-c and a decrease in the conversion. The ranges of pressures and temperatures are thus limited by the system performance: excessive pressures must be avoided and working temperatures must be chosen in the range where the polymerization reaction is very fast; such conditions allow not only a good conversion, but also a resulting polymer with a low crystallinity and, thus, a low density.
In the present work the effect of the L/D ratio was also studied in order to find the most suitable ratio that permits the best evacuation of the heat released during the polymerization.
17.
Title: An adaptive prototype design to maximize power harvesting using electrostrictive polymers
Author(s): Meddad, M.; Eddiai, A.; Guyomar, D.; et al.
Source: JOURNAL OF APPLIED PHYSICS Volume: 112 Issue: 5 Article Number: 054109
DOI: 10.1063/1.4751456 Published: SEP 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The harvesting energy with electrostrictive polymers has great potential for remote applications such as in vivo sensors, embedded micro-electro-mechanical systems devices, and distributed network instruments. A majority of current research activities in this field refers to classical piezoelectric ceramics, but electrostrictive polymers offer promise of energy harvesting with few moving parts; power can be produced by simply stretching and contracting a relatively low-cost rubbery material. The use of such polymers for energy harvesting is a growing field, which has great potential from an energy density viewpoint. The output power is inversely proportional to the harvester's frequency bandwidth. Consequently, it is much harder to efficiently harvest power from low-frequency sources with a large frequency band response and with a very small system size than from a stabilized high-frequency vibration source. This paper presents a new structure that is able to predict mechanical frequency excitation in order to increase power-harvesting capabilities of electrostrictive polymers. An equivalent structure scheme has been developed by using current and electrical schemes models. With a transverse strain of 0.5% and a bias field of 10 V/mu m, such a process rendered it possible to increase the converted power by 80% with a low-frequency mechanical excitation. This study contributes to provide a framework for developing an innovative energy-harvesting technology that collects vibrations from the environment and converts them into electricity to power a variety of sensors. (C) 2012 American Institute of Physics. [http://dx.doi.org /10.1063/1.4751456]
18.
Title: Carbapenemase-producing Acinetobacter baumannii in two university hospitals in Algeria

Author(s): Bakour, Sofiane; Kempf, Marie; Touati, Abdelaziz; et al.
Source: JOURNAL OF MEDICAL MICROBIOLOGY Volume: 61 Issue: 9 Pages: 1341-1343 DOI: 10.1099/jmm.0.045807-0 Published: SEP 2012
Times Cited: 0 (from All Databases)

19.
Title: Nonlinear dynamic systems identification based on dynamic wavelet neural units (vol 19, pg 997, 2010)
Author(s): Saoud, L. Saad; Khellaf, A.
Source: NEURAL COMPUTING & APPLICATIONS Volume: 21 Issue: 6 Special Issue: SI Pages: 1463-1463 DOI: 10.1007/s00521-011-0520-y Published: SEP 2012
Times Cited: 0 (from All Databases)

20.
Title: Ab initio study of the structural, electronic and elastic properties of AgSbTe2, AgSbSe2, Pr3AlC, Ce3AlC, Ce3AlN, La3AlC and La3AlN compounds
Author(s): Berri, S.; Maouche, D.; Medkour, Y.
Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 17 Pages: 3320-3327 DOI: 10.1016/j.physb.2012.04.011 Published: SEP 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this paper, we study the structural, electronic and elastic properties of the ternary AgSbTe2, AgSbSe2, Pr3AlC, Ce3AlC, Ce3AlN, La3AlC and La3AlN compounds using the full-potential linearized augmented plane wave (FP-LAPW) scheme and the pseudopotential plane wave (PP-PW) scheme in the frame of generalized gradient approximation (GGA). Results are given for the lattice parameters, bulk modulus, and its pressure derivative. The calculated lattice parameters are in good agreement with experimental results. We have determined the full set of first-order elastic constants, shear modulus, Young's modulus and Poisson's ratio of these compounds. Also, we have presented the results of the band structure, densities of states, it is found that this compounds metallic behavior, and a negative gap Gamma -> R for Pr3AlC. The analysis charge densities show that bonding is of covalent-ionic and ionic nature for AgSbSe2 and AgSbTe2 compounds. (C) 2012 Elsevier B.V. All rights reserved.
21.
Title: Ab initio study of the structural, electronic, elastic and magnetic properties of Cu2GdIn, Ag2GdIn and Au2GdIn
Author(s): Berri, Saadi; Maouche, Djamel; Zerarga, Fares; et al.
Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 17 Pages: 3328-3334 DOI: 10.1016/j.physb.2012.04.012 Published: SEP 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We preformed first-principle calculations for the structural, electronic, elastic and magnetic properties of Cu(2)GdIn, Ag2GdIn and Au2GdIn using the full-potential linearized augmented plane wave (FP-LAPW) scheme within the generalized gradient approximation by Wu and Cohen (GGA-WC), GGA+U, the local spin density approximation (LSDA) and LSDA+U. The lattice parameters, the bulk modulus and its pressure derivative and the elastic constants were determined. Also, we present the band structures and the densities of states. The electronic structures of the ferromagnetic configuration for Heusler compounds (X2GdIn) have a metallic character. The magnetic moments were mostly contributed by the rare-earth Gd 4f ion. (C) 2012 Elsevier B.V. All rights reserved.
22.
Title: Ab initio study of some fundamental properties of the M3X (M=Cr, V; X=Si, Ge) compounds
Author(s): Chihi, T.; Fatmi, M.; Ghebouli, M. A.

Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 17 Pages: 3591-3595 DOI: 10.1016/j.physb.2012.05.032 Published: SEP 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
M3X (M=Cr, V; X=Si, Ge) compounds are studied using first-principles calculations based on the Density Functional Theory (DFT). It is found that the bulk of Cr3X (X=Si, Ge) compounds are comparable to those of Al2O3, the nearest-neighbor distance DM-M and DM-X in these compounds increase and the bulk modulus decrease, there is a strong interaction between M and M (M=Cr the interaction is stronger). Also the interaction between M (M=Cr, V) and X (X=Ge) is negative, an anti-bonding-type interaction is dominant between these atoms. (C) 2012 Elsevier B.V. All rights reserved.

23.
Title: Comment on "Experimental and theoretical study of the triple-differential cross section for electron-impact ionization of thymine molecules"
Author(s): Houamer, S.; Dal Cappello, C.; Charpentier, I.; et al.
Source: PHYSICAL REVIEW A Volume: 86 Issue: 2 Article Number: 026701 DOI: 10.1103/PhysRevA.86.026701 Published: AUG 22 2012
Times Cited: 0 (from All Databases)

[View abstract]

24.
Title: Relationship between ammonia sensing properties of polyaniline nanostructures and their deposition and synthesis methods
Author(s): Kebiche, H.; Debarnot, D.; Merzouki, A.; et al.
Source: ANALYTICA CHIMICA ACTA Volume: 737 Pages: 64-71 DOI: 10.1016/j.aca.2012.06.003 Published: AUG 6 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The ammonia absorption properties of polyaniline nanostructures are studied in terms of sensitivity, response and recovery times and stability. These characteristics are obtained by measuring, at room temperature, the absorbance variations at 632 nm. The nanostructures are synthesized either by interfacial or rapid or dropwise polymerizations with the oxidant-to-monomer mole ratio equals to 0.5 or 1. The influence of the deposition method (in-situ or drop-coating technique) as well as the nature of the dopant (HCl CSA or I-2) on the gas detection properties are also studied. The results show a strong dependence of the morphology on the deposition method, the in-situ technique leads to the best sensitivity and response time. For this deposition method, the nanostructures sensitivity, response time and regeneration rate depend on the synthesis method, the dopant and the mole ratio. The ageing effect after 8 months under ambient conditions and the mechanism of interaction between the polyaniline nanostructures and ammonia molecules are also presented. (C) 2012 Elsevier B.V. All rights reserved.

25.
Title: First-principles investigation of the ternary scandium based inverse-perovskite carbides Sc(3)AC (A = Al, Ga, In and Tl)
Author(s): Haddadi, K.; Bouhemadou, A.; Zerarga, F.; et al.
Source: SOLID STATE SCIENCES Volume: 14 Issue: 8 Pages: 1175-1185 DOI: 10.1016/j.solidstatesciences.2012.04.028 Published: AUG 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

Based on first-principles approach, we present a comparative study of structural, electronic, elastic and thermo-dynamical properties of the series of inverse-perovskites Sc(3)AC, with A = Al, Ga, In and Tl. The calculated equilibrium lattice constants are in excellent agreement with the experimental and available theoretical data. The electronic band structures and densities of states profiles show that the studied compounds are conductors. Analysis of atomic site projected local density of states and charge densities reveals that a mixture of covalent-ionic-metallic characterizes the chemical bonding of the considered inverse-perovskites. Pressure dependence up to 40 GPa of the single-crystal and polycrystalline elastic constants has been investigated in details. The computed B/G ratios show that all Sc(3)AC compounds are brittle. We have estimated the sound velocities in the principal directions. Through the quasi-harmonic Debye model, in which the phononic effects are taken into account, the temperature and pressure effects on the lattice constant, bulk modulus, heat capacity and Debye temperature are performed. (C) 2012 Elsevier Masson SAS. All rights reserved.

26.

Title: Sequential optimization approach for enhanced production of glutamic acid from Corynebacterium glutamicum 2262 using date juice

Author(s): Abdenacer, Mouffok; Kahina, Bedaida Ibtissam; Aicha, Nancib; et al.

Source: BIOTECHNOLOGY AND BIOPROCESS ENGINEERING Volume: 17 Issue: 4 Pages: 795-803 DOI: 10.1007/s12257-011-0486-8 Published: AUG 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

To improve glutamic acid production from Corynebacterium glutamicum 2262 using date juice, a culture medium was screened and optimized using the statistical experimental designs of Plackett-Burman and response-surface methodology. In the first step, a two-level Plackett-Burman design was adopted to select the most important nutrients influencing the glutamic acid production, which showed that the date juice sugars, urea, peptone, and glycine betaine were the most significant ingredients ($P < 0.05$). Finally, response surface Box-Behnken design was employed to develop a mathematical model to identify the optimum concentrations of key components for higher glutamic acid production, which revealed the following: date juice (45 g/L), urea (16.9 g/L), peptone (15 g/L), and glycine betaine (12 g/L). The high correlation between the predicted and observed values indicated the validity of the model. Glutamic acid concentration increased significantly with optimized medium (33.2 g/L) when compared with non-optimized medium (12 g/L).

27.

Title: First-principles study on stability, energy gaps, optical phonon and related parameters of In1-x-yAlxGayAs alloys

Author(s): Ghebouli, M. A.; Choutri, H.; Bouarissa, N.; et al.

Source: JOURNAL OF SOLID STATE CHEMISTRY Volume: 192 Pages: 161-167 DOI: 10.1016/j.jssc.2012.03.052 Published: AUG 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Based on the density functional theory as implemented in the Abinit code under the virtual crystal approximation, the lattice constant, bulk modulus, elastic constants, gap energies, electron effective mass, the dielectric constants and born effective charge in In1-x-yAlxGayAs have been calculated with both GGA and LDA in the range $0 <= y <= 0.9801$. The optical and acoustical phonon frequencies, Frohlich coupling parameter, deformation energy and polaron effective mass are calculated and their dependence on the Ga content is examined. For AlAs, our results are in reasonable agreement with the known data in the literature; while for other contents our treatments are predictions. (C) 2012 Elsevier Inc. All rights reserved.

28.

Title: k(0)-NAA quality assessment in an Algerian laboratory by analysis of SMELS and four IAEA reference materials using Es-Salam research reactor

Author(s): Hamidatou, L. A.; Dekar, S.; Boukari, S.

Source: NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION

A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT Volume: 682 Pages: 75-78 DOI: 10.1016/j.nima.2012.04.042 Published: AUG 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Different types of synthetic multi-element standard material (SMELS) and four IAEA reference materials, 140, Sl-1, Soil-7 and Lichen-336 were analyzed for validation and QC/QA of the k(0)-standardised Neutron Activation Analysis (k(0)-NAA). The samples of SMELS and RMs were irradiated at Es-Salam research reactor and measured on an absolutely calibrated HPGe detector with 35% relative efficiency connected to a Canberra Genie 2k inspector. Concentrations of 33 elements such as As, Au, Ba, Br, Ca, Ce, Co, Cr, Cs, Eu, Fe, Hf, In, K, La, Mn, Mo, Na, Nd, Rb, Sb, Sc, Sc, Sm, Sr, Ta, Tb, Th, Tm, U, Yb, Zn, and Zr were determined in SMELS and RMs. The analytical results agreed well with the assigned values of SMELS and certified values of RMs. In the case of RMs, concentrations of a few elements, whose certified values are not available, could be determined. The comparison between experimental values and assigned/certified data for SMELS and RMs was made by means of the results from Relative Bias, Z-score and U-score. The relatives bias of the elements determined in SMELS with respect to the assigned values were all within +/- 4.6%. For RMs with respect to certified values were within +/- 10% except for few elements for which RB varied from -28.6% to +12.8%. The Z-score values at 95% confidence level for most of the elements in both the materials were within +/- 1. The U-scores for most of the elements were lower than 1. (C) 2012 Elsevier BM. All rights reserved.
29.
Title: Structural, electronic and elastic properties of the new ternary alkali metal chalcogenides KLiX (X = S, Se and Te)
Author(s): Seddik, T.; Khenata, R.; Bouhemadou, A.; et al.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 61 Pages: 206-212 DOI: 10.1016/j.commatsci.2012.04.020 Published: AUG 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The structural, electronic and elastic properties of the tetragonal alkali metal chalcogenides KLiX [X: S, Se and Te] have been investigated using the full-potential (linearized) augmented plane wave plus local orbitals method. The exchange-correlation potential is treated within the generalized gradient approximation of Wu and Cohen. Moreover, the alternative form of GGA proposed by Engel and Vosko is also used for the electronic properties. The calculated structural parameters are in excellent agreement with the experimental data. The elastic constants C-ij are predicted using the total energy variation versus strain technique. The polycrystalline elastic moduli, namely; shear modulus, Young's modulus, Poisson's ratio, sound velocities and Debye temperature are derived from the obtained single-crystal elastic constants. Brittleness behavior of these compounds is interpreted via the calculated elastic constants C-ij. Calculated band structures show that KLiS and KLiSe have an indirect energy band gap, whereas KLiTe has a direct energy band gap. The contribution of alkali metals and chalcogen atoms to the electronic band structure and electronic density of states has been analyzed. This is the first quantitative theoretical prediction of the elastic and electronic properties for these investigated compounds and still awaits experimental confirmations. (c) 2012 Elsevier B.V. All rights reserved.
30.
Title: La1.98NiO4 +/-delta, a new cathode material for solid oxide fuel cell: Impedance spectroscopy study and compatibility with gadolinia-doped ceria and yttria-stabilized zirconia electrolytes
Author(s): Ferkhi, M.; Ringuede, A.; Khaled, A.; et al.
Source: ELECTROCHIMICA ACTA Volume: 75 Pages: 80-87 DOI: 10.1016/j.electacta.2012.04.064 Published: JUL 30 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A new SOFC cathode material, La1.98NiO4 +/-delta, was tested in presence of two electrolytes, yttria-stabilized zirconia (YSZ) and gadolinia-doped ceria (GDC). XRD analysis showed the absence of undesirable phases at the La1.98NiO4 +/-delta/GDC interface, whereas lanthanum zirconate (La2Zr2O7), an insulating phase, is present between electrode La1.98NiO4 +/-delta and YSz electrolyte. XPS analysis showed that the oxygen lattice can be present in form of La-O and LaNiO3, which explains the high conductivity for these materials. At temperatures lower than 650 degrees C, the area specific resistance of the electrodes, measured by electrochemical impedance spectroscopy is significantly inferior when associated to GDC rather than YSZ electrolyte. In addition, in the case of GDC, a lower activation energy of about 0.7 eV was obtained, which could be explained by a higher mobility of oxide ions at the La1.98NiO4 +/-delta/GDC interface compared to the La1.98NiO4 +/-delta/YSZ one. (C) 2012 Elsevier Ltd. All rights reserved.

31.

Title: Electrocatalytic oxidation of organic substrates with molecular oxygen using tetradentate ruthenium(III)-Schiff base complexes as catalysts

Author(s): Ourari, Ali; Khelafi, Mostefa; Aggoun, Djouhra; et al.

Source: ELECTROCHIMICA ACTA Volume: 75 Pages: 366-370 DOI: 10.1016/j.electacta.2012.05.021 Published: JUL 30 2012

Times Cited: 0 (from All Databases)

[Hide abstract]
Three complexes Ru(III)CILn involving different tetradentate Schiff base ligands L-n (see L-1, L-2 and L-3 in Chart 1) were used as catalysts in the oxidation of cyclooctene and tetraline in the presence of molecular dioxygen associated with benzoic anhydride. The efficiency of this oxidation reaction was tested in the presence of two apical bases: 1- or 2-methylimidazole. All complexes exhibit a quasi-reversible redox system. The electrolysis experiments were carried out at controlled potential for each complex, using different substrates such as cyclooctene and tetraline. The oxidized products are cyclooctene oxide (turnover 6.7), a mixture of 1-tetralol and 1-tetralone (turnover 7.6) respectively. (C) 2012 Published by Elsevier Ltd.

32.

Title: The KATRIN pre-spectrometer at reduced filter energy

Author(s): Prall, M.; Renschler, P.; Glueck, F.; et al.

Source: NEW JOURNAL OF PHYSICS Volume: 14 Article Number: 073054 DOI: 10.1088/1367-2630/14/7/073054 Published: JUL 27 2012

Times Cited: 1 (from All Databases)

[Hide abstract]
The Karlsruhe Tritium Neutrino (KATRIN) experiment will determine the mass of the electron neutrino with a sensitivity of 0.2 eV (90% CL) via a measurement of the beta-spectrum of gaseous tritium near its endpoint of E-0 = 18.57 keV. An ultra-low background of about b = 10 mHz is among the requirements on reaching this sensitivity. In the KATRIN main beam line, two spectrometers of MAC-E filter type are used in tandem configuration. This setup, however, produces a Penning trap, which could lead to increased background. We have performed test measurements showing that the filter energy of the pre-spectrometer can be reduced by several keV in order to diminish this trap. These measurements were analyzed with the help of a complex computer simulation, modeling multiple electron reflections from both the detector and the photoelectric electron source used in our test setup.

33.

Title: Low bias histogram-based estimation of mutual information for feature selection

Author(s): Hacine-Gharbi, Abdenour; Ravier, Philippe; Harba, Rachid; et al.

Source: PATTERN RECOGNITION LETTERS Volume: 33 Issue: 10 Pages: 1302-1308 DOI: 10.1016/j.patrec.2012.02.022 Published: JUL 15 2012

Times Cited: 0 (from All Databases)

[Hide abstract]
This paper presents a low bias histogram-based estimation of mutual information and its application to feature selection problems. By canceling the first order bias, the estimation avoids the bias accumulation problem that affects classical methods. As a consequence, on a synthetic feature selection problem, only the proposed method results in the exact number of features to be chosen in the Gaussian case when compared to four other approaches. In a speech recognition application, the proposed method and the Sturges method are the only ones that lead to a correct number of selected features in the noise free case. In the reduced data case, only the proposed method points out the optimal number of features to select. Finally, in the noisy case, only the proposed method leads to results of high quality; other methods show severely underestimated numbers of selected features. (C) 2012 Elsevier B.V. All rights reserved.

34.
Title: First-Principles Study of Structural, Elastic and Mechanical Properties of Zinc-Blende Boron Nitride (B3-BN)
Author(s): Daoud, S.; Loucif, K.; Bioud, N.; et al.
Source: ACTA PHYSICA POLONICA A Volume: 122 Issue: 1 Pages: 109-115 Published: JUL 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
First principles study of structural, elastic properties and anisotropy effect on the mechanical parameters of the zinc-blende boron nitride has been performed using the pseudopotential plane wave method based on density functional theory with the Teter and Pade exchange-correlation functional of the local density approximation. The equilibrium lattice constant, molecular and crystal densities, bond length, the independent elastic constants, bulk modulus and its pressure derivatives, compressibility, shear modulus, internal strain parameter, isotropy factor, compliance constants, the Debye temperature, Young's modulus, Poisson's ratio, the Lame constants and sound velocity for directions within the important crystallographic planes of this compound are obtained and analyzed in comparison with the available theoretical data reported in the literature.

35.
Title: Exact Green function for a Dirac particle in a weak gravitational plane wave field. Alternative path integral approach
Author(s): Ould-Lahoucine, H. K.; Chetouani, L.
Source: JOURNAL OF MATHEMATICAL PHYSICS Volume: 53 Issue: 7 Article Number: 072303 DOI: 10.1063/1.4736720 Published: JUL 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The exact Green function for a Dirac particle in interaction with a weak gravitational plane wave field is obtained throughout an alternative path integral approach. In addition, a canonical transformation is obtained so that the generating function is showed to be a solution to the Hamilton-Jacobi equation for spin zero particle. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.4736720]

36.
Title: Theoretical prediction of the structural, elastic, electronic, optical and thermal properties of the cubic perovskites CsXF3 (X = Ca, Sr and Hg) under pressure effect
Author(s): Ghebouli, B.; Ghebouli, M. A.; Bouhemadou, A.; et al.
Source: SOLID STATE SCIENCES Volume: 14 Issue: 7 Pages: 903-913 DOI: 10.1016/j.solidstatesciences.2012.04.019 Published: JUL 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Some physical properties of the cubic perovskites CsXF3 (X = Ca, Sr and Hg) have been investigated using pseudopotential plane-wave method based on the density functional theory. The calculated lattice parameters within GGA and LDA agree reasonably with the available experimental data. The elastic constants and their pressure derivatives are predicted using the static finite strain technique. We derived the bulk and shear moduli. Young's modulus, Poisson's ratio and Lame's constants for ideal polycrystalline aggregates. The analysis of B/G ratio indicates that CsXF3 (X = Ca, Sr and Hg) are ductile materials. The thermal effect on the volume, bulk modulus, heat capacity and Debye temperature was predicted. (C) 2012 Elsevier Masson SAS. All rights reserved.

37.
Title: Effect of hydrostatic pressure on the structural, elastic and electronic properties of (B3) boron phosphide
Author(s): Daoud, Salah; Loucif, Kamel; Bioud, Nadhira; et al.
Source: PRAMANA-JOURNAL OF PHYSICS Volume: 79 Issue: 1 Pages: 95-106 DOI: 10.1007/s12043-012-0283-8 Published: JUL 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this paper we present the results obtained from first-principles calculations of the effect of hydrostatic pressure on the structural, elastic and electronic properties of (B3) boron phosphide, using the pseudopotential plane-wave method (PP-PW) based on density functional theory within the Teter and Pade exchange-correlation functional form of the local density approximation (LDA). The lattice parameter, molecular and crystal densities, near-neighbour distances, independent elastic constants, bulk modulus, shear modulus, anisotropy factor and energy bandgaps of (B3) BP under high pressure are presented. The results showed a phase transition pressure from the zinc blende to rock-salt phase at around 1.56 Mbar, which is in good agreement with the theoretical data reported in the literature.

38.
Title: Structural, elastic, electronic and magnetic properties of Mn3ZnC and Mn3GeC
Author(s): Medkour, Y.; Roumili, A.; Louail, L.; et al.
Source: COMPUTATIONAL AND THEORETICAL CHEMISTRY Volume: 991 Pages: 161-164 DOI: 10.1016/j.comptc.2012.04.013 Published: JUL 1 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
We report first-principles calculations, on the structural, elastic, electronic and magnetic properties of Mn3ZnC and Mn3GeC antiperovskite. Our calculations show that these compounds are more stable in the ferromagnetic states, the estimated equilibrium lattice parameters (a and V) are in agreement with the experimental ones. From the single crystal elastic constants: we have derived the polycrystalline elastic moduli, the calculated bulk modulus of Mn3ZnC and Mn3GeC which are respectively 191 and 221 GPa. Mn3ZnC shows a weak resistance to shear deformation (54 GPa) as compared to Mn3GeC (116 GPa). Similarly to previous studies on carbides antiperovskite, these compounds are good electrical conductors. The investigation of the total and partial densities of states shows that the conductivity is assured by d electrons of the transition metal atoms. The ground state was found ferromagnetic and the magnetic moment in these compounds is mainly related to the spin polarisation of Mn d electrons. The average magnetic moment per unit formula decreases from 7.02 mu(B) to 3.18 mu(B) for Mn3ZnC and Mn3GeC respectively. (C) 2012 Elsevier B.V. All rights reserved.

39.
Title: Updated database and new empirical values for K-shell fluorescence yields
Author(s): Kahoul, A.; Aylikci, V.; Aylikci, N. Kup; et al.
Source: RADIATION PHYSICS AND CHEMISTRY Volume: 81 Issue: 7 Pages: 713-727 DOI: 10.1016/j.radphyschem.2012.03.006 Published: JUL 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The measured K-shell fluorescence yield values that were reported in the literature from 1994 to 2011 were reviewed and presented in a table form (about 341 new measurements). The Weighted-mean values of experimental data were fitted by the analytical function to deduce new empirical K-shell fluorescence yields for a broad range of elements. The results were compared with the other theoretical, experimental and semi-empirical values reported in the literature. Reasonable agreement was typically obtained between our result and other works. (C) 2012 Elsevier Ltd. All rights reserved.

40.

Title: Exact Green Function for a Dirac Particle in Presence of Two Orthogonal Plane Wave Fields. Path Integral Derivation

Author(s): Ould-Lahoucine, H. K.; Chetouani, L.

Source: INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS Volume: 51 Issue: 7 Pages: 2208-2219 DOI: 10.1007/s10773-012-1100-3 Published: JUL 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Exact Green function for a Dirac particle subject to a couple of orthogonal plane wave fields is obtained throughout a path integral approach. In addition, a suitable representation of the Dirac matrices is deduced so that the initial problem becomes the one of a free particle.

41.

Title: Opto-electronic response of spinels MgAl2O4 and MgGa2O4 through modified Becke-Johnson exchange potential

Author(s): Amin, B.; Khenata, R.; Bouhemadou, A.; et al.

Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 13 Pages: 2588-2592 DOI: 10.1016/j.physb.2012.03.075 Published: JUL 1 2012

Times Cited: 1 (from All Databases)

[Hide abstract]

A first-principles technique capable of describing the state accurately near to excited states of semiconductors and insulators, namely the modified Becke-Johnson (mBJ) exchange potential approximation is used to investigate the opto-electronic response of magnesium spinel oxides: MgAl2O4 and MgGa2O4. The predicted bandgaps using the mBJ exchange approximation show a significant improvement over previous theoretical work using the common LDA and GGA, and are very closer to the experimental results. Band gap dependent optical parameters, like dielectric constant, index of refraction, reflectivity and optical conductivity are calculated and analyzed. The static dielectric constant and refractive index of MgGa2O4 are much larger than that of MgAl2O4. Refractive index drops below unity for higher energy photons, higher than 17 eV, show that the velocities of incident photons are greater than the velocity of light. However, these overlook can be explained by the fact that a signal must be transmitted as a wave packet rather than monochromatic wave. Moreover, the peak positions of the calculated optical parameters move down to low energies when the value of the band gap decreases. This comprehensive theoretical study of the optoelectronic properties predicts that these materials can be effectively used in the optical devices working in major part of the spectrum. (C) 2012 Elsevier B.V. All rights reserved.

42.

Title: Prediction study of the elastic and thermodynamic properties of the SnMg2O4, SnZn2O4 and SnCd2O4 spinel oxides

Author(s): Allali, D.; Bouhemadou, A.; Zerarga, F.; et al.

Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 60 Pages: 217-223 DOI: 10.1016/j.commatsci.2012.03.044 Published: JUL 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

We have carried out a first-principles density functional study of the structural, elastic and thermodynamic properties for the SnMg2O4, SnZn2O4 and SnCd2O4 cubic normal spinel structures. We have calculated the equilibrium structural parameters: the lattice constant and internal structural parameter. These results agree very well with experimental data. We have investigated the zero-pressure single-crystal and polycrystalline elastic constants and their related properties, confirming prior theoretical results for SnMg2O4 and predicting values for SnZn2O4 and SnCd2O4. The pressure dependence of the elastic constants C-ij can be fit by a straight line over the range 0-30 GPa. Thermal and pressure effects on some macroscopic properties of SnMg2O4, SnZn2O4 and SnCd2O4 are predicted using the quasi-harmonic Debye model in which the lattice vibrations are taken into account. (C) 2012 Elsevier B. V. All rights reserved.

43.

Title: Type-2 fuzzy based adaptive synergetic power system control

Author(s): Nechadi, E.; Harmas, M. N.; Hamzaoui, A.; et al.

Source: ELECTRIC POWER SYSTEMS RESEARCH Volume: 88 Pages: 9-15 DOI: 10.1016/j.epsr.2012.01.009 Published: JUL 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

This paper introduces a new type-2 fuzzy based adaptive synergetic power system stabilizer used in damping power flow limiting oscillations that often occur following disturbances in power systems. Small magnitude and low frequency oscillations, linked to the electromechanical modes in power systems, often persist for long periods of time leading in some cases to loss of synchronism and eventually to blackouts. These oscillations may occur locally or between different areas of a power system. Among many robust control techniques to assure service continuity sliding mode has been proposed despite its inherent chattering drawback. This paper present a novel power system stabilizer based on synergetic control which possesses the same strong robustness and invariance to external disturbances as sliding mode but without its negative chattering. Type-1 fuzzy systems have also been heavily relied on to describe unknown system model but they lack fuzziness in dealing with uncertainties. Better suited to deal with uncertainties type-2 fuzzy systems are used in this paper in approximating the unknown power system nonlinear dynamics while stability is insured through Lyapunov synthesis. Severe operating conditions are used in a simulation study to test the validity and effectiveness of the proposed method. Results indicate good performance and satisfactory transient dynamic behaviour. A multi-machine power system is used to demonstrate the performance of the proposed controller and to show its superiority over other conventional stabilizers used in the literature. (C) 2012 Elsevier B.V. All rights reserved.

44.

Title: Optical properties of xenon implanted CuInSe2 by photoacoustic spectroscopy

Author(s): Satour, F. Z.; Zegadi, A.

Source: JOURNAL OF LUMINESCENCE Volume: 132 Issue: 7 Pages: 1688-1694 DOI: 10.1016/j.jlumin.2012.02.009 Published: JUL 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

A theoretical relation is derived for the normalized photoacoustic amplitude signal of a gas-coupled cell for the case of double-layer solid samples with particular application given to ion implanted semiconductors. Numerical estimates for a solar cell of the type CdS/CuInSe2 based on experimental measured data of these compounds are given to illustrate the photoacoustic effect originating from double-layer samples. In application to ion implanted semiconductors, we show that the absorption coefficient of the implanted layer can be very easily extracted by photoacoustic spectroscopy if the absorption coefficient of the untreated substrate is known. We also present the optical properties results obtained from the analysis of the effect of xenon implantation into CuInSe2 single crystals with the energy of 40 keV and a dose of 5 x 10(16) ions/cm(2). (C) 2012 Elsevier B.V. All rights reserved.

45.

Title: Mechanical characterization of an electrostrictive polymer for actuation and energy harvesting
Author(s): Eddiai, A.; Meddad, M.; Touhtouh, S.; et al.
Source: JOURNAL OF APPLIED PHYSICS Volume: 111 Issue: 12 Article Number: 124115 DOI: 10.1063/1.4729532 Published: JUN 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Electroactive polymers have been widely used as smart material for actuators in recent years. Electromechanical applications are currently focused on energy harvesting and actuation, including the development of wireless portable electronic equipment autonomous and specific actuators such as artificial muscles. The problem to be solved is to make its devices the most efficient, as possible in terms of harvested energy and action. These two criteria are controlled by the permittivity of the electrostrictive polymer used, the Young's modulus, and their dependence on frequency and level of stress. In the present paper, we presented a model describing the mechanical behaviour of electrostrictive polymers with taking into account the mechanical losses. Young's modulus follows a linear function of strain and stress. However, when the elongation becomes higher, the data obtained from this strain linear trend and significant hysteresis loops appear the reflections on the existence of mechanical losses. In this work, to provide the analysis of the experimental observations, we utilized a theoretical model in order to define a constitutive law implying a representative relationship between stress and strain. After detailing this theoretical model, the simulation results are compared with experimental ones. The results show that hysteresis loss increases with the increase of frequency and strain amplitude. The model used here is in good agreement with the experimental results. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.4729532]
46.
Title: Structural, elastic and thermodynamic properties under pressure and temperature effects of MgIn2S4 and CdIn2S4
Author(s): Bouhemadou, A.; Haddadi, K.; Khenata, R.; et al.
Source: PHYSICA B-CONDENSED MATTER Volume: 407 Issue: 12 Pages: 2295-2300 DOI: 10.1016/j.physb.2012.03.017 Published: JUN 15 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
A density functional-based method is used to investigate the structural, elastic and thermodynamic properties of the cubic spinel semiconductors MgIn2S4 and CdIn2S4 at different pressures and temperatures. Computed ground structural parameters are in good agreement with the available experimental data. Single-crystal elastic parameters are calculated for pressure up to 10 GPa and temperature up to 1200 K. The obtained elastic constants values satisfy the requirement of mechanical stability, indicating that MgIn2S4 and CdIn2S4 compounds could be stable in the investigated pressure range. Isotropic elastic parameters for ideal polycrystalline MgIn2S4 and CdIn2S4 aggregates are computed in the framework of the Voigt-Reuss-Hill approximation. Pressure and thermal effects on some macroscopic properties such as lattice constant, volume expansion coefficient and heat capacities are predicted using the quasi-harmonic Debye model in which the lattice vibrations are taken into account. (C) 2012 Elsevier B.V. All rights reserved.
47.
Title: Role of Periodic Input Composition and Sweeping Gas for Improvement of Hydrogen Production in a Palladium Membrane Reactor by Partial Oxidation of Methane
Author(s): Chibane, Lemnouer; Djellouli, Brahim
Source: CHINESE JOURNAL OF CHEMICAL ENGINEERING Volume: 20 Issue: 3 Pages: 577-588 Published: JUN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

The partial oxidation of methane under periodic operation over Ni/gamma-Al2O3 catalyst was investigated in a Pd-membrane reactor. The effects of key parameters such as the inlet composition and the sweeping gas on methane conversion and the hydrogen recovery are numerically established with two periodic input functions. In order to analyze the effect of the inputs modulation, the reaction was performed under low steam to methane ratio at a moderate temperature and pressure. It was obtained that to achieve process intensification is to operate the process in a periodic way. The main results show that the periodic input functions can improve the performance of the process compared to the optimal steady state operation. Moreover, there is an optimum amplitude of manipulated inputs leads to a maximum of hydrogen recovery. It is noteworthy that the comparison between the predicted performance via the sinusoidal and the square ways show that the better average performance was obtained with the square way.

48.

Title: EPIDEMIOLOGY OF GALLBLADDER CANCER IN ALGERIA

Author(s): Zoubida, Zaidi; Djamel, Abdellouche

Conference: 14th World Congress on Gastrointestinal Cancer of the European-Society-for-Medical-Oncology (ESMO) Location: Barcelona, SPAIN Date: JUN 27-30, 2012

Sponsor(s): European Soc Med Oncol (ESMO)

Source: ANNALS OF ONCOLOGY Volume: 23 Supplement: 4 Pages: 78-78 Published: JUN 2012

Times Cited: 0 (from All Databases)

49.

Title: Secure DV-Hop localization scheme against wormhole attacks in wireless sensor networks

Author(s): Labraoui, Nabila; Gueroui, Mourad; Aliouat, Makhlouf

Source: TRANSACTIONS ON EMERGING TELECOMMUNICATIONS TECHNOLOGIES Volume: 23 Issue: 4 Pages: 303-316 DOI: 10.1002/ett.1532 Published: JUN 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

Localization is an important topic in mobile wireless ad hoc and sensor networks, which has received considerable attention from the research community during the past few decades. In many sensor networks applications, location awareness is useful or even necessary. However, because of their key role in wireless sensor networks, localization systems can be the target of an attack that could compromise the entire functioning of a wireless sensor network. In this paper, we present a novel defense mechanism against wormhole attacks in DV-Hop localization algorithm. The main idea of our approach is to plug in a proactive countermeasure to the basic DV-Hop scheme called Infection prevention. We choose the wormhole attack as our defending target because it is a particularly challenging attack that can be successfully launched without compromising any nodes or having access to any cryptographic keys. Using analysis and simulation, we show that our solution is effective in detecting and defending against wormhole attacks with a high detection rate. Copyright (c) 2011 John Wiley & Sons, Ltd.

50.

Title: Hybrid Moment/Position Control of a Parallel Robot

Author(s): Daachi, Mohamed El Hossine; Achili, Brahim; Daachi, Boubaker; et al.

Source: INTERNATIONAL JOURNAL OF CONTROL AUTOMATION AND SYSTEMS Volume: 10 Issue: 3 Pages: 536-546 DOI: 10.1007/s12555-012-0310-z Published: JUN 2012

Times Cited: 0 (from All Databases)

[Hide abstract]

In this paper, a hybrid moment/position controller in task space is proposed for tasks involving a contact between a robot and its environment. We consider a contour-tracking task performed by a six DOF (Degrees Of Freedom) parallel robot. The task space dynamic model of the robot in contact with its environment, seen as a black box, is estimated by a MLP-NN (Multi Layer Perceptron Neural Network). The neural network non-linearity is treated using Taylor series expansion. An adaptation algorithm of the neural parameters resulting from a closed-loop stability analysis is

proposed. The performance of the proposed controller is validated on the C5 parallel robot by considering two different environments: rigid and compliant.

Title: On the Quantization of One-Dimensional Nonstationary Coulomb Potential System
Author(s): Menouar, Salah; Maamache, Mustapha; Choi, Jeong Ryeol; et al.
Source: JOURNAL OF THE PHYSICAL SOCIETY OF JAPAN Volume: 81 Issue: 6 Article Number: 064003 DOI: 10.1143/JPSJ.81.064003 Published: JUN 2012
Times Cited: 0 (from All Databases)

51.
[Hide abstract]
Exact solutions of the one-dimensional Schrodinger equation with a time-dependent Coulomb potential [-z(t)/|x|] are investigated using the invariant method (Lewis and Riesenfeld theorem) together with unitary transformation approach. The eigenfunctions and the corresponding eigenvalues of the system are obtained analytically. When the time dependence of all coefficients vanishes, our results exactly reduce to those known for stationary case.
52.
Title: Effect of Water Corrosion on Cracks and Vickers Imprints in Glass
Author(s): Benbahouche, Saci; Brient, Antoine; Rouxel, Tanguy; et al.
Source: INTERNATIONAL JOURNAL OF FRACTURE Volume: 175 Issue: 2 Pages: 199-206 DOI: 10.1007/s10704-012-9712-4 Published: JUN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Erosion and corrosion result in potential material loss. The erosion is a physical phenomenon but corrosion is chemical one. The study of these two phenomena, as functions of time and temperature, would lead to a better understanding of glass surface damage.
Results allow one to determine the effects of immersion time, temperature of the water bath and residual stresses generated by Vickers indentation on the radial crack and topography of the imprint on the surface of a soda-lime silica glass. Water corrosion effects are different at the imprint corner and the radial crack tip as compared to edges and faces.
53.
Title: A population-based iterated greedy algorithm for the minimum weight vertex cover problem
Author(s): Bouamama, Salim; Blum, Christian; Boukerram, Abdellah
Source: APPLIED SOFT COMPUTING Volume: 12 Issue: 6 Pages: 1632-1639 DOI: 10.1016/j.asoc.2012.02.013 Published: JUN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Given an undirected, vertex-weighted graph, the goal of the minimum weight vertex cover problem is to find a subset of the vertices of the graph such that the subset is a vertex cover and the sum of the weights of its vertices is minimal. This problem is known to be NP-hard and no efficient algorithm is known to solve it to optimality. Therefore, most existing techniques are based on heuristics for providing approximate solutions in a reasonable computation time.
Population-based search approaches have shown to be effective for solving a multitude of combinatorial optimization problems. Their advantage can be identified as their ability to find areas of the space containing high quality solutions. This paper proposes a simple and efficient population-based iterated greedy algorithm for tackling the minimum weight vertex cover problem. At each iteration, a population of solutions is established and refined using a fast randomized iterated greedy heuristic based on successive phases of destruction and reconstruction. An extensive experimental evaluation on a commonly used set of benchmark instances shows that our algorithm outperforms current state-of-the-art approaches. (C) 2012 Elsevier B. V. All rights reserved.
54.
Title: Full-wave modeling of superconducting microstrip lines including the nonlinearity behavior
Author(s): Mayouf, A.; Mayouf, F.; Djahli, F.; et al.

Source: PHYSICA C-SUPERCONDUCTIVITY AND ITS APPLICATIONS Volume: 476 Pages: 15-18 DOI: 10.1016/j.physc.2012.02.002 Published: JUN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
This paper describes a new theoretical model to characterize the superconducting microstrip line and carefully studies the effects of the nonlinearity of superconductors, the strip thickness and losses on circuit performances. The microstrip line has been considered as a multilayered structure. The integral equation for the electrical field has been formulated, in the spectral domain, using the exact dyadic Green's function of bianisotropic planar media. The Galerkin's technique has been used for solving this integral equation. Obtained results concern the effective permittivity constant and the attenuation constant versus frequency and temperature rate. (C) 2012 Elsevier B. V. All rights reserved.

55.
Title: PbSO4 as a precursor for positive active material electrodes
Author(s): Foudia, M.; Matrakova, M.; Zerroual, L.
Conference: 8th International Conference on Lead-Acid Batteries (LABAT) Location: BULGARIA Date: JUN 07-10, 2011
Source: JOURNAL OF POWER SOURCES Volume: 207 Pages: 51-55 DOI: 10.1016/j.jpowsour.2012.01.075 Published: JUN 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The present work investigates the use of PbSO4 as a precursor for positive active material (PAM) electrodes. Lead sulphate was prepared by the chemical precipitation of a lead nitrate solution in the presence of sodium sulphate. Tubular electrodes were filled with PbSO4 and oxidized in solutions with different pH. The study is based on X-ray diffraction analysis (XRD), Thermogravimetry (TG), Differential scanning calorimetry (DSC) and Scanning electronic microscopy (SEM). The capacity of the different PAM electrodes was also determined. The results show that the pH of the electrolyte affects significantly the average crystallite size, phase composition and PAM capacity. (C) 2012 Elsevier B.V. All rights reserved.

56.
Title: Ab initio study of some fundamental physical properties of the cubic inverse-perovskite Mn3ZnC and Mn3GeC
Author(s): Bouhemadou, A.; Ghebouli, M. A.; Ugur, G.; et al.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 58 Pages: 162-166 DOI: 10.1016/j.commatsci.2012.01.030 Published: JUN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Structural, elastic, electronic and magnetic properties of Mn3ZnC and Mn3GeC are investigated via ab initio calculations. Total energy calculations show that the ferromagnetic state is energetically more stable than the non-magnetic state at equilibrium volume. No found imaginary phonon frequency in the whole Brillouin zone for the two compounds supports their dynamical stability. The elastic parameters are predicted. The electrical conductivity is assured by the Mn-d electrons. The total moment comes principally from the transition metal Mn in both compounds. The magnetic moment of the Mn atom decrease considerably when the Zn atom is substituted by the Ge one. (C) 2012 Elsevier B.V. All rights reserved.

57.
Title: Gaussian laser beam tailoring using acoustooptic cell
Author(s): Bencheikh, Abdelhalim; Ferria, Kouider
Source: OPTICS AND LASER TECHNOLOGY Volume: 44 Issue: 4 Pages: 806-809 DOI: 10.1016/j.optlastec.2011.11.026 Published: JUN 2012

Times Cited: 0 (from All Databases)

[Hide abstract]
Profile shaping of a Gaussian laser beam by an acoustic wave is well described using Collins integral and ABCD matrix formalism. It is shown by a numerical simulation that the relative width of the laser beam to the ultrasonic wavelength and the acoustic pressure inside the acoustooptic cell act on the light intensity diffraction pattern.
Obtained results show that the output intensity profile differs from the incident Gaussian beam shape, and it is more broadened with an increase in the acoustic pressure. The intensity of a focused laser beam is transformed in a flat form in the central region if the acoustic pressure is proprely controlled.
On the other hand the intensity longitudinal range (ILR) of the flat shape is discussed along the propagation axes, we have found the ILR is about 2 mm for a focal length distance f=100 mm. (C) 2011 Elsevier Ltd. All rights reserved.

58.
Title: Clinical, diagnostic and Cryptococcosis neuromeningees evolutionary aspects in HIV infection
Author(s): Mounira, Rais; Ouyahia, Amel; Gasmi, Abedelkader; et al.
Source: RETROVIROLOGY Volume: 9 Supplement: 1 Article Number: P149 DOI: 10.1186/1742-4690-9-S1-P149 Published: MAY 25 2012
Times Cited: 0 (from All Databases)

59.
Title: Synthesis and adsorption properties, toward some heavy metal ions, of a new polystyrene-based terpyridine polymer
Author(s): Saadeh, Haythem A.; Abu Shairah, Eman A.; Charef, Noureddine; et al.
Source: JOURNAL OF APPLIED POLYMER SCIENCE Volume: 124 Issue: 4 Pages: 2717-2724 DOI: 10.1002/app.34977 Published: MAY 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A novel polymeric ligand having 2,2':6',2-terpyridine as pendant group was prepared through a Williamson type etherification approach for the reaction between 4'-hydroxy-2,2': 6',2-terpyridine and the commercially available 4-chloromethyl polystyrene. The chelating properties of the new polymer toward the divalent metal ions (Cu2+, Zn2+, Ni2+, and Pb2+) in aqueous solutions was studied by a batch equilibration technique as a function of contact time, pH, mass of resin, and concentration of metal ions. The amount of metal-ion uptake of the polymer was determined by using atomic absorption spectrometry. Results of the study revealed that the resin exhibited higher capacities and a more pronounced adsorption toward Pb2+ and that the metal-ion uptake follows the order: Pb2+ > Cu2+ > Zn2+ > Ni2+. The adsorption and binding capacity of the resin toward the various metal ions investigated are discussed. (C) 2011 Wiley Periodicals, Inc. J Appl Polym Sci, 2012

60.
Title: Study of iPP crosslinking by means of dynamic and steady rheology measurements
Author(s): Khellaf, S.; Khoffi, F.; Tabet, H.; et al.
Source: JOURNAL OF APPLIED POLYMER SCIENCE Volume: 124 Issue: 4 Pages: 3184-3191 DOI: 10.1002/app.34996 Published: MAY 15 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
The crosslinking of isotactic polypropylene (iPP) using crosslinking agents (CAs) based on a peroxide/sulfur/accelerator system is a very attractive new method that has been reported recently. The present work deals with the study of the dynamic rheological behavior of iPP during and after the crosslinking process. The influence of the CA concentration and the processing temperature T on the rheological behavior of the iPP was analyzed. The kinetics of the crosslinking reaction was established using the technique described by G. A. Harpell and D. H. Walrod. This reaction is found to be of order one. At T = 180 degrees C, the crosslinking reaction was faster. By varying the

crosslinking agent content, different crosslinking degrees of iPP, expressed by the corresponding gel content, are achieved. On the other hand, the modified polypropylene exhibits an unexpected viscosity-shear rate pattern, which describes the reverse crosslinking reaction mainly occurring by the opening of the bridges of the new interpenetrating network (IPN) formed. (C) 2011 Wiley Periodicals, Inc. J Appl Polym Sci, 2012

61. **Title: Preserving log-convexity for generalized Pascal triangles**
Author(s): Ahmia, Moussa; Belbachir, Hacene
Source: ELECTRONIC JOURNAL OF COMBINATORICS Volume: 19 Issue: 2 Article Number: P16 Published: MAY 4 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We establish the preserving log-convexity property for the generalized Pascal triangles. It is an extension of a result of H. Davenport and G. Polya "On the product of two power series", who proved that the binomial convolution of two log-convex sequences is log-convex.

62. **Title: Structural, mechanical and electronic properties of transition metal hydrides MH2 (M = Ti, Zr, Hf, Sc, Y, La, V and Cr)**
Author(s): Chihi, T.; Fatmi, M.; Bouhemadou, A.
Source: SOLID STATE SCIENCES Volume: 14 Issue: 5 Pages: 583-586 DOI: 10.1016/j.solidstatesciences.2012.02.010 Published: MAY 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
First-principles calculations have been carried out to investigate the structural, mechanic and electronic of transition metal hydrides MH2 (M = Ti, Zr, Hf, Sc, Y, La, V and Cr). It is found that TiH2 is mechanically unstable because of a negative C-44 = -21.31 GPa and C-11-C-12 < 0, the same behavior can be found in MH2 (M = Zr, Hf, and Y) compounds. Also there is a strong interaction between M (Ti, Zr, Hf, Sc, Y, La, V and Cr) and H. On the other hand, the H-H bond orders are always negative or nil reason of brittleness. (C) 2012 Elsevier Masson SAS. All rights reserved.

63. **Title: A new approach for load flow analysis of integrated AC-DC power systems using sequential modified Gauss-Seidel methods**
Author(s): Messalti, Sabir; Belkhiat, Saad; Saadate, Shahrokh; et al.
Source: EUROPEAN TRANSACTIONS ON ELECTRICAL POWER Volume: 22 Issue: 4 Pages: 421-432 DOI: 10.1002/etep.570 Published: MAY 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The paper describes a new approach for the load flow calculations of integrated ACDC system. A simple and reliable method for sequential modified Gauss and GaussSeidel power flow for ACDC system is developed. This approach is based on applying nodal injection theory at all buses. The DC system is treated by the current injected to the buses where it is connected and its effect is reflected at internal buses by additional power injection. Iterations between AC and DC power flow algorithms are made to match boundary conditions between the two systems. In this approach, the active and reactive power and the AC voltages at the converter buses are considered as the interface between the AC and DC equations in each iteration step. The combined ACDC equations are solved separately using sequential modified Gauss and GaussSeidel methods. The developed algorithm to solve the ACDC power flow has been tested on the IEEE 9-bus test system. Copyright (c) 2011 John Wiley & Sons, Ltd.

64. **Title: Analytical formulas for calculation of K X-ray production cross sections by alpha ions**
Author(s): Abdellatif, A.; Kahoul, A.; Deghfel, B.; et al.
Source: RADIATION PHYSICS AND CHEMISTRY Volume: 81 Issue: 5 Pages: 499-505 DOI: 10.1016/j.radphyschem.2011.12.036 Published: MAY 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In the present study, different procedures are followed to deduce the semi-empirical and the empirical K X-rayX-ray production cross sections induced by alpha ions from the available experimental data and the theoretical results of the ECPSSR model for elements with 20 <= Z <= 30. The deduced K X-ray production cross sections are compared with predictions from ECPSSR model and with other earlier works. Generally, the deduced K X-ray production cross sections obtained by fitting the available experimental data for each element separately give the most reliable values than those obtained by a global fit. (C) 2012 Elsevier Ltd. All rights reserved.

65. Title: Prostaglandin E-2 induced contraction of human intercostal arteries is mediated by the EP3 receptor
Author(s): Longrois, Dan; Gomez, Ingrid; Foudi, Nabil; et al.
Source: EUROPEAN JOURNAL OF PHARMACOLOGY Volume: 681 Issue: 1-3 Pages: 55-59 DOI: 10.1016/j.ejphar.2012.01.041 Published: APR 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Arterial vascularization of the spinal cord may be mechanically or functionally altered during thoracoabdominal surgery/ intravascular procedures. Increased arterial pressure has been shown to restore spinal perfusion and function probably by increasing the blood flow through the intercostal arteries. The regulation of human intercostal artery (HICA) vascular tone is not well documented. Prostaglandin (PG) E-2 concentration is increased during inflammatory conditions and has been shown to regulate vascular tone in many preparations. In this context, the pharmacological response of HICA to PGE2 and the characterization of the PGE(2) receptor subtypes (EP1, EP2, EP3 or EP4) involved are of importance and that is the aim of this study. Rings of HICA were prepared from 29 patients and suspended in organ baths for isometric recording of tension. Cumulative concentration-response curves were performed in these preparations with various EP receptor agonists in the absence or presence of different receptor antagonists or inhibitors. PGE(2) induced the contraction of HICA (E-max=7.28 +/- 0.16 g; pEC(50) value=0.79 +/- 0.18; n=17); contractions were also observed with the EP3 receptor agonists, sulprostone, 17-phenyl-PGE(2), misoprostol or ONO-AE-248. In conclusion, PGE(2) induced vasoconstriction of HICA via EP3 receptor subtypes and this result was confirmed by the use of selective EP receptor antagonists (L-826266, ONO-8713, SC-51322) and by a strong detection of EP3 mRNA. These observations suggest that in the context of perioperative inflammation, increased PGE2 concentrations could trigger vasoconstriction of HICA and possibly alter spinal vascularization. (C) 2012 Elsevier B.V. All rights reserved.

66. Title: Removal of methyl orange from aqueous solution by uncalcined and calcined MgNiAl layered double hydroxides (LDHs)
Author(s): Zaghouane-Boudiaf, Hassina; Boutahala, Mokhtar; Arab, Loubna
Source: CHEMICAL ENGINEERING JOURNAL Volume: 187 Pages: 142-149 DOI: 10.1016/j.cej.2012.01.112 Published: APR 1 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
In this study, both uncalcined (MgNiAl-CO3) and calcined (MgNiAl-C) hythotalcites were used in the adsorption of methyl orange (MO) from aqueous solution as an anionic dye in a batch system. Various conditions such as initial dye concentration, adsorbent dosage, contact time, solution pH, and temperature were investigated. The adsorption kinetics was studied using classic equations of pseudo-first-order, -second-order and intraparticle diffusion models. The dynamical data fit well with the pseudo-second-order kinetic model. The positive value of

the changes in enthalpy (Delta H degrees), the negative value of Gibbs free energy (Delta G degrees), showed that the adsorption is endothermic and spontaneous for all the studied temperatures. The equilibrium adsorption data were analyzed using three non linear adsorption models: Langmuir, Freundlich and Redlich-Peterson. The results showed that Langmuir and Redlich-Peterson isotherms fit the experimental results very well with high correlation coefficients. The Langmuir isotherm model exhibited a maximum adsorption capacity q(max) of 375 mg/g for the calcined MgNiAl-C. This result is of practical interest, with respect to the selection of sorbents, to optimize aquatic environment remediation technologies. (C) 2012 Elsevier B.V. All rights reserved.

67. **Title: Simulation of multimodal vibration damping of a plate structure using a modal SSDI-Max technique**
Author(s): Cherif, Aida; Richard, Claude; Guyomar, Daniel; et al.
Source: JOURNAL OF INTELLIGENT MATERIAL SYSTEMS AND STRUCTURES Volume: 23 Issue: 6 Pages: 675-689 DOI: 10.1177/1045389X12437891 Published: APR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Modal synchronized switch damping on inductor control is a vibration damping technique that combines the advantages of both semiactive and active control techniques based on a modal strategy. This method allows targeting any unwanted vibration mode of a structure while using a semiactive autonomous synchronized switch damping on inductor damping technique. This article presents a performance analysis of an improved modal synchronized switch damping on inductor approach called "SSDI-Max." The particularity of this new approach is to maximize the self-generated voltage amplitude by a proper definition of the switch instants (voltage inversion) according to the chosen targeted mode. Following the basic modal synchronized switch damping on inductor technique, the switch is synchronized with the chosen modal coordinate extremum. In the investigated approach, the voltage is increased by waiting for the next voltage extremum following immediately any targeted modal coordinate extremum in a given time window. This article presents simulations performed on a model representative of a clamped plate. The damping results are given in the case of multimodal, pulse, or noise excitations. This article analyzes the performance of the observer used to focus on a given mode and the influence of the control time window on the damping performance of the system. The results show that substantial damping increase can be obtained with a very slight modification of the control architecture and the same control energy.

68. **Title: Influence of annealing on the structural properties of evaporated CoxCr1-x/Si(100) and CoxCr1-x/glass thin films**
Author(s): Djouada, I.; Kharmouche, A.; Schmerber, G.
Source: EUROPEAN PHYSICAL JOURNAL-APPLIED PHYSICS Volume: 58 Issue: 1 Article Number: 10301 DOI: 10.1051/epjap/2012110391 Published: APR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Series of CoxCr1-x thin films have been evaporated under vacuum onto Si(1 0 0) and glass substrates, x ranging from 0.80 to 0.88; these chemical composition values are provided by modeling Rutherford Backscattering (RBS) spectra using SIMNRA program. Thickness ranges from 17 to 220 nm. Microscopic characterizations of the films have been performed with X-ray diffraction (XRD) measurements. The samples have been annealed for 1 h at 700 degrees C. All the as deposited samples are polycrystalline, with an hcp structure and show a < 0 0 0 1 > preferred orientation. The annealed samples, on the contrary, present hcp and fcc phases. The as deposited films are under a compressive stress while the annealed films are under a tensile stress. Grain sizes increase with chromium content decrease and are higher for the annealed films. Excellent orientations of the CoCr crystallites around the normal to the

film plane have been observed, the full width at half maximum (FWHM) ranging from 0.49 degrees to 0.79 degrees.

69. **Title: A new sol-gel synthesis of Mn3O4 oxide and its electrochemical behavior in alkaline medium**
Author(s): Naamoune, Farid; Messaoudi, Bouzid; Kahoul, Abdelkrim; et al.
Source: IONICS Volume: 18 Issue: 4 Pages: 365-370 DOI: 10.1007/s11581-011-0621-8 Published: APR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this investigation, Mn3O4 spinel-type oxide was synthesized at low temperature using the Pechini process. We employed a sol-gel route, in which a solution of Mn(II) in a mixture of citric acid and ethylene glycol was heated to form a polymeric precursor, followed by annealing at lower temperature. The oxide obtained was identified by X-ray diffraction, scanning electron spectroscopy, and Raman spectroscopy. The results revealed that the formation of Mn3O4 hausmannite structure with a minor secondary phase of MnSO4 occurred at or above 280 A degrees C. The sample powder consisted of fine grains with homogeneous morphology and an average size close to 1 mu m was obtained. This new preparation procedure yielded an electrode oxide which appears to be a promising cathode material for fuel cells and metal-air batteries.

70. **Title: The influence of pH electrolyte on the electrochemical deposition and properties of nickel thin films**
Author(s): Boubatra, Mustapha; Azizi, Amor; Schmerber, Guy; et al.
Source: IONICS Volume: 18 Issue: 4 Pages: 425-432 DOI: 10.1007/s11581-011-0642-3 Published: APR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Ni thin films were electrodeposited on gold substrate from chloride solution with different pH at room temperature. The effect of electrolyte pH on Ni coatings was studied by using the cyclic voltammetry, the scanning electron microscopy (SEM), x-ray diffraction, and alternating gradient force magnetometer measurements. From electrochemical measurements, the onset potential for reduction of Ni was gradually shifted towards more cathodic scan with increase in pH; this is due to the protons in the case of low pH values and to the hydroxide ions in the case of higher pH values. The SEM study showed that a granular and compact structure of the electrodeposited Ni layers and the variation of film morphology with bath pH are established. The x-ray diffraction spectra revealed the formation of fcc structure Ni thin films with a preferential orientation along the Ni(111). The size of the deposited crystals in both the cases has been found to be in the range of 49-153 nm. Magnetic properties such as coercivity and saturation magnetization showed strong dependence on the electrolyte solution pH and consequently the crystallite size. Coercivity higher than 130-160 Oe was achieved for a pH value of 4 to 5. The differences observed in the magnetic properties were attributed to the structural changes caused by the electrolyte pH.

71. **Title: On-line robust nonlinear state estimators for nonlinear bioprocess systems**
Author(s): Iratni, A.; Katebi, R.; Mostefai, M.
Source: COMMUNICATIONS IN NONLINEAR SCIENCE AND NUMERICAL SIMULATION Volume: 17 Issue: 4 Pages: 1739-1752 DOI: 10.1016/j.cnsns.2011.09.032 Published: APR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
This paper presents the design of a new robust nonlinear estimator for estimation of states of nonlinear systems. Two approaches are considered based on the state-dependent Riccati equation formulation and the technique of H-infinity control design. The proposed method

differs from other well-known state estimators, because not only nonlinear dynamics but also the robustness is taken into account. The proposed method is implemented and tested on a biological wastewater system. The simulation study compares the Extended Kalman Estimator (EKE), the State-Dependent Riccati Estimator (SDRE), and the Extended H-infinity Estimator (EHE) with a new proposed State Dependent H-infinity Estimator (SDHE). The results are compared for different weather conditions, i.e. dry, rain and storm, showing a superior performance of the proposed method. (C) 2011 Elsevier B.V. All rights reserved.

72. **Title: Xe irradiation-induced defects in CuInSe2 by phase resolved photoacoustic spectroscopy**
Author(s): Satour, F. Z.; Zegadi, A.
Source: MATERIALS SCIENCE AND ENGINEERING B-ADVANCED FUNCTIONAL SOLID-STATE MATERIALS Volume: 177 Issue: 5 Pages: 436-440 DOI: 10.1016/j.mseb.2012.01.018 Published: MAR 25 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We report a study on the optical properties of 40 keV Xe+ implants with a dose of 5 x 10(16) ions/cm(2) into p-type conducting CuInSe2 single crystals using the phase resolved method of the photoacoustic spectroscopy (PAS) technique. Photoacoustic spectra have been measured in the photon energy range 0.7 < hv < 1.4 eV prior and after implantation at various phase angles using a high resolution fully computerized spectrometer. Once the spectra separation is carried out, an analysis on the impact of Xe+ on the defect structure of CuInSe2 is presented. The results obtained here are discussed in the light of current reported literature. (C) 2012 Elsevier B.V. All rights reserved.

73. **Title: Non-adiabatic quantum evolution: The S matrix as a geometrical phase factor**
Author(s): Saadi, Y.; Maamache, M.
Source: PHYSICS LETTERS A Volume: 376 Issue: 16 Pages: 1328-1334 DOI: 10.1016/j.physleta.2012.02.054 Published: MAR 19 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We present a complete derivation of the exact evolution of quantum mechanics for the case when the underlying spectrum is continuous. We base our discussion on the use of the Weyl eigendifferentials. We show that a quantum system being in an eigenstate of an invariant will remain in the subspace generated by the eigenstates of the invariant, thereby acquiring a generalized non-adiabatic or Aharonov-Anandan geometric phase linked to the diagonal element of the S matrix. The modified Pischl-Teller potential and the time-dependent linear potential are worked out as illustrations. (C) 2012 Elsevier B.V. All rights reserved.

74. **Title: Efficiency of the entomopathogenic fungus Verticillium lecanii in the biological control of Trialeurodes vaporariorum, (Homoptera: Aleyrodidae), a greenhouse culture pest**
Author(s): Bouhous, Mostefa; Larous, Larbi
Source: AFRICAN JOURNAL OF MICROBIOLOGY RESEARCH Volume: 6 Issue: 10 Pages: 2435-2442 DOI: 10.5897/AJMR11.1502 Published: MAR 16 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Our investigation in the region of Jijel revealed that whiteflies are the predominant greenhouses pests; they are polyphagous, moreover, some species can transmit many plant viruses. The treatment method is based on the systematic use of insecticides that have side effects on both the consumer and the farmer. The objective of this study was to evaluate the use of biological control in situ and in vitro as an alternative method by using an entomopathogenic fungus Verticillium lecanii. In vitro experiments showed that the fungus

was active during all stages of development of the insect, Trialeurodes vaporariorum Westwood (Homoptera: Aleyrodidae): Eggs (LD50 = 0.59. 10(7) spores / ml) larvae (LD50 = 0.5. 10(3) spores / ml) and adults. Our results showed the influence of spore concentration, contact time and relative humidity on the development of the parasite to reach an efficient anti-larval effect of 100%.

75. **Title: Nutritional Factors, Homocysteine and C677T Polymorphism of the Methylenetetrahydrofolate Reductase Gene in Algerian Subjects with Cardiovascular Disease**
Author(s): Houcher, Zahira; Houcher, Bakhouche; Touabti, Abderrezak; et al.
Source: PTERIDINES Volume: 23 Issue: 1 Pages: 14-21 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

The C677T variant of methylenetetrahydrofolate reductase (MTHFR), a key enzyme in the remethylation of homocysteine (HCY) to methionine, is a frequent genetic cause of moderate hyperhomocysteinemia (HHCY) among individuals with cardiovascular disease (CVD), and particularly when combined with other factors such as hyperlipidaemia. However, in Algeria the influence of nutrient-gene interactions is not known. The aim of the present study was to explore the influence of age and gender, together with folate status, on the association between the C677T MTHFR polymorphism and plasma total HCY (tHCY) concentrations. This research was carried out as a prospective study on 98 patients hospitalized in the Cardiology Section, University of Setif, Algeria. Mean age of participants was 57 y (range 20-96 y). The genetic analysis of the MTHFR C677T polymorphism was performed by real-time polymerase chain reaction (PCR) performed on Light Cycler in borosilicate capillaries with MTHFR 677CT polymorphism detection kit. The concentrations of tHCY, folic acid vitamin B-12 levels were determined using a competitive immunoassay on the IMMULITE 1000 Analyzers. Plasma total cholesterol, triglycerides, glucose, creatinine and urea concentrations were measured by colorimetric methods. Assays were conducted according to the manufacturers' instructions. Plasma tHCY was significantly higher in the patients with CVD, and HHCY was associated with the presence of mildly elevated serum urea and creatinine ($p < 0.05$). MTHFR gene mutation does not seem to be associated with elevation of plasma tHCY in the studied patients and this lack of correlation could be influenced by the higher folate concentrations in our study. CVD patients with 677CT/TT genotypes had a higher concentration of total cholesterol than those with 677CC genotype ($p < 0.05$). Although, the presence of 677T variant together with hypofolatemia (<15.4 ng/ml) had a more detrimental effect on the level of total cholesterol ($p < 0.05$). Folatemia and vitamin B-12 were much higher in 677CC genotype compared to 677CT/TT genotype in CVD subjects without hyperlipidemia ($p < 0.05$). However in patients with hyperlipidemia these values became lower also with 677CC genotype. In conclusion, hyperlipidemia affects the levels of plasma folate and vitamin B-12 concentrations independent of mutated MTHFR genotype. The effect of 677T variant on total cholesterol, folate and vitamin B-12 concentrations may relate to possible adverse effects of elevated tHCY on lipid profiles and on plasma folate and vitamin B-12.

76. **Title: Influence of organic additives on electrodeposition of Co-Cu alloys from sulphate bath**
Author(s): Mentar, L.; Khelladi, M. R.; Azizi, A.; et al.
Source: TRANSACTIONS OF THE INSTITUTE OF METAL FINISHING Volume: 90 Issue: 2 Pages: 98-104 DOI: 10.1179/0020296712Z.0000000008 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

In this work, the authors report on the influence of additives on the onset of deposition, the current efficiency (CE) and the nucleation growth mechanism of Co-Cu alloys electrodeposited on n-Si(100) substrate from sulphate solution with an addition of sodium citrate (SC) and citric acid (CA). The study was carried out by means of cyclic voltammetry, chronoamperometry methods using the Scharifker-Hills model for the determination of nucleation and growth mechanism and some kinetic parameters for nucleation. The CV curves indicate that the deposition potential of Cu(II) is shifted to more negative potentials

while additive anion is added in the solution. Also, the results show that the additives do not improve the CE. For all baths, electrodeposited Co-Cu alloy follows instantaneous nucleation and three-dimensional (3D) diffusion limited growth. The nucleation density in the solutions without additive and with SC increases exponentially with the potential whereas in solution containing CA additive, it is no longer possible to consider exponential increase, indicating the existence of a reaction in addition to the 3D nucleation mechanism in the Co-Cu electrodeposition process.

77. **Title: ISOLATION, IDENTIFICATION AND ANTIMICROBIAL ACTIVITY OF PSEUDOMONADS ISOLATED FROM THE RHIZOSPHERE OF POTATOES GROWING IN ALGERIA**
Author(s): Mezaache-Aichour, S.; Gueehi, A.; Nicklin, J.; et al.
Source: JOURNAL OF PLANT PATHOLOGY Volume: 94 Issue: 1 Pages: 89-98 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Fourteen bacterial isolates from the rhizosphere of potato plants growing near Setif, (Algeria) were characterised as fluorescent Pseudomonads by phenotypical methods and one was identified as Pseudomonas chlororaphis by sequencing ribosomal DNA. In dual culture, this isolate inhibited the growth of the phytopathogenic fungi Fusarium oxysporum f. sp. lycopersici, E oxysporum f. sp. albedinis, F. solani and Rhizoctonia solani and the oomycete Pythium ultimum. Extracts of supernatants from liquid cultures of the Ps. chlororaphis isolate completely inhibited these organisms when incorporated into potato dextrose agar at a rate equivalent to 0.31 ml culture filtrate/ml, or greater. In a disc assay, extracts equivalent to 0.31 ml supernatant gave inhibition zones of 15 mm and 25 mm for the Gram-positive bacteria Bacillus subtilis and Paracoccus paratrophus, respectively. Fractionation of extracts of supernatants by TLC and HPLC with diode array detection allowed the identification of phenazine carboxylic acid as one of the antimicrobial compounds and the tentative identification of two others as 2-hydroxy phenazine carboxylic acid and 2-hydroxy phenazine.

78. **Title: Evaluation of springback under the effect of holding force and die radius in a stretch bending test**
Author(s): Ouakdi, E. H.; Louahdi, R.; Khirani, D.; et al.
Source: MATERIALS & DESIGN Volume: 35 Pages: 106-112 DOI: 10.1016/j.matdes.2011.09.003 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work, we evaluate springback using U-form stretch bending tests. Tests are carried out on aluminum alloy test pieces using an experimental set up made in our laboratory. This apparatus can be mounted on a tensile testing machine and gives the possibility to vary several parameters. We show the role played by certain factors such as die radius of curvature, blank holding force (BHF) and stretching depth. Springback and sliding at extremities are strongly influenced by these technological and geometrical parameters. In this work we also show the gradual decrease of springback with the increase of stretching depth. The radius of curvature of the die can remarkably influence the two stages of springback. (C) 2011 Elsevier Ltd. All rights reserved.

79. **Title: Theory study of structural parameters, elastic stiffness, electronic structures and lattice dynamics of RBRh3 (R = Sc, Y, La and Lu)**
Author(s): Bouhemadou, A.; Ugur, G.; Ugur, S.; et al.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 54 Pages: 336-344 DOI: 10.1016/j.commatsci.2011.10.029 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Density functional-based method has been used to investigate the systematic trends for structural parameters, elastic stiffness, lattice dynamics and thermal properties of cubic perovskite-type RBRh3 depending on the type of R atoms (R are Sc, Y, La and Lu). The structural parameters, single-crystal elastic constants, directional elastic wave velocities and their pressure dependence are calculated and analyzed in comparison with the available experimental and theoretical data. A set of isotropic elastic parameters and related properties, namely bulk and shear moduli, Young's modulus, Poisson's ratio, Lame's coefficients, average sound velocity. Debye temperature and thermal conductivity are predicted in the frame work of the Voigt-Reuss-Hill approximation for the polycrystalline RBRh3. The correlation between the mechanical properties and electronic structures has been discussed. Using the density-functional perturbation theory (DFPT), the phonon properties of RBRh3 (R = Sc, Y and La) are investigated for the first time. (C) 2011 Elsevier B.V. All rights reserved.

80. Title: Elastic, electronic and thermodynamic properties of fluoro-perovskite KZnF3 via first-principles calculations
Author(s): Seddik, T.; Khenata, R.; Merabiha, O.; et al.
Source: APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING Volume: 106 Issue: 3 Pages: 645-653 DOI: 10.1007/s00339-011-6643-2 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The elastic, electronic and thermodynamic properties of fluoro-perovskite KZnF3 have been calculated using the full-potential linearized augmented plane wave (FP-LAPW) method. The exchange-correlation potential is treated with the generalized gradient approximation of Perdew-Burke-Ernzerhof (GGA-PBE). Also, we have used the Engel and Vosko GGA formalism (GGA-EV) to improve the electronic band structure calculations. The calculated structural properties are in good agreement with available experimental and theoretical data. The elastic constants C (ij) are calculated using the total energy variation with strain technique. The shear modulus, Young's modulus, Poisson's ratio and the Lam, coefficients for polycrystalline KZnF3 aggregates are estimated in the framework of the Voigt-Reuss-Hill approximations. The ductility behavior of this compound is interpreted via the calculated elastic constants C (ij) . Electronic and bonding properties are discussed from the calculations of band structure, density of states and electron charge density. The thermodynamic properties are predicted through the quasi-harmonic Debye model, in which the lattice vibrations are taken into account. The variation of bulk modulus, lattice constant, heat capacities and the Debye temperature with pressure and temperature are successfully obtained.

81. Title: Optimal feeding profile for a fuzzy logic controller in a bioreactors using genetic algorithm
Author(s): Mokeddem, D.; Khellaf, A.
Source: NONLINEAR DYNAMICS Volume: 67 Issue: 4 Pages: 2835-2845 DOI: 10.1007/s11071-011-0192-2 Published: MAR 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The ultimate objective of any control strategy is to maximize productivity, and improve the quantity of products and reduce costs. The performance of a bioprocess operating in fed batch production of protein can be obtained in two steps. First, we determine the optimal trajectories (profiles) for the variables of interests and then a genetic algorithm based on a fuzzy logic controller is applied to regulate these variables around these profiles.
An optimal feeding profile of a fed batch process based on an evolutionary algorithm is designed. This algorithm is well suited to derive multi-objective optimization, since it involves a set of non-dominated solutions distributed along the Pareto front. Several evolutionary multi-objective optimization algorithms have been developed in which the Non-dominated

Sorting Genetic Algorithm NSGA-II is recognized to be very effective to overcome a variety of problems; an optimal control problem, usually solved by several methods considering single-objective dynamic optimization, is worked out.

82. Title: Influence of deposition temperature on structural, optical and electrical properties of sputtered Al doped ZnO thin films
Author(s): Mosbah, A.; Aida, M. S.
Source: JOURNAL OF ALLOYS AND COMPOUNDS Volume: 515 Pages: 149-153 DOI: 10.1016/j.jallcom.2011.11.113 Published: FEB 25 2012
Times Cited: 2 (from All Databases)

[Hide abstract]
Al doped ZnO thin films have been deposited by DC magnetron sputtering technique from ZnO-2 wt.% Al2O3 target onto glass and oxidized silicon substrates heated at temperature ranging between 150 and 370 degrees C in Ar plasma. X-ray diffraction analysis shows that the deposits have a preferential growth along the c-axis of the hexagonal structure. The average grain size increases from 10 to 59 nm with temperatures ranging from 150 up to 330 degrees C then it decreases to 45 nm at 370 degrees C. The root main square (RMS) surface roughness decreases with substrate temperature from 20.9 to 4.1 nm. The films are transparent up to 90% in the visible wavelength range and the optical gap increases with substrate temperature from 3.41 to 3.64 eV. The resistivity measured in Van der Pauw configuration at room temperature is very sensitive to the substrate temperature. It decreases from 5 x 10(-4) to 3 x 10(-5) Omega cm when the deposition temperature increases from 150 to 370 degrees C. Both carrier mobility and carrier concentration were found to increase with substrate temperature. (C) 2011 Elsevier B. V. All rights reserved.

83. Title: Analysis of a frictionless contact problem for elastic-viscoplastic materials
Author(s): Selmani, Mohamed; Selmani, Lynda
Source: NONLINEAR ANALYSIS-MODELLING AND CONTROL Volume: 17 Issue: 1 Pages: 99-117 Published: FEB 24 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We consider a dynamic frictionless contact problem for elastic-viscoplastic materials with damage. The contact is modelled with normal compliance condition. The adhesion of the contact surfaces is considered and is modelled with a surface variable, the bonding field whose evolution is described by a first order differential equation. We derive variational formulation for the model and prove an existence and uniqueness result of the weak solution. The proof is based on arguments of nonlinear evolution equations with monotone operators, a classical existence and uniqueness result on parabolic inequalities, differential equations and fixed-point arguments.

84. Title: Electron transfer in fast proton-helium collisions
Author(s): Kim, Hong-Keun; Schoeffler, M. S.; Houamer, S.; et al.
Source: PHYSICAL REVIEW A Volume: 85 Issue: 2 Article Number: 022707 DOI: 10.1103/PhysRevA.85.022707 Published: FEB 14 2012
Times Cited: 4 (from All Databases)

[Hide abstract]
We have measured the electron-transfer process in fast collisions (630-1200 keV/u) of protons with helium, which is dependent on the projectile scattering angle and the final electronic state. The fully differential data accompanied by theoretical second-order perturbation theory allow a detailed insight into the mechanism of electron-transfer processes.

85. Title: Effect of Azotobacter vinelandii and compatible solutes on germination wheat seeds and root concentrations of sodium and potassium under salt stress.
Author(s): Silini, A; Silini-Cherif, H; Ghoul, M
Source: Pakistan journal of biological sciences: PJBS Volume: 15 Issue: 3 Pages: 132-40

Published: 2012-Feb-1
Times Cited: 0 (from All Databases)

[Hide abstract]
The effect of plant growth-promoting Rhizobacteria (PGPR) and exogenous application of compatible solutes on seed germination and root concentrations of sodium and potassium of two wheat varieties (Triticum durum L.) were evaluated under saline stress. In this experiment, Azotobacter vinelandii strain DSM85, glycine betaine and proline were used. Inoculated seeds for each variety were placed on Whatman paper in 9 cm Petri dishes containing 15 mL of distilled water or NaCl solutions at various concentrations (control, 100, 200, 300 mM) supplemented with or without glycine betaine (GB) or proline at 5 mM. The results indicated that addition of proline (5 mM) stimulated the production of indol acetic acid and the growth of A. vinelandii at 200 and 300 mM NaCl, respectively. The germination rate index and the germination final percentage decreased significantly ($p < 0.05$) with increasing salinity level. The germination was significantly diminished at 300 mM with significant variation among varieties and Waha variety had higher germination percentage than Bousselam variety. Inoculation of seeds by A. vinelandii and exogenous application of proline had significantly positive effect on the germination at this concentration of NaCl. The rate of accumulation of Na+ in roots was important at 100 mM and increased at 200 mM. The concentration of K+ decreased when salinity increased. The effect of inoculation or inoculation with proline decreased the accumulation of Na' and reduced the loss of K+ under salt stress. From the present study we can conclude that the use of A. vinelandii strain DSM85 and external application of low concentrations of proline on seeds might be considered as a strategy for the protection of plants under saline stress.

86. Title: Structural, elastic, electronic, chemical bonding and thermodynamic properties of CaMg2N2 and SrMg2N2: First-principles calculations
Author(s): Haddadi, K.; Bouhemadou, A.; Bin-Omran, S.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 53 Issue: 1 Pages: 204-213
DOI: 10.1016/j.commatsci.2011.08.009 Published: FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We report first-principles density functional theory calculations of the structural, elastic, electronic, chemical bonding and thermodynamic properties of the ternary alkaline earth metal nitrides CaMg2N2 and SrMg2N2. The calculated equilibrium structural parameters agree well with the experimental findings. Single-crystal and polycrystalline elastic constants and some related properties under pressure effect have been predicted. Both compounds exhibit a striking elastic anisotropy and a ductile behavior. Electronic properties and chemical bonding nature have been studied throughout the band structure, density of states and charge distribution analyses. It is found that these two materials have a direct band gap (Gamma-Gamma) and a transition to an indirect gap (Gamma-M) occurs at about 8.63 and 5.16 GPa in CaMg2N2 and SrMg2N2, respectively. The chemical bonding has a mixture covalent-ionic character. Thermal effects on some macroscopic properties are predicted using the quasi-harmonic Debye model. (C) 2011 Elsevier B. V. All rights reserved.

87. Title: Optimal robust adaptive fuzzy synergetic power system stabilizer design
Author(s): Bouchama, Z.; Harmas, M. N.
Source: ELECTRIC POWER SYSTEMS RESEARCH Volume: 83 Issue: 1 Pages: 170-175
DOI: 10.1016/j.epsr.2011.11.003 Published: FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A new particle swarm optimized robust indirect adaptive power system stabilizer is developed based on recently developed synergetic control methodology. Fuzzy systems are used in an

adaptive scheme to approximate the system using a nonlinear model while synergetic control guarantees robustness and the use of a chatter free continuous control law which makes the controller easy to implement. In addition the controller parameters are optimized using PSO approach. Simulation of severe operating conditions of a power system is conducted to validate the effectiveness of the proposed approach while stability is guaranteed via Lyapunov synthesis. (C) 2011 Elsevier B.V. All rights reserved.

88. Title: Nucleation, growth and properties of Co nanostructures electrodeposited on n-Si(1 1 1)
Author(s): Khelladi, Mohamed Redha; Mentar, Loubna; Azizi, Amor; et al.
Source: APPLIED SURFACE SCIENCE Volume: 258 Issue: 8 Pages: 3907-3912 DOI: 10.1016/j.apsusc.2011.12.060 Published: FEB 1 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In the present work, cobalt thin films deposited directly on n-Si(111) surfaces by electrodeposition in Watts bath have been investigated. The electrochemical deposition and properties of deposits were studied using cyclic voltammetry (CV), chronoamperometry (CA), ex situ atomic force microscopy (AFM), X-ray diffraction (XRD) and alternating gradient field magnetometer (AGFM) techniques. The nucleation and growth kinetics at the initial stages of Co studied by current transients indicate a 3D island growth (Volmer-Weber); it is characterized by an instantaneous nucleation mechanism followed by diffusion limited growth. According to this model, the estimated nucleus density and diffusion coefficient are on the order of magnitude of 10(6) cm(-2) and 10(-5) cm(2) s(-1), respectively. AFM characterization of the deposits shows a granular structure of the electrodeposited layers. XRD measurements indicate a small grain size with the presence of a mixture of hcp and fcc Co structures. The hysteresis loops with a magnetic field in the parallel and perpendicular direction and showed that the easy magnetization axis of Co thin film is in the film plane. (C) 2011 Elsevier B.V. All rights reserved.

89. Title: Synthesis and characterization of a PbO2-clay nanocomposite: Removal of lead from water with montmorillonite
Author(s): Aroui, L.; Zerroual, L.; Boutahala, M.
Source: MATERIALS RESEARCH BULLETIN Volume: 47 Issue: 2 Pages: 206-211 DOI: 10.1016/j.materresbull.2011.11.043 Published: FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The aim of this paper is to present the results obtained with Pb(II) sorption on an Algerian Clay. The experiments were carried out using a batch process. Powder X-rays diffraction patterns (PXRD) prove that in the montmorillonite Pb replaces Na ions. A significant restructuring at the particle scale is observed leading to the disappearance of the d(0 0 1) reflection of the clay at high concentrations of lead. The replacement of hydrated Na with Pb ions influenced significantly the thermal behaviour of the montmorillonite samples with regard to their dehydration and dehydroxilation capacities with a lowering of the water content. A PbO2-clay composite material with good electrical conductivity is synthesized. (C) 2011 Elsevier Ltd. All rights reserved.

90. Title: A Dynamic Frictionless Elastic-Viscoplastic Problem with Normal Damped Response and Damage
Author(s): Selmani, Mohamed; Messaoudi, Tayeb
Source: MEDITERRANEAN JOURNAL OF MATHEMATICS Volume: 9 Issue: 1 Pages: 81-94 DOI: 10.1007/s00009-011-0117-9 Published: FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We consider a mathematical model for the process of a frictionless contact between an elastic-

viscoplastic and a reactive foundation. The material is elastic-viscoplastic with internal state variable which may describe the damage of the system caused by plastic deformations. We establish a variational formulation for the model and prove the existence and uniqueness result of the weak solution. The proof is based on arguments of nonlinear equations with monotone operators, on parabolic type inequalities and fixed point.

91. Title: Photoacoustic spectroscopy analysis of silicon crystals
Author(s): Benamrani, H.; Satour, F. Z.; Zegadi, A.; et al.
Source: JOURNAL OF LUMINESCENCE Volume: 132 Issue: 2 Pages: 305-312 DOI: 10.1016/j.jlumin.2011.08.027 Published: FEB 2012
Times Cited: 2 (from All Databases)

[Hide abstract]
A high resolution fully automated photoacoustic spectrometer (PAS) of the gas-microphone type is used in the photon energy region 0.8-1.6 eV to analyze the optical properties of silicon single crystals at different frequencies between 25 and 312 Hz. At modulating frequencies at which the sample thickness approaches its thermal diffusion length, the results obtained of untreated specimens using different PA cells reveal the presence of several peaks in the absorption tail, some of which are independent of the photon energy. The magnitude of these peaks is seen to be stronger than that of the maximum of the fundamental edge of silicon, thus making it indistinct. At lower modulating frequencies at which the sample thickness is far less than its thermal diffusion length and using a highly reflecting backing material, multiple reflections of the light beam within the sample interfaces are seen to enhance the PA amplitude signal sensitivity response as predicted theoretically. The effect of etching silicon samples in a diluted solution of hydrofluoric acid (5%) on photoacoustic spectra has been investigated. It is observed that this process removes all spurious features in the spectra originating from the surface contaminants making the fundamental absorption edge clearly visible and leaving only one distinct peak at hv = 0.9 eV. Transmission-photoacoustic (T-PAS) has also been used to study silicon single crystals. In the light of recent literature a comparison is carried out between the results obtained using the two techniques in determining the absorption coefficient and the gap energy. (C) 2011 Elsevier B.V. All rights reserved.

92. Title: Two-dimensional transport equation as Fredholm integral equation
Author(s): Kadem, Abdelouahab; Baleanu, Dumitru
Source: COMMUNICATIONS IN NONLINEAR SCIENCE AND NUMERICAL SIMULATION Volume: 17 Issue: 2 Pages: 530-535 DOI: 10.1016/j.cnsns.2011.01.027 Published: FEB 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
The transport equation has many applications in various fields of science and engineering. In this paper we shown that we can transform a transport equation in two-dimensional case into a Fredholm integral equation of the second kind with a compact integral operator for the angular flux by using the Sumudu transform. (C) 2011 Elsevier B.V. All rights reserved.

93. Title: Reducing transformation and global optimization
Author(s): Guettal, Djaouida; Ziadi, Abdelkader
Source: APPLIED MATHEMATICS AND COMPUTATION Volume: 218 Issue: 10 Pages: 5848-5860 DOI: 10.1016/j.amc.2011.11.053 Published: JAN 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this paper, we give new results on the Alienor method of dimension reduction. This technique is used to solve multidimensional global optimization problems of type min(x is an

element of X)f(x) where f is a non convex Lipschitz function and X a compact set of R-n (n >= 2) defined by Lipschitz constraints. The idea is to construct an alpha-dense curve h in the feasible set X. The global minimum of f on X is then approximated by the global minimum of f on the curve h. That is, our problem has become a one-dimensional problem which can be solved by the Piyavskii-Shubert method. Examples of these curves and numerical implementations on several test functions are given. Crown Copyright (C) 2011 Published by Elsevier Inc. All rights reserved.

94. Title: Study of nucleation and growth process of electrochemically synthesized ZnO nanostructures
Author(s): Khelladi, M. R.; Mentar, L.; Boubatra, M.; et al.
Source: MATERIALS LETTERS Volume: 67 Issue: 1 Pages: 331-333 DOI: 10.1016/j.matlet.2011.09.098 Published: JAN 15 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The electrodeposition of ZnO nanostructures on ITO substrates was investigated by cyclic voltammetry, chronoamperometry and X-ray diffraction techniques. The potential deposition-dependent nucleation and growth mechanism of electrodeposited ZnO were studied by using the Scharifker-Hills nucleation model. From the analysis of the experimental current transients, the nucleation is in a good agreement with the instantaneous nucleation and three-dimensional (3D) diffusion-limited growth. X-ray diffraction measurements indicated that the as-grown films were of hexagonal wurtzite phase with a high crystalline quality. (C) 2011 Elsevier B.V. All rights reserved.

95. Title: REAL INTERPOLATION SPACES BETWEEN THE DOMAIN OF THE LAPLACE OPERATOR WITH TRANSMISSION CONDITIONS AND L-p ON A POLYGONAL DOMAIN
Author(s): Aibeche, Aissa; Chikouche, Wided; Daikh, Yasmina
Source: ELECTRONIC JOURNAL OF DIFFERENTIAL EQUATIONS Article Number: 10 Published: JAN 13 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We provide a description of the real interpolation spaces between the domain of the Laplace operator (with transmission conditions in a polygonal domain Omega) and L-p(Omega) as interpolation spaces between W-2,W-p(Omega) (possibly augmented with singular solutions) and L-p(Omega). This result relies essentially on estimates on the resolvent and the reiteration theorem.

96. Title: Elongational and Shear Flow Behavior of Calcium Carbonate Filled Low Density Polyethylene: Effect of Filler Particle Size, Content, and Surface Treatment
Author(s): Zoukrami, Fouzia; Haddaoui, Nacerddine; Bailly, Christian; et al.
Source: JOURNAL OF APPLIED POLYMER SCIENCE Volume: 123 Issue: 1 Pages: 257-266 DOI: 10.1002/app.34466 Published: JAN 5 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this article, calcium carbonate filled low density polyethylene (LDPE) was prepared and the influence of filler content, particle size, and surface treatment with stearic acid on the strain hardening and viscoelastic properties of the composites were investigated. Both elongational and shear rheological measurements were conducted on the different formulations and completed by microscopical observations and by differential scanning thermal analysis. The obtained results indicate that the effect of filler content and particle size are negligible on strain hardening behavior. Also the filler surface treatment has a less important effect on the nonlinear elongational tests in comparison with low frequency range measurements. However in shear rheology, we noted the absence of yield stress and network

structure at different filler contents, and the presence of shear thinning behavior. Scanning electron microscopy (SEM) observations showed the enhancement of dispersion for surface treated samples, while differential scanning calorimetry (DSC) experiments have shown that the content of crystallinity of LDPE matrix is slightly affected by the presence of filler. (C) 2011 Wiley Periodicals, Inc. J Appl Polym Sci 123: 257-266, 2012

97. Title: Failure Mechanisms and Comparative Study of Ruggedness in IGBTs Devices (IR, IXYS)
Author(s): Benbahouche, Ly; Merabet, A.; Zegadi, A.
Book Group Author(s): IEEE
Conference: 28th International Conference on Microelectronics (MIEL) Location: Nis, SERBIA Date: MAY 13-16, 2012
Sponsor(s): IEEE; IEEE Serbia & Montenegro Sect - ED/SSC Chapter; IEEE Electron Devices Soc (EDS); IEEE Solid-State Circuits Soc (SSCS)
Source: 2012 28TH INTERNATIONAL CONFERENCE ON MICROELECTRONICS (MIEL) Book Series: International Conference on Microelectronics-MIEL Pages: 111-114 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
This paper present a detailed study of performance of two the most commercially available IGBT for International Rectifier and IXYS e. g. IRGBC40 (S, F, U) and IXGH40N60A, when subjected to two such stressful conditions short circuit operation and unclamped inductive switching and it takes into account specific phenomena limiting its SOA (Safe Operation Area), avalanche, second breakdown as well as latch up. As both these tests conditions are potentially destructive, it is extremely cost efficient to model the device performance under these conditions. The need of a good physics based simulation to carry out a reliability study is pointed out in this paper. An explanation comparison of ruggedness of IRGBC40 (S, F, U) as well as of IXGH40N60A which leads to a fundamental understanding of physics of two devices.

98. Title: Optical and Photo-Electrochemical Properties of Conducting Polymer/Inorganic Semiconductor Nanoparticle
Author(s): Habelhames, Farid; Lamiri, Leila; Wided, Zerguine; et al.
Book Editor(s): Yang, G
Conference: International Symposium on Materials Science and Engineering Technology (ISMSET 2011) Location: Dubai, U ARAB EMIRATES Date: NOV 12-13, 2011
Sponsor(s): Hong Kong Educ Technol Soc
Source: MATERIALS SCIENCE AND ENGINEERING TECHNOLOGY Book Series: Advanced Materials Research Volume: 428 Pages: 78-83 DOI: 10.4028/www.scientific.net /AMR.428.78 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Optical and photoelectrochemical properties of polybithiophene Poly(bTh) films electrochemically synthesized and modified with incorporation of silicon nanoparticles (n-Si or p-Si) dispersed in the electrolytic during polymerization were studied. The characterisation of these modified surface electrodes by Poly(bTh)+n-Si or Poly(bTh)+p-Si, was carried out by using the photocurrent measurements and UV-visible spectroscopy. Cyclic voltammetry (CV) and electrochemical impedance spectroscopy (EIS) have been used to investigate the electrochemical behaviour of the resulting materials. The results show that the photosensitive composite materials have good photoelectrochemical and optical properties, and it can be used as material for the photovoltaic cells applications.

99. Title: Multicenter Transversal Two-Phase Study to Determine a National Prevalence of Epilepsy in Algeria
Author(s): Moualek, Dalila; Pacha, Lamia Ali; Abrouk, Samira; et al.
Source: NEUROEPIDEMIOLOGY Volume: 39 Issue: 2 Pages: 131-134 DOI:

10.1159/000339637 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Background/Aims: The prevalence of epilepsy in Algeria is unknown. The aims of this multicenter transversal study were to determine the national prevalence and clinical characteristics of epilepsy in the Algerian population. Methods: This two-phase study was conducted in 5 circumscriptions and included 8,046 subjects aged over 2 months who attended the randomly selected public and private primary care clinics. In the phase 1 study, a questionnaire was submitted to the sample of patients. In the phase 2 study, all potentially epileptic people were examined by neurologists and a second questionnaire was submitted, eventually assessed by appropriate investigations. Results: Sixty-seven patients were identified as having active epilepsy, giving a crude prevalence ratio of 8.32 per 1,000(95% CI, 6.34-10.3) and an age-adjusted prevalence ratio of 8.9 per 1,000. The highest age-specific ratio was found in patients aged 10-19 years (16.92 per 1,000). Generalized seizures (68.7%) were more common than partial seizures (29.8%). Perinatal injuries were the major leading putative causes (11.9%). Conclusion: The prevalence of epilepsy of 8.32 determined in this study is relatively high. These results provide new epidemiological data and suggest that epilepsy remains an important public health issue to consider in Algeria. Copyright (C) 2012 S. Karger AG, Basel

100. Title: A modified variable time step method for solving ice melting problem
Author(s): Boureghda, Abdellatif
Source: JOURNAL OF DIFFERENCE EQUATIONS AND APPLICATIONS Volume: 18 Issue: 9 Pages: 1443-1455 DOI: 10.1080/10236198.2011.561797 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A modified numerical method was used by authors for solving 1D Stefan problem. In this paper a modified method is proposed with difference formulae and different methods of calculating the variable time step, which are deduced from Taylor series expansions of different conditions at the boundary. Also an extrapolation formula for the solution at the first point at the right of the computational domain is proposed. The numerical results are compared with those obtained from other methods.

101.
Title: EFFICIENCY OF POLYURETHANE POLISHERS DURING THE OPTICAL GLASS POLISHING
Author(s): Belkhir, Nabil; Bouzid, Djamel; Herold, Volker
Source: ANNALES DE CHIMIE-SCIENCE DES MATERIAUX Volume: 37 Issue: 1 Pages: 31-48 DOI: 10.3166/acsm.37.31-48 Published: JAN-FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The subject of this work is to study the efficiency of the polyurethane polishing pad relatively to its quality during the free abrasive polishing process of the optical glass.
In this work, samples of BK7 optical glass were polished. Three kinds of polyurethane polishers were used. The glass surface and the polishers were characterized using several characterization techniques. The obtained results show that the polishing pad quality influences the polishing efficiency and the glass surface quality. The polyurethane polishers undergo wear during their use more than one hour in the glass polishing process, where some changes of the polisher characteristics were observed.

102.
Title: Mechanical Properties of Biodegradable Composites Reinforced with Short Spartium Junceum Fibers before and after Treatments
Author(s): Nekkaa, S.; Guessoum, M.; Grillet, A. C.; et al.

Source: INTERNATIONAL JOURNAL OF POLYMERIC MATERIALS Volume: 61 Issue: 13 Pages: 1021-1034 DOI: 10.1080/00914037.2011.617332 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In the present study, Spartium junceum (SJ) fibers were chemically treated with different concentrations of two coupling agents, silane N [-3 Trimethoxysilyl propyl] ethylene diamine (Z-6020) and stearic acid, in order to improve the mechanical properties of polypropylene/Spartium junceum fibers (PP/SJ) composites. The chemical modification efficiency was verified by FTIR analysis, which showed the appearance of bands around 1260 and 1100 cm(-1) attributed to asymmetric stretching of Si-O-Si linkage and Si-O-Cellulose for (Z-6020) modified SJ fibers. The mechanical properties of the composites prepared from chemically treated Spartium junceum fibers are found to increase substantially compared to those with untreated fibers.

103.
Title: Shell Model Calculation for Te and Sn Isotopes in the Vicinity of Sn-100
Author(s): Yakhelef, A.; Bouldjedri, A.
Book Editor(s): Mebarki, N; Mimouni, J; Belaloui, N; et al.
Conference: 8th International Conference on Progress in Theoretical Physics (ICPTP) Location: Campus Mentouri Univ, Constantine, ALGERIA Date: OCT 23-25, 2011
Sponsor(s): Algerian Minist Higher Educ & Sci Res; Directorate Gen Sci Res & Technol Dev (DGRSDT); Rectorate Mentouri Univ; Fac Sci Mentouri Univ
Source: 8TH INTERNATIONAL CONFERENCE ON PROGRESS IN THEORETICAL PHYSICS (ICPTP 2011) Book Series: AIP Conference Proceedings Volume: 1444 Pages: 197-201 DOI: 10.1063/1.4715420 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
New Shell Model calculations for even-even isotopes Sn104-108 and Te-106,Te-108, in the vicinity of Sn-100 have been performed. The calculations have been carried out using the windows version of NuShell@MSU. The two matrix elements TBMEs of the effective interaction between valence nucleons are obtained from the renormalized two effective interaction based on G-matrix derived from the CD-bonn nucleon-nucleon potential. The single particle energies of the proton and neutron valence spaces orbitals are defined from the available spectra of lightest odd isotopes of Sb and Sn respectively.

104.
Title: Time Dependent Systems with Continuous Spectra: Some Applications
Author(s): Saadi, Y.; Maamache, M.
Book Editor(s): Mebarki, N; Mimouni, J; Belaloui, N; et al.
Conference: 8th International Conference on Progress in Theoretical Physics (ICPTP) Location: Campus Mentouri Univ, Constantine, ALGERIA Date: OCT 23-25, 2011
Sponsor(s): Algerian Minist Higher Educ & Sci Res; Directorate Gen Sci Res & Technol Dev (DGRSDT); Rectorate Mentouri Univ; Fac Sci Mentouri Univ
Source: 8TH INTERNATIONAL CONFERENCE ON PROGRESS IN THEORETICAL PHYSICS (ICPTP 2011) Book Series: AIP Conference Proceedings Volume: 1444 Pages: 443-447 DOI: 10.1063/1.4715473 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We present some concrete applications to the recent results obtained for the study of time dependent systems involving continuous spectra. Before doing, a brief recall of these results is provided.

105.
Title: Time Dependent Systems with Continuous Spectra: Some Applications
Author(s): Saadi, Y.; Maamache, M.
Book Editor(s): Mebarki, N; Mimouni, J; Belaloui, N; et al.
Conference: 8th International Conference on Progress in Theoretical Physics (ICPTP) Location: Campus Mentouri Univ, Constantine, ALGERIA Date: OCT 23-25, 2011

Sponsor(s): Algerian Minist Higher Educ & Sci Res; Directorate Gen Sci Res & Technol Dev (DGRSDT); Rectorate Mentouri Univ; Fac Sci Mentouri Univ
Source: 8TH INTERNATIONAL CONFERENCE ON PROGRESS IN THEORETICAL PHYSICS (ICPTP 2011) Book Series: AIP Conference Proceedings Volume: 1444 Pages: 448-452 DOI: 10.1063/1.4715474 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We present some concrete applications to the recent results obtained for the study of time dependent systems involving continuous spectra. Before doing, a brief recall of these results is provided.

106.
Title: Acousto-optic Method Used to Control Water Pollution by Miscible Liquids
Author(s): Ferria, Kouider; Griani, Lazhar; Laouar, Naamane
Book Editor(s): Linde, BBJ; Paczkowski, J; Ponikwicki, N
Conference: International Congress on Ultrasonics (ICU) Location: Univ Gdansk, Inst Expt Phys, Gdansk-Oliwa Campus, Gdansk, POLAND Date: SEP 05-08, 2011
Sponsor(s): Univ Gdansk; Polish Acoust Soc; Polish Acad Sci, Comm Acoust; Int Commiss Acoust (ICA)
Source: INTERNATIONAL CONGRESS ON ULTRASONICS (GDANSK 2011) Book Series: AIP Conference Proceedings Volume: 1433 Pages: 76-83 DOI: 10.1063/1.3703143 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
An acousto-optic (A.O.) method has been developed for controlling the quality of water mixed by miscible liquids like acetone or ethanol. The liquid mixture is filled in a rectangular glass cell, which is placed orthogonally to the incident collimated beam of light. This cell consists of a piezoelectric transducer for generating ultrasonic waves. The collimated light while passing through this cell undergoes a diffraction phenomenon. The diffracted dots are collected by a converging photographic objective and displayed in its back focal plane. The location of the diffracted dots and their intensity are sensitive to any variation of the interaction medium. This result leads to decide about the quality of the water.

107.
Title: Anthropometry of Algerian elderly
Author(s): Bouabdallah, L.
Source: WORK-A JOURNAL OF PREVENTION ASSESSMENT & REHABILITATION Volume: 41 Supplement: 1 Pages: 5415-5416 DOI: 10.3233/WOR-2012-0838-5415 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In Algeria, a lot of attention is given to the elderly by both the government and private institutions. On the government side, two ministries participate in caring for the elderly. These are the ministry of social development and the Ministry of public health. On the private side, a lot of effort is given to the elderly through many societies and centres. If the elderly is to live independently and self-efficiently, whether at home or in social care institutions, equipment, tools, environment, daily-use items, and personal-use items should be designed for them, so that their needs are entirely satisfied, and abilities and limitations are carefully considered. Therefore, this study was carried out to provide anthropometric data of the elderly in Algeria, so that it may be used either to design equipment for them or to evaluate it in order that its use is efficient, and safe. Therefore, An anthropometric study of Algerian elderly was carried out. 29 dimensions were measured. Mean, variation measures, and percentiles, were calculated. dimensions results were presented in one table so that they can easily be used by designers.

108.
Title: Effects of Kaolin Surface Treatments on the Thermomechanical Properties and on the Degradation of Polypropylene
Author(s): Guessoum, Melia; Nekkaa, Sorya; Fenouillot-Rimlinger, Francoise; et al.
Source: INTERNATIONAL JOURNAL OF POLYMER SCIENCE Article Number: 549154

DOI: 10.1155/2012/549154 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The effects of kaolin content and treatments on the thermal and mechanical properties and on the degradation of polypropylene were examined using mechanical tests, differential scanning calorimetry (DSC), and thermogravimetry (TGA). The weak interactions filler/matrix have been reinforced using a modification with urea then with an ammonium salt and a surface treatment with a silane coupling agent. The XRD results showed that the peak at the d-value of 10.7 angstrom increases in urea/kaolin complex, but the treatment with the ammonium salt caused the return to the initial state of the clay. FTIR results showed the appearance of new bands characteristic of the interactions between urea and kaolinite and the alkylammonium and kaolinite. The mechanical properties of the composites exhibited important variations while the DSC results showed the decrease of the crystallization temperature as a function of kaolin content. TGA thermograms pointed out the improvement of the composites' thermal stability.

109.
Title: Optimal Control Problem Governed by an Infinite Dimensional One-Nilpotent Bilinear Systems
Author(s): Aib, Aziza; Bensalem, Naceurdine
Source: BULLETIN MATHEMATIQUE DE LA SOCIETE DES SCIENCES MATHEMATIQUES DE ROUMANIE Volume: 55 Issue: 2 Pages: 107-128 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The object of this work is to construct an explicit linear operators B which commute with a given linear operator A in infinite dimensional spaces. This construction can be applied to give exact optimal solution for a class of infinite dimensional bilinear systems.

110.
Title: Dynamic modelling of the secondary settler of a wastewater treatment via activated sludge to low-load
Author(s): Bakiri, Zahir; Chebli, Derradji; Nacef, Saci
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 1-9 DOI: 10.1016/j.egypro.2012.05.012 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The aim of this study is to apply a mathematical treatment to a case study that concerns the biological wastewater treatment. Its objective was to develop a model that aims at predicting the conditions that would lead to an outlet clear water out from a secondary settler. It deals with a wastewater treatment process which consists of the separation by decantation of an activated sludge coming out of an aerobic low-load reactor.
First, it was necessary to estimate the pollution parameters namely: the total suspended solid (TSS), the chemical oxygen demand (COD), the biological oxygen demand (BOD5) and ammonia content (NH3-N).
Secondly a mathematical model for the secondary settler was developed. The monitoring of the wastewater treatment plant as well as the knowledge of the experimental parameters such as the sludge blanket height, the TSS, and decantation time enabled us to develop the mathematical model. The advantage of this model is that it would allow a better process control. (C) 2012 Published by Elsevier Ltd. Selection and/or peer-review under responsibility of The TerraGreen Society.

111. **Title: The performances of Durum Wheat Yield (Triticum durum Desf.) under Tillage Effect in Semi-Arid Environment**
Author(s): Houria, Chennafi; Saci, A.
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 879-887
DOI: 10.1016/j.egypro.2012.05.102 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Yield performances of durum wheat (Triticum durum Desf.) variety Waha were evaluated under effects of crop precedent: fallow and wheat, and tool nature of soil preparation: scarifier, moldboards plow or disks plow, during 2006/2007 growth season. The results showed the advantage, in grain yield, of wheat that crop precedent is fallow relatively to wheat following wheat. Tool effect of tillage soil is related to crop precedent. Indeed, Waha cultivated under fallow tilled with scarifier produced more grain than after wheat. However, proper management of production system improved productivity efficiency in rainfed agriculture. It is focused on soil and water resources conservation. (C) 2012 Published by Elsevier Ltd. Selection and/or peer-review review under responsibility of The TerraGreen Society.

112. **Title: Decadal Evaluation of Durum Wheat Water Requirements to Improve Rainfed Agriculture under Semi-Arid conditions**
Author(s): Houria, Chennafi
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 896-904
DOI: 10.1016/j.egypro.2012.05.104 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The estimating water requirement of durum wheat is a technical tool which seats a practical water management. The water needs of durum wheat grown on the High Plains of Setif raised sharply by the first decade of march. In fact, it reached 46 mm from the mid of the tillering to the mid of jointing (march - april) and raised to 103 mm during the booting - heading growth phase. For a crop cycle lasting from the mid-november to the third decade of may, the crop water requirements were estimated to 672 mm. The periods with the high water demand coincide with limited offer. These results suggested applying limited water quantities to reduce water deficit effect on the crop. This contributes to stabilize wheat production through soil conservation and durable management of the scarce water resources in semi-arid area. (C) 2012 Published by Elsevier Ltd. Selection and/or peer-review review under responsibility of The TerraGreen Society.

113. **Title: Solar cells parameters evaluation from dark I-V characteristics**
Author(s): Bouzidi, K.; Chegaar, M.; Aillerie, M.
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 1601-1610
DOI: 10.1016/j.egypro.2012.06.001 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this paper, a comparative analysis of three methods to determine the four solar cells parameters (the saturation current (Is), the series resistance (Rs), the ideality factor (n), and the shunt conductance (Gsh)) of the single diode lumped model from its dark curve is presented. These methods are based on Gromov, Werner, and Mikhelashviliet al. methods that were used to extract the Schottky diode parameters. These techniques have been adequately modi ed, extended to cover the case of solar cells and used to extract the parameters of interest from experimental I-V characteristic of a Poly-Si solar cell under dark condition. (C) 2010 Published by Elsevier Ltd. Selection and/or peer-review under responsibility of The TerraGreen Society.

114. Title: Environmental effects on the performance of nanocrystalline silicon solar cells
Author(s): Guechi, A.; Chegaar, M.; Aillerie, M.
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 1611-1623
DOI: 10.1016/j.egypro.2012.06.002 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this paper the global, direct and diffuse solar radiation incident on solar cells is simulated using the spectral model SMARTS2, for varying environmental conditions on the site of Setif. The effect of changes in total intensity and spectral distribution on the short circuit current and efficiency of nanocrystalline silicon (nc-Si: H) is examined. The results show a reduction in the short circuit current due to increasing turbidity. It is 27.06% and 67.97% under global and direct radiation respectively. However it increases under diffuse radiation. This increase is about 53.97%. Increasing albedo leads to an increase in the short circuit current of 5.70% and 27.05% for global and diffuse solar radiation, respectively and it is not influenced under direct solar radiation. The performance of the cells is notably reduced, both in terms of efficiency and open circuit voltage, with increasing air mass. It is about 81.86%, 37.47% and 94.18% for global, diffuse and direct solar radiation respectively. (C) 2012 Published by Elsevier Ltd. Selection and/or peer-review under responsibility of The TerraGreen Society.

115. Title: Decadal Evaluation of Durum Wheat Water Requirements to Improve Rainfed Agriculture under Semi-Arid conditions
Author(s): Houria, Chennafi
Book Editor(s): Salame, C; Aillerie, M; Khoury, G
Conference: International Conference on Clean Energy Solutions for Sustainable Environment (TerraGreen) Location: Beirut, LEBANON Date: FEB 16-19, 2012
Source: TERRAGREEN 2012: CLEAN ENERGY SOLUTIONS FOR SUSTAINABLE ENVIRONMENT (CESSE) Book Series: Energy Procedia Volume: 18 Pages: 896-904
DOI: 10.1016/j.egypro.2012.05.104 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The estimating water requirement of durum wheat is a technical tool which seats a practical water management. The water needs of durum wheat grown on the High Plains of Setif raised sharply by the first decade of march. In fact, it reached 46 mm from the mid of the tillering to the mid of jointing (march - april) and raised to 103 mm during the booting - heading growth phase. For a crop cycle lasting from the mid-november to the third decade of may, the crop water requirements were estimated to 672 mm. The periods with the high water demand coincide with limited offer. These results suggested applying limited water quantities to reduce water deficit effect on the crop. This contributes to stabilize wheat production through soil conservation and durable management of the scarce water resources in semi-arid area. (C) 2012 Published by Elsevier Ltd. Selection and/or

peer-review review under responsibility of The TerraGreen Society.

116. Title: SILVER DIFFUSION AND COLORATION OF SODA LIME AND BOROSILICATE GLASSES PART 1: EFFECT ON THE TRANSMISSION AND COLORATION OF STAINED GLASSES
Author(s): Chorfa, Abdellah; Belkhir, Nabil; Rubio, Fausto; et al.
Source: CERAMICS-SILIKATY Volume: 56 Issue: 1 Pages: 69-75 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Using the conventional method of coloration, soda lime and borosilicate glasses have been painted. Once stained, these glasses were heat treated at temperatures close to their transition temperatures (T). A parametric study was carried out in order to determine at first the effect of the silver concentration in the stain spread on glass. In addition, it was studied the effect of the heat treatment duration and the chemical composition of the painted glasses on the formation and size of the silver nanoparticles, the silver diffusion depth and also the glasses coloration. The characterization was made using UV-Vis spectroscopy, Raman confocal spectroscopy, SEM, EDX Technique and Abbe Refractometer The obtained results shows that the coloration intensity of both glass types painted by the conventional method differs and depends essentially on the proportion of alkali ions in the glass. Moreover it was found that the effect of the silver concentration in the stain is primordial and the heat treatment duration has a limited effect.

117. Title: Direct adaptive fuzzy control of a class of MIMO non-affine nonlinear systems
Author(s): Doudou, Sofiane; Khaber, Farid
Source: INTERNATIONAL JOURNAL OF SYSTEMS SCIENCE Volume: 43 Issue: 6 Pages: 1029-1038 DOI: 10.1080/00207721.2010.547631 Published: 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
An adaptive fuzzy control approach is proposed for a class of multiple-input-multiple-output (MIMO) nonlinear systems with completely unknown non-affine functions. The global implicit function theorem is first used to prove the existence of an unknown ideal implicit controller that can achieve the control objectives. Within this scheme, fuzzy systems are employed the approximate the unknown ideal implicit controller, and robustifying control terms are used to compensate the approximation errors and external disturbances. The adjustable parameters of the used fuzzy systems are deduced from the stability analysis of the closed-loop system in the sense of Lyapunov. To show the efficiency of the proposed controllers, two simulation examples are presented.

118. Title: Study of the behaviour of electrostrictive polymers for energy harvesting with FFT analysis
Author(s): Meddad, M.; Eddialal, A.; Guyomar, D.; et al.
Source: JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS Volume: 14 Issue: 1-2 Pages: 55-60 Published: JAN-FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Electrostrictive polymers energy harvesters are an emerging technology that promises high power density, low cost and scalability. Power can be produced simply by stretching and contracting a polymer film. At present, the investigation of using electrostrictive polymers for energy harvesting (a conversion of mechanical to electrical energy) is beginning to show potential for this application. The relative energy gain basically depends in the current induced by the mechanical strain and frequency. Previous work of some of the co-authors, has indicated that one can measure the dielectric constant, the Young modulus and the electrostrictive coefficient of a polymer film by the determination of the current flowing through the sample when simultaneously driven by electrical field and mechanical excitation.

This paper investigates the effects of this method for different frequencies for both electrical field E and strain in order to develop a more in-depth understanding of the changes in system response for increased current and energy harvesting. Results relating amplitude strain and the frequency for electrical field provide a framework for developing energy harvesting techniques which improve the overall performance of the system. Experimental data indicate that the current induced with polymer is proportional with the change in frequency of the deformation. In the present paper the theory is detailed and the simulation results are compared with experimental ones. Good agreements are found between both approaches.

119. **Title: PREPARATION OF A NEW POLYSTYRENE SUPPORTED-ETHYLENEDIAMINEDIACETIC ACID RESIN AND ITS SORPTION BEHAVIOR TOWARD DIVALENT METAL IONS**
Author(s): Charef, Noureddine; Benmaamar, Zina; Arrar, Lekhmici; et al.
Source: SOLVENT EXTRACTION AND ION EXCHANGE Volume: 30 Issue: 1 Pages: 101-112 DOI: 10.1080/07366299.2011.581070 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A new polystyrene-supported ethylenediaminediacetic acid resin has been synthesized through a reaction between the amination of the commercially available 4-chloromethyl polystyrene polymer with ethylenediamine and the subsequent carboxymethylation with monobromoacetic acid, using ethylenediamine as spacer. The chelation behavior of this resin toward the divalent metal ions Cu2+, Ni2+, Zn2+, and Pb2+ in aqueous solutions was investigated. Batch equilibration experiments were carried out as a function of contact time, pH, amount of metal-ion, and polymer mass. The amount of metal-ion uptake of the polymer was determined by using atomic absorption spectrometry (AAS). Results of the investigation revealed that the resin exhibited higher capacities and a more pronounced adsorption toward Cu2+ and that the metal-ion uptake follows the order: Cu2+ > Zn2+ > Ni2+ > Pb2+. The adsorption and binding capacity of the resin toward the various metal ions investigated are discussed.

120. **Title: Synthesis, Spectroscopic, and Electrochemical Characterization of a Schiff Base: 4,4'-bis [(4-diethylaminosalicylaldehyde)diphenyl methane]diimine and Its Complexes With Copper(II), Cobalt(II), and Cadmium(II)**
Author(s): Benabid, Sonia; Douadi, Tahar; Debab, Houria; et al.
Source: SYNTHESIS AND REACTIVITY IN INORGANIC METAL-ORGANIC AND NANO-METAL CHEMISTRY Volume: 42 Issue: 1 Pages: 1-8 DOI: 10.1080/15533174.2011.614993 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The synthesis of a new ligand tetradentate Schiff base: 4,4'-bis[(4-diethyl aminosalicylaldehyde) diphenyl methane] diimine (H2L), obtained by condensation of 4,4'-diaminodiphenyl methane with 4-diethylaminosalicylaldehyde, and its complexes with copper(II), cobalt(II) and cadmium(II), is described. The metal complexes were characterized by elemental analysis, by UV-visible, infrared, and EPR spectroscopy, by cyclic voltammetry, and by thermal analysis (DTA-TG). The coordination of the metal ions to the ligand occurs through the N2O2 system. Thermal studies indicate that the ligand is more stable than the metal complexes (up to 310 degrees C).

121. **Title: Study of the genetic variation of tall fescue varieties using AFLP markers**
Author(s): Mefti, Mohammed; Bouzerzour, Hamena
Source: CAHIERS AGRICULTURES Volume: 21 Issue: 1 Pages: 4-10 DOI: 10.1684/agr.2012.0540 Published: JAN-FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Study of the genetic variation of tall fescue varieties using AFLP markers

Little information is available regarding genetic variation in tall fescue (Festuca arundinacea Schreb). Such information is important in constructing mapping populations and targeting germplasm collection and utilization. The objective of this study was to evaluate the genetic diversity among seven tall fescue accessions from diverse geographic origins. Tall fescue accessions were assayed by a fluorescence-labeled amplified fragment length polymorphism (AFLP) detection method using DNA samples bulked from each accession. On the basis of 105 AFLP markers from two primer combinations, the seven accessions were clustered in groups that largely supported the known origins of these plants. Fraydo and Lutine are genetically the most divergent, Tank and Sisa are genetically very similar, whereas Centurion has a very similar structure to the genotypes Flecha and endophyte-infected Flecha (E542), and a large genetic distance from Lutine although both Centurion and Lutine were bred by the same institute (Institut national de la recherche agronomique [INRA]).

122. **Title: Power Factor Correction based on Fuzzy Logic Controller with Fixed Switching Frequency**
Author(s): Kessal, A.; Rahmani, L.; Mostefai, M.; et al.
Source: ELEKTRONIKA IR ELEKTROTECHNIKA Issue: 2 Pages: 67-72 DOI: 10.5755/j01.eee.118.2.1176 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A. Kessal, L. Rahmani, M. Mostefai, J. Gaubert. Power Factor Correction based on Fuzzy Logic Controller with Fixed Switching Frequency // Electronics and Electrical Engineering. - Kaunas: Technologija, 2012. - No. 2(118). - P. 67-72.
This paper presents an application of different methods to regulate the output voltage of AC-DC converter associated with power factor corrector (PFC), a classical PI regulator was used, and another based on fuzzy logic was built, the both regulators were inserted in the voltage loop. To reduce the total harmonic distortion of the input current to give it a sinusoidal shape, hysteresis bands control were used, the variable band hysteresis give better results compared to other bands. All these controllers have been verified via simulation in Simulink and experimental test. The fuzzy logic inference based controller can achieve better dynamic response than its PI counterpart under large load disturbance and plant uncertainties. Furthermore, the variable hysteresis band control in the current loop gives a low THD of the input current compared to classical bands control. Ill. 12, bibl. 10, tabl. 2 (in English; abstracts in English and Lithuanian).

123. **Title: Optical glass surfaces polishing by cerium oxide particles**
Author(s): Bouzid, D.; Belkhie, N.; Aliouane, T.
Book Group Author(s): IOP
Conference: National conference on MATERIAUX Location: Mahdia, TUNISIA Date: NOV 04-07, 2010
Sponsor(s): Tunisian Mat Res Soc-Tu-MRS
Source: MATERIAUX 2010 Book Series: IOP Conference Series-Materials Science and Engineering Volume: 28 Article Number: 012007 DOI: 10.1088/1757-899X/28/1/012007 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The use of powders in metallic oxides as means of grinding and polishing of the optical glass components have seen recently a large application in optical industry. In fact, cerium oxide abrasive is more used in the optical glass polishing. It is used as grains abrasive in suspension or fixed abrasive (pellets); these pellets are manufactured from a mixture made of cerium oxide abrasive and a organic binder.
The cerium oxide used in the experiments is made by (Logitech USA) of 99% purity, the average grain size of the particle is 300 nm, the density being 6,74 g/cm(3) and the specific surface is 3,3042 m(2)/g.

In this study, we are interested in the surfaces quality of the optical glass borosilicate crown (BK7) polished by particles in cerium oxide bounded by epoxy. The surfaces of the optical glass treated are characterized by the roughness, the flatness by using the microscope Zygo and the SEM.

124. **Title: A study of the electrodeposition of Co-Cu alloys thin films on FTO substrate**
Author(s): Mentar, Loubna
Source: IONICS Volume: 18 Issue: 1-2 Pages: 223-229 DOI: 10.1007/s11581-011-0602-y Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work, the early stages and the properties of the electrodeposition process of Co-Cu alloys thin films on a fluorine-doped tin oxide (FTO)-coated conducting glass substrate from a sulfate bath were investigated using conventional electrochemical techniques and X-ray diffraction technique (XRD). FTO was chosen as a foreign substrate because of its high transparence and its properties as inert material. Within the potential range analyzed, the kinetics of the Co-Cu electrodeposition corresponded to a model including instantaneous nucleation on active sites and diffusion controlled cluster growth. The number of active sites of the substrate, N-0, and the diffusion coefficient, D, were determined from the analysis of potentiostatic current transients on the basis of existing theoretical models. XRD patterns of the Co-Cu alloys thin films display fcc and hcp phase, with peaks quite close to those of the Co phase (fcc and hcp). Therefore, the variation of the composition of thin films alloy is possible depending on the deposition potential.

125. **Title: First-principle calculations to investigate the elastic and thermodynamic properties of RBRh3 (R = Sc, Y and La) perovskite compounds**
Author(s): Litimein, F.; Khenata, R.; Bouhemadou, A.; et al.
Source: MOLECULAR PHYSICS Volume: 110 Issue: 2 Pages: 121-128 DOI: 10.1080/00268976.2011.635607 Published: 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
We have performed first-principle calculations using the full-potential linear augmented plane wave (FP-LAPW) method within density functional theory (DFT) to investigate the structural, elastic and thermodynamic properties of the cubic perovskite RBRh3 (R = Sc, Y and La) compounds. The exchange-correlation potential is treated within the generalized gradient approximation of Perdew-Burke-Ernzerhof (GGA-PBE). Single-crystal elastic constants are calculated using the total energy variation versus strain technique, then the shear modulus, Young's modulus, Poisson's ratio and anisotropic factor are derived for polycrystalline RBRh3 using the Voigt-Reuss-Hill approximations. Analysis of the calculated elastic constants C-ij and B/G ratios shows that these compounds are mechanically stable and ductile in nature. Using the quasi-harmonic Debye model, the effect of pressure P and temperature T on the lattice parameter a(0), bulk modulus B-0, thermal expansion coefficient alpha, Debye temperature theta(D) and the heat capacity C-v for these compounds are investigated for the first time. The computed structural and elastic constants are in good agreement with the available experimental and theoretical data.

126. **Title: First-principles prediction of metastable niobium and tantalium nitrides M4N5 and M5N6 stoichiometry**
Author(s): Chihi, T.; Fatmi, M.; Ghebouli, B.
Source: SOLID STATE SCIENCES Volume: 14 Issue: 1 Pages: 80-83 DOI: 10.1016/j.solidstatesciences.2011.10.020 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
A first-principles plane-wave pseudopotential method based on the density functional theory

is used to investigate the structural, elastic and electronic properties of M4N5 and M5N6 (M = a transition metal (TM) Nb, Ta). C-33 elastic constant for all compounds is found to be much larger than C-11, indicating that a-axis is more compressible than c-axis. Interestingly, we find that C-33 and C-11 are significantly larger than other elastic constants, resulting in a pronounced elastic anisotropy. (C) 2011 Elsevier Masson SAS. All rights reserved.

127. **Title: Anti-inflammatory, anti-oxidant, and apoptotic activities of four plant species used in folk medicine in the Mediterranean basin**
Author(s): Amira, Smain; Dade, Martin; Schinella, Guillemo; et al.
Source: PAKISTAN JOURNAL OF PHARMACEUTICAL SCIENCES Volume: 25 Issue: 1 Pages: 65-72 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The aim of this research was to study the potential anti-inflammatory activity of myrtle (Myrtus communis), sarsaparilla (Smilax aspera), Arabian or French lavender (Lavandula stoechas), and calamint (Calamintha nepeta) along with their apoptotic effects on the pro-inflammatory cells, and the correlation of these effects with the plants' potential anti-oxidant activity. Myrtle extract exhibited the highest inhibitory activity in the paw oedema induced by carrageenan (60% at 3 h), whereas calamint, lavender, and sarsaparilla produced inhibitions of 49%, 38%, and 47%, respectively. None of them had an effect on the TPA-induced ear oedema. Moreover, all the extracts except sarsaparilla showed different degrees of anti-oxidant activity. Lavender and myrtle at 200 mu g/mL decreased cell viability by 63% and 59%, respectively, after 3 h of incubation. Neutrophil elimination through apoptosis could be implicated in the resolution of acute inflammation in the case of lavender, whereas the reduction of reactive oxygen species produced by neutrophils, such as the superoxide anion and the hydroxyl radical, could be implicated in the overall reduction of inflammation. These results may support the traditional use of these plants.

128. **Title: URANIUM CONTENT AND DOSE ASSESSMENT FOR PHOSPHATE FERTILISER AND SOIL SAMPLES: COMPARISON OF URANIUM CONCENTRATION BETWEEN VIRGIN SOIL AND FERTILISED SOIL**
Author(s): Boukhenfouf, Wassila; Boucenna, Ahmed
Source: RADIATION PROTECTION DOSIMETRY Volume: 148 Issue: 2 Pages: 263-267 DOI: 10.1093/rpd/ncr025 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Specific activity of U-235 and U-238 in soil and fertiliser samples from Guellal region in Setif (Algeria) was determined by gamma-ray spectrometry. The selected phosphate fertilisers samples were collected from two types of fertilisers NPK (N, nitrogen; P, phosphorus; K, potassium) and NPKs (sulphate-based NPK). These last ones are used to fertilise the studied area as well as a radioactivity comparison between the soils before and after fertilisation. NPK and NPKs fertilisers have presented higher concentrations of the radionuclide U-238, up to 1125 and 1545 Bq kg(-1), respectively. For soils before and after fertilisation, the concentrations of U-238 were, respectively, 252.8 and 316.2 Bq kg(-1). The average value and range of measured concentration of U-235 for soils before fertilisation was 12.16 +/- 1.4 Bq kg(-1) and for the fertilised soils was 15.16 +/- 1.8 Bq kg(-1), whereas the corresponding values for NPK and NPKs fertilisers were, respectively, 49.38 +/- 5.7 and 50.61 +/- 5.2 Bq kg(-1).

129. **Title: Geochemical characterization of groundwater from shallow aquifer surrounding Fetzara Lake N. E. Algeria**
Author(s): Abdelkader, Rouabhia; Larbi, Djabri; Rihab, Hadji; et al.
Source: ARABIAN JOURNAL OF GEOSCIENCES Volume: 5 Issue: 1 Pages: 1-13 DOI: 10.1007/s12517-010-0202-6 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Hydrogeochemical investigations were carried out around Fetzara Lake, Northeast Algeria, to assess the quality of groundwater for its suitability for drinking and irrigation purposes. The groundwater chemistry is mainly controlled by the water-rock interactions, but also influenced by other processes such as evapotranspiration and ion exchange. Groundwater samples collected, during two periods (1993 and 2007) from wells in the area were analyzed for pH, EC, TDS, Ca(2+), Mg(2+), Na(+), K(+), CO (3) (2-) , HCO (3) (-) , Cl(-), SO (4) (2-) , and NO (3) (-) . The chemical relationships in Piper's diagram and Gibbs's diagram suggest that groundwaters mainly belong to noncarbonate alkali type and Cl(-) group and are controlled by evaporation dominance, respectively, due to the sluggish drainage conditions, greater water-rock interaction, and anthropogenic activities. A comparison of the groundwater quality in relation to drinking water quality standards proves that most of the water samples are not suitable for drinking. US Salinity Laboratory's and Wilcox's diagrams and %Na(+) used for evaluating the water quality for irrigation suggest that the majority of the groundwater samples are not good for irrigation.

130. Title: A generalized CAD model for the full-wave modeling of Coplanar striplines discontinuities
Author(s): Laib, S.; Djahli, F.; Mayouf, A.; et al.
Source: INTERNATIONAL JOURNAL OF NUMERICAL MODELLING-ELECTRONIC NETWORKS DEVICES AND FIELDS Volume: 25 Issue: 1 Pages: 82-95 DOI: 10.1002/jnm.816 Published: JAN-FEB 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work, the coplanar stripline (CPS) and its discontinuities: open-end, short-end, gaps and resonator have been modeled. New integral equations for the electrical field components are formulated, in the spectral domain, using an exact dyadic Green's function, applied to the CPS structure. The use of this form of Green's function allows the consideration of the effects of the dielectric losses, the surface wave excitation and the space wave radiation on the propagation characteristics of the CPS and its discontinuities. The resulting integral equation has been solved using the two-dimensional Galerkin's technique. The resolution of the resulting matrix equation gives the scattering parameters of the studied structures. The obtained results are commented and compared with those of other approaches and measurements. Copyright (C) 2011 John Wiley & Sons, Ltd.

131. Title: Double perovskite oxides Sr2MMoO6 (M = Fe and Co) as cathode materials for oxygen reduction in alkaline medium
Author(s): Cheriti, Mabrouk; Kahoul, Abdelkrim
Source: MATERIALS RESEARCH BULLETIN Volume: 47 Issue: 1 Pages: 135-141 DOI: 10.1016/j.materresbull.2011.09.016 Published: JAN 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
The oxygen reduction reaction (ORR) was studied on Sr2MMoO6 (M = Fe and Co) double perovskites, prepared by a solid-state reaction, in 0.5 M NaOH at 25 degrees C with a rotating disk electrode (RDE). The two oxide powders were characterized by X-ray diffraction, scanning electron microscopy and BET analysis. The electrochemical techniques considered are linear voltammetry, steady state polarization and ac impedance spectroscopy. The electrocatalysts (SFMO/C, SCMO/C) consisting of the double perovskite oxides and carbon (Vulcan XC-72) were mixed and spread out into a thin layer on a glassy carbon substrate. At room temperature, a significantly electrocatalytic activity is observed for both electrocatalysts. Compared to SFMO/C, the SCMO/C electrocatalyst was found to show a relatively high electrocatalytic activity for O-2 reduction, which agrees well with the results obtained using the ac impedance spectroscopy. (C) 2011 Elsevier Ltd. All rights reserved.

132. **Title:** Modeling and simulation of a grid connected PV system based on the evaluation of main PV module parameters
Author(s): Chouder, Aissa; Silvestre, Santiago; Sadaoui, Nawel; et al.
Source: SIMULATION MODELLING PRACTICE AND THEORY Volume: 20 Issue: 1 Pages: 46-58 DOI: 10.1016/j.simpat.2011.08.011 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
In this work we present a new method for the modeling and simulation study of a photovoltaic grid connected system and its experimental validation. This method has been applied in the simulation of a grid connected PV system with a rated power of 3.2 Kw(p), composed by a photovoltaic generator and a single phase grid connected inverter. First, a PV module, forming part of the whole PV array is modeled by a single diode lumped circuit and main parameters of the PV module are evaluated. Results obtained for the PV module characteristics have been validated experimentally by carrying out outdoor I-V characteristic measurements. To take into account the power conversion efficiency, the measured AC output power against DC input power is fitted to a second order efficiency model to derive its specific parameters.
The simulation results have been performed through Matlab/Simulink environment. Results has shown good agreement with experimental data, whether for the I-V characteristics or for the whole operating system. The significant error indicators are reported in order to show the effectiveness of the simulation model to predict energy generation for such PV system. (C) 2011 Elsevier B.V. All rights reserved.

133. **Title:** Spatial resolution limit study of a CCD camera and scintillator based neutron imaging system according to MTF determination and analysis
Author(s): Kharfi, F.; Denden, O.; Bourenane, A.; et al.
Source: APPLIED RADIATION AND ISOTOPES Volume: 70 Issue: 1 Pages: 162-166 DOI: 10.1016/j.apradiso.2011.09.020 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
Spatial resolution limit is a very important parameter of an imaging system that should be taken into consideration before examination of any object. The objectives of this work are the determination of a neutron imaging system's response in terms of spatial resolution. The proposed procedure is based on establishment of the Modulation Transfer Function (MTF). The imaging system being studied is based on a high sensitivity CCD neutron camera (2 x 10(-5) lx at f1.4). The neutron beam used is from the horizontal beam port (H.6) of the Algerian Es-Salam research reactor. Our contribution is on the MTF determination by proposing an accurate edge identification method and a line spread function undersampling problem-resolving procedure. These methods and procedure are integrated into a MatLab code. The methods, procedures and approaches proposed in this work are available for any other neutron imaging system and allow for judging the ability of a neutron imaging system to produce spatial (internal details) properties of any object under examination. (C) 2011 Elsevier Ltd. All rights reserved.

134. **Title:** Structural, electronic, optical and thermodynamic properties of NaxRb1-xH and NaxK1-xH alloys
Author(s): Fatmi, Messaoud; Ghebouli, Brahim; Ghebouli, Mohamed Amine; et al.
Source: JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS Volume: 73 Issue: 1 Pages: 1-7 DOI: 10.1016/j.jpcs.2011.08.015 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]

A theoretical study of the structural, electronic, optical and thermodynamic properties of NaxRb1-xH and NaxK1-xH ternary alloys in NaCl phase has been carried out using the first-principles method. We modeled the alloys at some selected compositions with ordered structures described in terms of periodically repeated supercells. The dependences on the composition of the lattice constant, band gap, dielectric constant, refractive index, Debye temperature, mixing entropy and heat capacities were analyzed for x=0, 0.25, 0.50, 0.75 and 1. The lattice constants of NaxRb1-xH and NaxK1-xH exhibit a marginal deviation from Vegard's law. A strong deviation of the bulk modulus from linear concentration dependence was observed for both alloys. We found that the composition dependence of the energy band gap is highly non linear and the large bowing coefficient for NaxRb1-xH is sensitive to the composition. Using the approach of Zunger and co-workers, the microscopic origins of the gap bowing were detailed and explained. The thermodynamic stability of these alloys was investigated by calculating the phase diagram. The thermal effect on some macroscopic properties was investigated using the quasi-harmonic Debye model. There is a good agreement between our results and the available experimental data for the binary compounds, which is a support for those of the ternary alloys that we report for the first time. (C) 2011 Published by Elsevier Ltd.

135. Title: Theoretical prediction of the structural, electronic and optical properties of SnB2O4 (B = Mg, Zn, Cd)
Author(s): Allali, D.; Bouhemadou, A.; Bin-Omran, S.
Source: COMPUTATIONAL MATERIALS SCIENCE Volume: 51 Issue: 1 Pages: 194-205 DOI: 10.1016/j.commatsci.2011.07.046 Published: JAN 2012
Times Cited: 1 (from All Databases)

[Hide abstract]
The structural, electronic and optical properties of the cubic spinels SnB2O4, with B = Mg, Zn and Cd, were studied by means of the full-potential (linear) augmented plane wave plus local orbitals method within the local density and generalized gradient approximations for the exchange-correlation potential. The Engel-Vosko form of the generalized gradient approximation (EV-GGA), which better optimizes the potential for the band structures, was also used. The results of bulk properties, including lattice constants, internal parameters, bulk moduli and their pressure derivatives are in good agreement with the literature data. The band structures show a direct band gap (Gamma-Gamma) for the three compounds. The computed band gaps using the EV-GGA show a significant improvement over the more common GGA. All the calculated band gaps increase with increasing pressure and fit well to a quadratic function. Analysis of the density of states revealed that the lowering of the direct gap (Gamma-Gamma) from SnMg2O4 to SnZn2O4 to SnCd2O4 can be attributed to the p-d mixing in the upper valence band of SnZn2O4 and SnCd2O4. We present calculations of the frequency-dependent complex dielectric function epsilon(omega). We find that the values of zero-frequency limit epsilon(1)(0) increase with decreasing the energy band gap. The origin of the peaks and structures in the optical spectra is determined in terms of the calculated energy band structures. (C) 2011 Elsevier B.V. All rights reserved.

136. Title: A new criterion of optimization of the simple multipole coefficients in a modified Green's function for the elastic two-dimensional case
Author(s): Sahli, Belkacem
Source: APPLIED MATHEMATICS LETTERS Volume: 25 Issue: 1 Pages: 77-80 DOI: 10.1016/j.aml.2011.07.014 Published: JAN 2012
Times Cited: 0 (from All Databases)

[Hide abstract]
The question of non-uniqueness in the integral formulation of an exterior boundary value problem in the elastic two-dimensional case has been resolved using the modified Green's function technique. In this work, a new criterion of optimality based on the minimization of

the norm of the kernel of the modified integral operator is established. **(C) 2011 Elsevier Ltd. All rights reserved.**