Abstracts of

National PhD Students Days 2018 (NPSD'2018)

1st Edition, May 4-5, 2018

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Evaluation of functional properties and SDS-PAGE of biopolymers extracted from the swim bladder of Umbrina (*Umbrina cirrosa*)

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Abstract

In the context of a better valorization of co-products of fishing and aquaculture in Morocco, Marine biopolymers were obtained from the swim bladder of "*Umbrina Cirrosa*". The aims of this study are to evaluate the functional properties of this protein biopolymer also to study its electrophoretic characterization by SDS-PAGE. The results relating to the development of the biopolymer during this work attest to important functional properties, namely: satisfactory gel strength, a low solubility and a desired permeability. The SDS-PAGE profile revealed three main bands corresponding to an α chain and a monomer (β chain) which further confirms the reliability of the extraction process carried out in this study.

Key words

Umbrina cirrosa; Swim bladder; Extraction; gel strength; solubility; permeability; SDS_PAGE

Money Management Limits to Trade by Robot Trader for Automatic Trading

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Abstract

The goal is study technical indicators make a module to use it in a robot trader for an automated trading to trade using a good money management technique. We can signalize trading in two main groups, Discretionary trading and Algorithmic trading. The first based on market knowledge, some news, of the trader's intuition. The second consists of two activities: Stock exchange transactions assisted by algorithms that anticipate and promote opportunities for arbitrage, and automated trading that uses algorithms and strategies that are set up as autonomous agent that perform transactions. The objective of this new technology is to allow people to buy, to trade and to invest without the intervention of banks or other financial institutions; Crypto-currencies are highly volatile and can be profitable for any trader's portfolio. Crypto-currencies are not physical currencies, they are electronic currencies, and they are digital asset that remains a given. The technology behind crypto-currencies controls a large part of their value, guaranteeing a secure way to identify and transfer money. The first electronic currency is Bitcoin and Ethereum are the currency to which all other crypto currencies to compare. The difference between discretionary trading and automatic trading cannot reduce to psychology. It makes a big difference between discretionary trading which a human who decides to place an order according to his defined rules, and automatic trading which a software place an order according to the rules of a defined calculation.

Key words

Trading; Discretionary Trading; Algorithmic Trading

Biography

Khalid ABOULOULA a Ph.D. Student in Conception and Realization of Algorithm in Mathematic Informatics for Trading and Crypto-Trading: Electronic Money of Morocco

Morphometric and Bioclimatic Characterization via GIS and Remote Sensing, and Quantification of the Water Erosion Rate of the Oued Issen Watershed (Argana Corridor, Western High Atlas)

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Abstract

Drinking-water supply to the greater Agadir (9.5 Mm³) and the irrigation of the Issen perimeter (13,000 ha) is ensured by the Abdelmomen dam. And due to the growing phenomenon of siltation of its reservoir linked essentially to the water erosion of its large catchment area of the Oued Issen, the characterization of this basin has become an absolute necessity. The latter is located within the Western High Atlas (WHA) including the Permo-Triassic corridor of Argana, covering an area of more than 1303 km² and a perimeter of its contour that is 218 km. It extends 60 km and 35 km in its length and width respectively. It drains into the Oued Issen which is the largest tributary of the right bank of the Oued Souss. Its fan shape is elongated along a NE and SW axis with a compactness index of 1.69, with a fairly long water concentration time of 7h50 min. The altimetric data reveal the mountainous symptoms of its relief, and that the altitude ranges between 800 m and 1600 m remains the most frequent with 66% of the total surface, the pace of the hypsometric curve obtained represents a concave shape in slim which reflects the state of maturity and advanced balance and the tendency to old age and decline. Its altitude varies from 625 m at the

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Abdelmomen dam to 3528 m at the highest peak of this basin, the Jbel Awlim with an average of 1332 m. The overall slope index is 16.96 %, while the average slope of all the catchment areas is 42.29 m/km with a specific gradient of around 612.34 highlights a very strong relief accentuating the risk of water erosion for most of the catchment area. Its hydrographic network is dendritic at an average drainage density of 0.85 km-^{1}. The main Issen River is ranked fifth. The bioclimatic synthesis, using rainfall thermal data and remote sensing, shows a spatiotemporal variation in rainfall and vegetation in an arid to semi-arid climate, with 194 mm in Amsoul at the centre of the Argana corridor, and more than 500 mm towards the old WHA massif regularly covered with snow. The rain erosion index R shows a great variability ranging from 30 to more than 130 in the most watered areas, and which could even lead to a landslide of red silty clays and Permo-Triasic areo-lutites. The analysis of satellite imagery allowed the individualization of the following plant formations: Desert wormwood and jujubier steppes, arganeraie, tetraclinaie, juniperaie, buxaie, iliçaie and high mountain xerophytaie. The water erosion rate calculated directly from the siltation rate of the Abdelmomen dam for a period of 19 years (from 1981 to 2000) is of the order of 1095 T/km²/year, which can testify to intense water erosion at the level of the catchment area of this reservoir.

Key words

Watershed; Oued Issen; Abdelmomen dam; siltation; GIS; water erosion.

Calculation of the radiation dose distribution of the iodine-125 source by GATE/GEANT4

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Abstract

Brachytherapy is one of the most common treatment modalities for cancer treatment. It is a technique of radiation therapy by introducing radioactive sources close or within a tumor volume. These sources produce gamma-rays, which have the same effect on cancer cells as X-rays. This treatment reduces damage to surrounding healthy tissue, thereby enabling limiting side effects. Brachytherapy can be provided using permanent low dose rate (LDR) or temporary high dose rate (HDR) [1]. The aim of this study is to obtain the dosimetric parameters such as radial dose function $g(r)$, anisotropy function $F(r,\theta)$ and dose-rate constant (Λ) of low-energy 125I photon brachytherapy source used to treat prostate cancer. To this end, I used GATE / GEANT4 platform to model 125-iodine source 125I [2]. My calculation was performed in liquid water. The results obtained show good consistency with the published data for the dosimetric parameters of the IsoSeedR I25.S06 (Prostate) brachytherapy source and to measurements published and fixed as recommended values by the AAPM Task Group 43 [3].

Keywords

Dosimetric parameters brachytherapy; radioactive sources; Radiation therapy; cancer; AAPM TG-43

Biography

Lahcen Ait Mlouk was born on December 20, 1987 in Zagora, Morocco. He got his Master's in Physics of Materials and Radiation at Abdelmalek Essaadi University, June 2015. He is currently preparing for a PhD in Modeling of the Radioactive Iodine source by GATE / GEANT4. He is in the team of nuclear physics and transport phenomenon belonging to Physics Department at Moulay Ismail University, in Meknes Morocco.

The Role of the Deformation of the Adoudounian Cover in the placement of Copper Mineralization in the Central Anti-Atlas, Morocco

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Abstract

The Anti-Atlas is located at the northern edge of the West African Craton (WAC). Its general shape is a vast anticlinal oriented ENE-WSW. Composed of a Precambrian base and a late Neoproterozoic to Pleated Paleozoic cover. Many copper occurrences are listed in this cover whose origin is widely debatable. The majority of these copper occurrences are hosted in the basal formations of the infracambrian cover of the Tata-Taroudant group named Adoudounian. Our study focuses on some copper showings and deposits present within this coverage in the Central Anti-Atlas. Its purpose is to highlight the relationship between the deformation and the placement of copper mineralization, in parallel with ongoing exploration work. In order (1) to study the different structures affects the mineralized terrain (2) mineralogical and textural characterization of mineralization (3) to establish a chronology between the different phases of deformation known at the time as well as the possible relationship between these phases and mineralization. At first the Adoudounian cover was deformed during the Hercynian orogeny, which was responsible for an intense structuring. A flexible deformation expressed by anticlinal and synclinal structures with two folded phases, the first of direction NS spilled towards the East, and the second of direction NE-SW. A brittle deformation, with two faults families, an E-W orientation family and a second NNW-SSE family. All mineralized bodies had a stockwork texture and mineralogy identical at all observation scales. This stockwork is contemporary with folded and faulted areas. The spatial relationships between mineralization and structures are evident, advocating epigenetic

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reconcentration related to the hydrothermal circulation of basin brines under a thick sedimentary series.

Key words

Central Anti-Atlas; Adoudounian; cover; deformation; copper mineralization

Biography

AIT-YAZZA Achraf, born on 31/10/1992 in Afella ighir, Tiznit, holder of a bachelor's degree in nature and earth sciences in 2011, Bachelor's degree option: Earth and Universe Sciences at Faculty of Sciences, University Ibn Zohr, Agadir in 2015. Master option: Applied Geology in Natural Resources Prospecting, Faculty of Sciences Ben Msik, University Hassan II, Casablanca in 2017. This year enrolled in first year PhD in Geosciences and Environment, Laboratory Geodynamics of Ancient Chains, Faculty of Science Ben Msik, Casablanca. Travailing on a very important subject from both a scientific and an economic point of view; Scientific through the understanding of the copper mineralization deformation relationship at the provincial level, Economic, because the scientific understanding of the mineralization deformation relationship of a deposit improves the guides.

Effect of Argane Nut Shells' chemical treatments on poly-lactic acid composite's properties

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Abstract

In the last decades, scientists and engineers were more focusing on developing new composites reinforced with natural fillers (such as hemp, jute and coir) in order to decrease the effect of materials on environment and human health, and increase their properties to suit several industries applications. In our work, Argan Nut Shells (ANS), a Moroccan residue obtained from the extraction of Argan oil was used as reinforcement for polyl-actic acid (PLA) biodegradable polymer, in order to improve its mechanical properties. The effect of chemical treatments (alkali treatment, bleaching and silane treatment) was investigated in two particles loading (8 and 15 wt.%), in comparison with the neat PLA, by using Scanning electron microscopy (SEM), Thermogravimetric analysis, hardness and tensile measurements, water absorption and contact angle. These tests were carried out in order to study the morphology, the thermal stability and mechanical properties of PLA bio-composites. The results showed that the use of ANS treated particles as reinforcements enhance the surface adhesion between PLA matrix and ANS particles, and increase the mechanical properties of bio-composites compared to the neat PLA. However, the

results showed that the thermal stability became lower after using chemical treated ANS particles. This work was accepted and published on the international Journal of biological Macromolecules.

Key words

Polylactic acid; Argane nut shells; chemical treatments; mechanical and thermal properties; water absorption

Acknowledgment

Biography

Sana Ait Laaziz is a PhD student in Materials and mechanical Engineering at the National School of Applied Sciences, University Ibn Zohr Agadir, Morocco from 2015 till now, the Master of research was received in Materials, Energy and Environmental engineering from Faculty of Sciences, Ibn Zohr University, Agadir, Morocco in 2014, and Bachelor degree in Physico-chemistry of materials from Faculty of Sciences and Technology, Cadi Ayyad university, Marrakesh, Morocco in 2012.

For the present time, S. AIT LAAZIZ is a part of Materials, Mechanics and Civil Engineering Team, at the the National School of Applied Sciences, Agadir Morocco, also, a part of the Laboratory of Polymer Processing, Institute of Nanomaterials and Nanotechnology (NANOTECH), at Moroccan Foundation for Advanced Science, Innovation and Research (MAScIR), Rabat, Morocco.

Classifying Daily Activities by Using Pre-Trained Convolutional Neural Networks

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Abstract

Visual Lifelogging (VL) is a new process whereby a user called lifelogger acquires his/her information through a wearable device (such as a camera) in varying amounts of details, for a variety of purposes. In other terms, VL could represent a complete and comprehensive black box of human's daily activities and can offer the potential to mine or/and extract knowledge about the way people live their lives. With the advent of sensing technology that allowing efficient sensing of personal activities, both the amount of data available and our ability to process it has increased. This is visible in the popularity and growing interest lent by the scientific community to the hot field of lifelogging. Using features that clearly separate between activities is

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vital for human behavior understanding and characterization. In this paper, we focus more particularly on human activity classification (HAC) captured by a low temporal resolution wearable camera (2/3 fpm). For this goal, we use a powerful machine learning approach, from the field of deep learning, based mainly on transfer learning or what so-called Pre-trained Convolutional Neural Networks (CNN) to classify the daily activities into one of the categorized activities.

Key words

Lifelogging; Daily Activities; CNNs; Transfer Learning; Classification

A contribution to the study of the diversity and exploitation of cartilaginous fish of the Central Atlantic of Morocco.

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Abstract

This research is a contribution to the study the diversity and exploitation of cartilaginous fish in the central area of Morocco. Sharks are a diverse group of cartilaginous fish (Chondrichthyes class) that has evolved over 400 million years. Historically, these fish were considered to have low economic value for industrial fisheries; and therefore they were neglected by fisheries management organizations. Today, many of these fish have become the target of commercial and recreational fisheries around the world, and they are also increasingly caught as bycatch in fishing activities targeting other species. Most of these species have unfortunately slow growth, late maturity, low fecundity and long life, resulting in low population growth rates, so that many shark populations are now reduced and some are threatened resulting in low population growth rates, so many shark populations are now reduced, and some are threatened. The objective of this research study is to present the diversity of sharks landed in the Central Atlantic of Morocco to identify the main available information. We will also present the structure of the fleet, the fishing gear in use, the fishing effort and the marketing channel. Sharks are not only sought for the quality of their flesh, but also for their usefulness in such diverse fields (leather goods, leather trade, chemistry, pharmacology, cosmetology and medicine). The management of shark fisheries in the Central Atlantic of Morocco has been hampered by the lack of biological and fishery data. Global warming also indirectly affects sharks by changing their distribution as well as their behavior patterns.

Key words

Cartilaginous fish; Shark fisheries; Central Atlantic of Morocco; Diversity; Fleet structure; fishing effort; Marketing channel; Management; Global warming

Biographie

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Valorization of the Miocene marls of El Harra site (Fez-Meknes Region) in the field of ceramics manufacturing

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Abstract

Marls are both clay and limestone sedimentary rocks depending on their calcium carbonate composition. They have high resistance in the dry state but their behavior is different when there is contact with water; they become swollen and fragile, which limits their use in civil engineering works and infrastructures. The aim of this work is to study the marls of Fez-Meknes region (Saïs basin). In this region, we focus on the valorization of the marl especially Miocene in ceramics industry. Although in the region of Fez - Meknes, we are only interested in the argillaceous and marly aspects of the basin filled mainly with the marl of the Miocene (Tortonian) represented by the white marls and the deep blue marls. The results obtained from El Harra site are satisfactory considering the different technical parameters. The optimal cooking temperature should start from 1050°C, because these samples (Blue Marls and withe Marls) are carbonated. The addition of a sample rich in phyllosilicates is generally done to improve the apparent density values and decreases the water absorption (an addition between 5 to 15%), and consequently, we have an increase of the resistance and the withdrawals during drying and cooking.

The defects are minor:
• Distortion defects: the cooking is not uniform on the faces of the tiles;
• cracks defects: the cooling was abrupt during the transition 600 -500 ° C.

The increase in temperature and the addition of a sample rich in phyllosilicates makes it possible to improve the ceramic tiles resulting from Blue and withe marls.
In the end, these Miocene marls of El Harra site are well suited for use in ceramics manufacturing.

Biography

Zouhair ATTIMA is a PhD student in Geoscience, Department of Geology, Faculty of Sciences, Moulay Ismail University. He holds a Master degree in Geoenvirenement and Civil Engineering from Oujda University (2012).

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Accounting Standardization in the Agricultural Sector: Issues and Perspectives

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Abstract

Of all the topics that have been the main cause of public action and mobilized the attention of observers that of the gradual imposition of agricultural sector in Morocco in 2014 following the orientations of the development project "Green Morocco Plan". Scaffolded on two essential pillars; the first pillar aims to promote the agricultural exploitation established in favorable rainfed areas to adapt the production to the requirements of the market. As for the second pillar, it affects small farms in mountain areas or oases, this pillar is geared towards the fight against rural poverty by means of social investments in the hope of increasing agricultural income. In the light of this significant change in the Moroccan agricultural sector, farms tend to move away from the family model to move closer to a business model. As accounting legislation could not remain outside this trend, the new accounting framework designed for the agricultural sector was shaped by taking into account the specificities of the sector, particularly the production cycle, the seasonality of the harvests and the management of biological assets.

Keywords

Biological Assets, Agricultural Sector, Fair Value, Historical Cost, IAS 41

PROBLEMATIC:
Our questioning is to question the level of adaptation of the accounting standards to the peculiarity of agricultural sector as well to address future perspectives to better organize and formalize agricultural enterprises

OBJECTIVES:
•To record the Moroccan academic production in accounting dedicated to the agricultural sector;
•Deal with the different peculiarities of agricultural sector management, and propose new practices and tools to ensure the adequacy of accounting standards with the reality on the ground;
•Explain the context of agricultural evolution and the constraints that hinder the implementation of an accounting framework that can reflect the situation of farms;
•Highlight prospects for improvement and development of accounting standardization in the agricultural sector.

MOBILIZED THEORIES
•The theory of the agency (Jensen and Meckling, 1976, Charreaux, 1987, 1999, Breton 1986) is commonly proposed as a theoretical analysis framework for the study of issues related to the dissemination of accounting information and its use in corporate governance mechanisms;
• The theory of regulation comes to lift the veil on the deficiency of the regulation of the financial publications of the firms that do not reflect the exact economic and financial reality of the firm because of the heterogeneity of the accounting principles.

METHODOLOGY
• First, carry out a thorough theoretical development to mobilize the theories and paradigms necessary for our research. At this level, we have also emphasized local, regional, national and international research on the theme of our research.
• Second, an exploration of the research field, Souss Massa, through an internship with an accounting firm and visits to the accounting departments of the region's farms.
• Third, interviews will be held with stakeholders involved in the agricultural tax and accounting sector to understand accounting practice in the agricultural sector. This empirical work will also consist of submitting a questionnaire to a sample of accountants in order to assess the specificity of agricultural accounting in relation to other sectors.
• Fourthly, a treatment of the data collected to arrive at a global synthesis on the benefit that this new agricultural accounting plan can bring and to propose a comparative study between the case of Morocco and France.

Fragility of water resources and the mutation of oasis landscape in Toudgha basin

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Abstract

The oasis space is a milieu where the over exploitation of resources leads to continuous degradation process. The protection of oases becomes a question not only of national interest but a continental as well. It therefore constitutes a priority. The water question is a prerequisite for oases rehabilitation. It is at the heart of national plan preoccupation in planning in which water is a major problem. Throughout the years, oases have seen many occasional perturbations caused by severe droughts, floods, ecologic disequilibrium and migration. All these combined factors have progressively transformed a space of production into a life one in which the population

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survival is assured by the remittances of the emigrants abroad and also by the adoption of other activities (outside agriculture). This accidental human intervention has weakened the ecosystem and is responsible for the horrible vulnerability of oasis landscape. The widespread of pump stations is behind the over exploitation of hydro resources which in turn has led to the diminishing of water resources to a critical level. In order to confront this environmental disequilibrium and its socioeconomic effects: adaptation and correction measures should be taken before it is too late. First to meet the needs for the development of the people living in oases by adopting sustainable ecological steps; chiefly for oases water resources and reduce the excessive risks of torrents for the upstream of valley. With the mobilisation of all actors concerned, we will reach to avoid the lack of water in downstream of the valley, thanks to the ecological regulation. All these will contribute to the stabilisation of oasis system.

Keywords

Oasis; water resource; disequilibrium; adaptation measures

Biography

Lahcen AZOUGARH PhD student possessor of master in planning and urbanism in the national institute of planning and urbanism - Rabat 2015.
These are the following projects done:
New town CHRAFAT: Choice of site and effects of projects; Tanger 2013-2015
Territory project: Rabat May 2013
Participative approach for the project of habitat; France 08-17 March 2013.
State play and diagnostic of a commune; 03 June to 25 July 2012.
Practical introduction to project evaluation 21-22 October 2012

Analytical text exploitation: application to social networks

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Abstract

The Web and also the social media networks gather a rich content in multitude areas which interest's companies, including customer's reviews, there claims, expectations and competitive aims. The Web content may interest the political analysts as well, especially relative to polls of opinions, feeling and appreciations of different political tendencies. The text mining acquaints the economic, social or political actors with relevant information to inspire those actors for the development of initiatives, plans and programs, and also to conceptualize the processes of their governance. The text mining or Text Analytics belongs to the field of artificial intelligence. The analytic exploitation of texts is focused on methods, techniques, and special tools to take advantage of unstructured written texts, in particular, from social networks (Facebook, LinkedIn) in order to extract meaning for strategic, technological, marketing, commercial political or social purposes. Ideally, the goal is to make from the text mining, a collaboration between computer scientists and linguists.

Keywords

Text mining; Analytic extraction; social networks

Biography

Sara Baali is a PhD student at the Ecole Nationale Supérieure d'Informatique et d'Analyse des Systèmes – ENSIAS, University Mohamed the V Rabat Morocco. During January-July 2016, she did an internship at the SSDIA laboratory in ENSET Mohammedia, during this internship she worked on automation of distributed database operations. During 2016-2014, she holed a master's degree in Distributed Information System at ENSET Mohammedia, University Hassan II Casablanca Morocco.
Her research interests Data Engineering and Text Mining and include information retrieval, Artificial Intelligence and Machine Learning, Clustering Algorithms, social media networks.

Silicon nanowires: An outline of fabrication, synthesis, properties and application

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Abstract

Microelectronics has influenced evolution of modern civilization, in particular by allowing development of Inforormatics, Robotics and Aeronautics. the invention of transistor on December 23, 1947 by the Americans researchers John Bardeen, William Shockley and Walter Brattain, researchers who received the Nobel prize of physics for their works in 1956, was the beginning of microelectronics history; transistor is the elemental brick of any integrated circuit. Microelectronics industry has focused on three objectives in order to ensure its growth including realization of smaller electronic components, reliable and less expensive devices. In order to meet these requirements, MOS transistors has been shrink continuously according to the famous Moore's Law, which predicted that every 18 months, an integrated circuit will contain twice its number of transistors. This has improved device packing densities on chip, enhanced circuits speed and improved performance to cost ration for microelectronics products. Classic scaling rules were followed until 2000s when they have known multiple divergences due to channel short effects. In order to maintain Moore's law, nanotechnology has attracted great interest among electronics researchers, it enables to bring another technology revolution to semiconductor industry, it allowed introducing new materials and devices with the size in nanometer scale. Consequently, silicon nanowires have attracted a great interest and have been considered as promising candidates to replace microelectronics devices in future integrated circuits. This paper will give a general review of silicon nanowire properties, methods of fabrication and their use in different applications.

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Biography

Salah-ddine Krit received the Hability Physics-Infromatics from the Faculty of Sciences, University Ibn Zohr Agadir morocco in 2015, the B.S. and Ph.D degrees in Software Engineering from Sidi Mohammed Ben Abdellah university, Fez, Morroco in 2004 and 2009, respectively. During 2002-2008, he worked as an engineer Team leader in audio and power management Integrated Circuits (ICs) Research, Design, simulation and layout of analog and digital blocks dedicated for mobile phone and satellite communication systems using Cadence, Eldo, Orcad, VHDL-AMS technology. He is currently a professor of Informatics with Polydisciplinary Faculty of Ouarzazate, Ibn Zohr university, Agadir, Morroco. His research interests include Wireless Sensor Networks (Software and Hardware), computer engineering and wireless communications, Genetic Algorithms, Gender and ICT, Smart Cities. https://kritsalahddine.blogspot.com/

Lahoucine EL MAIMOUNI was born in Zagora, Morocco, in 1970. He received in 2005, the Ph.D. degree in electronics from Institute of Electronics, Microelectronics and Nanotechnology (IEMN) University of Valenciennes, Valenciennes, France. In 2006, he joined the Polydisciplinary Faculty of ouarzazate, Ibn Zohr University, Morocco. In 2011, he received his Habilitation à Diriger des Recherches (HDR) from the Faculty of sciences, Ibn Zohr University, Agadir. At present, his research activities are focused on acoustic wave propagation in piezoelectric structures, BAW resonators, piezoelectric sensor, acoustic wave resonators and filters for RF-MEMS, and audiovisual techniques for image and sound.

Kaoutar Bendaoud is graduated in Electronics and Automatics Engineering from the National School of Applied Science of Tangier, Morocco in 2015.She is currently a PhD candidate at the Polydisciplinary Faculty of Ouarzazate, Ibn Zohr University, Morocco. Her research interesets include linear regulators, DC-DC power converters, switching converters for mobile applications.

Production and Quality Management of Artisan Leather Treatment Process –Fes Chouara Case

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Abstract

Traditional tanning is the first step in leather processing before shaping it to produce the different items. Now, the appearance of the modern tannery threatens its survival, so it need to be developed, in other words, displaying the knowledge of artisans and improving their income through support in the production of quality skins and responding to trends in the current leather market. It is also a question of make them more aware of the integration of the quality dimension in the tanning process. The present study consists of continuously improving the quality of the leather tanning process in the traditional tannery, taking as a case the tannery of the old medina of Fez. Thus, develop the marketing of the articles produced, through the management of flows and stocks included in the in the supply chain of this tannery. For this, we have detailed the whole process of treatment of skins, and the different axis of production management and tanning process management within the traditional tannery of the old medina of Fez.

Keywords

Quality management; Production; traditional; Process; supply chain; tanning

Biography

-Samir EL GHAZI enrolled in 2nd year doctoral cycle at the CEDoc of the Faculty of Science and Technology at the Sidi Mohamed Ben Abdellah University of Fes (2017/2018), he obtained the diploma of a State Engineer in Process Engineering, Energy and Environment in 2016, and a diploma of preparatory studies at engineering schools in 2013

-BENTAMA Jilali Professor of Higher Education, grade C at the School of Technology, Fez, Responsible for the University of Montreal's Research Laboratory for Process Engineering and Technology (2006-2013), Responsible for the research team Process Engineering and Environment (since its creation in 1994).

Lines of research:

• At the level of the University Doctorate: Synthesis of $AlPO_4$ monocrystals by hydrothermal route, characterization and piezoelectric application.
• At the level of the State Doctorate: Physico-chemical study of phosphate with anions PO_4^{3-}, piezoelectric applications and non-linear optics.
• At the research laboratory level: Ceramic materials, nanomaterials and nanocomposites, mineral membranes based on natural clay, Membrane separation processes.

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-OUAZZANI KAMAR Professor of Higher Education at the School of Technology, Fez, PhD in Chemistry, Sciences and Engineering of Materials and Processes, Entitled «Membrane separation processes: Bioreactor with clay membrane, Bio-clogging, hydrodynamic detachment method», Center of Doctoral Studies: «Sciences and Techniques of the Engineer", Faculty of Science and Technology of Fez, May 2016.

University habilitation, Faculty of Sciences Dhar Mehraz, Specialty Chemistry of Materials, Fez, April 2006.
State Engineer, National School of Mineral Industry (ENIM), Engineering Department of Industrial Processes, Rabat, June 1994.

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Some numerical methods for solving variational inequalities problem

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Abstract

The theory of variational inequalities is a theory that encompasses the problems of optimization, minimax, economic equilibrium and games, as well as many other problems. This theory is essentially developed by the specialists of partial differential equations. These inequalities arise in particular from the problems of mechanics and physics and can be reformulated in terms of variational inequalities, which allows a complete mathematical treatment of the basic inequalities. The theory of variational inequality has had a great impact and influences the development of several branches of pure and applied sciences. Interest in this problem can be measured through its applications in different areas such as economic equilibrium models, transport problems in operational research. In these last few years the theory of variational inequalities, is being developed very fast. There are a variety of techniques to propose and analyze the different algorithms to solve variational inequalities. This work consists in developing other methods of solving these problems and the improvement of the existing methods makes it possible to minimize the cost and save the time, which will contribute to the economic development of the country.

Keywords

Variational inequalities; equilibrium problem; fixed point problem; projection method; monotone operator; iterative algorithm

Biography

Ahmed EL HABOUZ is the PhD student in applied mathematics at the National School of Applied Sciences, Ibn Zohr University, Agadir, Morocco. Received his specialized master's degree in teaching mathematics from the Higher Normal School, Cadi Ayyad University, Marrakech, Morocco. His research interest is variational inequalities problem.

Simulation of a Cobalt 60 source using Monte Carlo N-Particles Extended (MCNPX)

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[2]Departments of Physics, FS, UMI, Meknes Maroc.

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Abstract

Brachytherapy HDR (high dose rate) has been widely accepted in recent years, especially for the treatment of gynecological cancers and tumors of other organs that are difficult to access for low dose techniques because of their relatively larger size and lower strength of LDR sources [1]. HDR brachytherapy utilizes a single miniaturized source which moves step by step through implanted after loading devices to achieve the desired dose distribution by choosing an appropriate number of radiologic points.

More and more sophisticated treatment planning systems are used. They can be combined with modern image information; the dose distribution is more and more conformal to the PTV (Planning Target Volume). Brachytherapy consists of a very local irradiation. The dose is delivered by one or several sealed sources.

The purpose of this study is the dosimetric information of the Co-60 source manufactured by BEBIG Eckert & Ziegler [2] BEBIG GmbH, Germany, these dosimetric data can be used as TPS calculation data (treatment planning systems). Using the extended Monte Carlo N-Particles (MCNPX), then compare it with the updated formalism TG-43U1 of AAPM [3]. In addition, to facilitate the process of controlling the quality of TPS.

Keywords

Monte Carlo; brachytherapy HDR; MCNPX; cobalt 60; high dose rate

Biography

Said ELBOUKHARI PhD student in Medical Physics, FS, UMI, Meknes. Master degree (applied materials and catalysis) from the FS, UMI, Meknes in 2015. Medical physicist in charge of brachytherapy and radiotherapy services, Alhayat Oncology Center from the end of 2015.

High electron mobility transistors HEMT based on GaN.

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Abstract

We present a mathematical model of the GaN based HEMT high electron mobility transistors. The calcul of carrier concentration in a two-dimensional electron gas 2-DEG (ns) and the threshold voltage (vth) necessary the resolution of the Poisson-Schrödinger equation. We will express the current-voltage output characteristics (Ids-Vds) of the HEMT transistor for the two operating modes of the HEMT transistor (linear and saturation). Similarly, the influence of the voltage of the grid Vgs on the concentration ns for different AlGaN layer thicknesses dd and Al compositions. The impact of the AlGaN layer thicknesses on the threshold voltage Vth.

Keywords

Keywords: HEMT; GAN Nitrure de gallium; two dimensional electron gas (2 DEG); electrical characteristics (Ids-Vds).

Biographie:

FARTI Azzeddine enrolls in the Faculty of Sciences Ain chock Casablanca grade PhD student specialty Physical

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Science Specialty electron devices in 2016/2017, in theme of "the influence of temperature on the electrical characteristics of GaN-based HEMT transistors" in 2014-2016 studies a technical master in electronics signals and automated systems, the end-of-study project was under the theme "Grid fault analysis of MOS transistors by the Terman method"

Techno-economic Assessment of a Wind Energy Project at Dakhla in Morocco

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Abstract

This paper provides the essential steps to assess the theoretical, technical and economical wind potential. It reports also the key requirement to make a decision on investment in a wind energy project. The wind data were obtained at height of 50 m during 5 years at Dakhla city in Southern Morocco. The wind data analysis and wind theoretical potential evaluation show a mean wind speed of 7.72 m/s with prevalent north-east wind direction, Weibull shape and scale parameters equal to 3.75 and 8.53 m/s respectively and a yearly wind power density of 354.84 W/m^2. This indicates that the concerned site is categorized as class 3 and it is favorable for stand-alone wind energy project. For technical assessment, six turbines with a hub height of 80 m and in which the rated power ranges from 1.5 to 2 MW were tested. The wind speeds were extrapolated at this height. For each turbine, the operating probability, the gross wind power output, the net energy output after considering the overall loss factor and the net capacity factor as a performance indicator were calculated. It was found that Acciona AW 82/1500 is the best turbine which achieved the maximum value of net capacity factor (47.46 %). This turbine is the most appropriate to be installed in Dakhla regarding the economic assessment too. It is ranked first for cost of energy and payback period and second for net present value with values of 0.0194 $/kWh, 3.98 years, 144,243.9279 $ respectively.

Keywords

Wind rose; wind power density; wind energy output; capacity factor; cost of energy; net present value; payback period; Morocco

A Model of Smart home/ Smartphone system

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Abstract

The smart home has become an important topic that deserves more research and innovation. It is a kind of evolution that will improve the habit of housing in the coming years by providing an easy, secure and comfortable lifestyle. The Smart home/Smartphone system is a two-part system: Hardware that groups together any electrical or electronic elements such as sensors, detectors and microcontrollers. The second part is the Software that designates programming IDE or the development environment. This document aims to provide a model of a smart home controlled via a mobile phone. The present model is flexible, flexible and above all low cost. The proposed system can be remotely controlled from any location using an Android application installed on a Smartphone.

Keywords

Smart home; Smart home; Smartphone

Biography

Khaoula Karimi is currently a PhD student in Polydisciplinary Faculty of Ouarzazate, Department Mathematics and Informatics and Management, Ibn Zohr University Agadir, Morocco. Her research interests design and implementation of Smart-home/Smartphone systems. She received the Engineer Degree in Software engineering from Faculty of Sciences and Technologies, Settat, Morocco, in 2015.

Salah-ddine Krit received the B.S. and Ph.D degrees in Microoectronics Engineering from Sidi Mohammed Ben Abdellah University, Fez, Morocco. Institute in 2004 and 2009, respectively. During 2002-2008, he is also an engineer Team leader in audio and power management Integrated Circuits (ICs) Research. Design, simulation and layout of analog and digital blocks dedicated for mobile phone and satellite communication systems using CMOS technology.
He is currently a professor of informatics- Physics with Polydisciplinary Faculty of Ouarzazate, Ibn Zohr University, Agadir, Morocco. His research interests include wireless sensor Networks (Software and Hardware), computer engineering and wireless communications.
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QSAR study of Imidazothiazole propenones derivatives as potential anticancer agents by DFT-QSAR models

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Abstract

A series of Imidazo-propenones were evaluated for their cytotoxic effects against human cancer cell lines A549 (lung adenocarcinoma epithelial cell line). Quantitative Structure – Activity Relationship (QSAR) have been investigated in a series of 23 imidazothiazole-prop-2-en-1-one derivatives to correlate the activities and structures by combining DFT and 3D QSAR. The compounds are represented by chemical descriptors calculated from the molecular structures with their topological, geometrical, constitutional structure, and quantum chemical methods.
The principal component analysis (PCA); linear (Multiple linear regressions); and nonlinear (artificial neural network) models were used to relate the structural features structures to their reported activities. The ANN model was tested by leave-one-out –cross-validation to use it to predict the activity of new compounds. In this work, the results obtained indicate that we proposed a models constituted of relevant descriptors. It is worth noting that such combination of several calculated parameters to the drug structures obtained could be useful to development of newer chemotherapeutic agents.

Keywords

Biological activity; 3D-QSAR; DFT study; Human lung cancer; Imidazo-propenones; Computational studies.

Biography

Lafridi Hind was born in 01 September 1988 in Ouarzazate. She got her Bachelor degree in materials chemistry in 2009 and her Master's degree in Chemistry of natural substances in 2011 from University of Cadi Ayyad, FST Marrakech. During 2012- 2016, she worked as a Laboratory manager in advanced analytical testing, agronomic consulting, and environmental project management. She is currently preparing her PhD in Polydisciplinary Faculty, University Ibn Zohr, Ouarzazate, Material Sciences, Processes, Environment and Modeling Laboratory.
Her area of research includes Bioinformatic analysis, identification and optimization of drugs.

Real-time preprocessing of cardiac signals to an embedded implementation

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Abstract

ECG or the electrocardiogram is a signal representing the electrical activity of the human heart. The contraction of the cardiac muscles is done due to the spontaneous stimulations of the sinus node. These electrical pulses are detected non-invasively using electrodes and then processed before being visualized [1]. In order to eliminate the various undesirable noises that affect the ECG signal and that can destroy the clinical information, we propose two methods of denoising, the first is based on an adaptive double threshold filter (ADTF), and the second on the discrete wavelets transform (DWT). The goal of the ADTF is to calculate three elements for each window of the ECG signal: its average, the higher threshold and the lower threshold. The thresholding consists of comparing the median value of the window to the two adaptive thresholds and assigning it the value of the lower threshold or the higher threshold if it is under the lower threshold or above the higher threshold respectively, or keeping its value if it is between the two thresholds [2-3].
The ADTF algorithm was evaluated in [2] using MATLAB R2014a. And compared to other recently published methods such as EMD [4] and soft threshold DWT [5], and it gives very good results and seems simple to apply comparing it with other methods that require a lot of computation. Since the ECG signal is a signal that contains several spectral components, it is also non-stationary and often affected by noise correlated to the signal, such as muscle artifacts. For this reason, multi-resolution analysis proves to be a more suitable tool for the treatment according to Donoho [6]. Thus, we opted to use the DWT as in [3, 7, 8]. This technique exploits the effect that noises are represented by the set of wavelet coefficients of low amplitude while most of the energy of the useful signal is concentrated in the few coefficients of high amplitude. As a result, the elimination of noise can be accomplished by putting the low coefficients to zeros following a thresholding operation followed by reconstruction of the signal using the inverse DWT. In order to guarantee the real-time processing of ECG signals, we proposed to parallelize the algorithms and implement them on different embedded architectures such as CPU, GPU and FPGA. For the choice of the best solution among those proposed, our algorithms must be designed with different languages that are: C ++, VHDL and OpenCL.

Keywords

ECG; ADTF; DWT; CPU; GPU; FPGA; Real time processing; parallelism

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1st Edition, May 4-5, 2018, Université Ibn Zohr Agadir Maroc, Ouarzazate, Morocco

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Analysis of radioactive signals based on blind source separation

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2National Centre for Nuclear Energy, Sciences and Techniques (CNESTEN), Rabat, Morocco

Abstract

In this work, we treat a new technique based on Blind Source Separation (BSS) to count just the pulses of the radioactive element used in gamma scanning [1]. Indeed, the output of a nuclear detector has several pulses with different amplitudes, are due either to the distribution of natural radiation in the scan area or to the existence of radioactive elements surrounding the detector. In our study, we used several radioactive sources and a NaI detector [2] to capture the radioactive pulses, and for a good analysis of the data, we apply different algorithms of BSS [3] to estimate the signal of the radioactive element concerned. In the end to classify the algorithm, we calculated the Performance Index of separability (PI) and Signal-to-Interference Report (SIR) [4]. When the best separation is got, a simple discriminator and an electronic card can be applied to count the number of pulses as a function of time.

Keywords

Blind source separation BSS; gamma scanning; NaI detector; radioactive pulse

Biography

MEKHFIOUI Mohcin: PhD student in the second year of the Electrical Engineering and Energy Systems Laboratory, Faculty of Science, University ibn Tofail in Kenitra, Morocco, and graduated from a specialized Master "Microelectronics", during my training and my internships I was able to develop a solid competence and experience in embedded system, programming of electronic boards and automatic. My research interests include the separation of electrical signals for a good characterization of the useful signal

Ultrasonic testing of the corrosion influence on steel plates: experimental study

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Abstract

The degradation of the steel plates physical parameters by corrosion are studied by ultrasonic techniques. These are the intrinsic parameters steels interest, currently, researchers, because they are very interested in studies of damage by corrosion. We have also mentioned that their measurement by conventional laboratory methods is very restrictive because these methods each have limitations and disadvantages. A new method is developed to measure these parameters as a function of the immersion time in the acid solution HCl (corrosion). In this work we start with the implementation of the experimental set of the ultrasonic technique by transmission and reflection, then we present the experimental approach followed this study. Subsequently, we analyze experimental measurements of different acoustic and mechanical properties of each sample. The Ultrasonic testing is based on the determination of ultrasonic parameters ie longitudinal and transversal velocities in the corroded steel samples studied during this work. We proceeded by two methods: the ultrasound reflection technique and the ultrasonic transmission technique. We used these methods to deduce the ultrasonic parameters of the samples, the experimental measurement of the reflection coefficient corresponding to each sample and finally the plot of the dispersion curves corresponding to each corroded steel plate. This study consists in the analysis of the corrosion phenomena evolution on the different samples of steels as a function of immersion time in the corrosive solution (HCl). The corrosion resulting from corroded steel is analyzed by monitoring changes in ultrasonic parameters. The results of this study show that the method used is very efficient to characterize of the corrosion effect on the corroded steel plates, for acoustic characterization purposes.

Keywords

Steel; Corrosion control; Transmission; Reflection; Ultrasound; Nondestructive testing68

Biography

Lahcen Mountassir received the Ph.D degrees in Instrumentation, Materials and Information Processing and Master's degree in Instrumentation and Telecommunication from the Faculty of Sciences, Ibn Zohr University, Agadir, Morocco in 2013 and 2017, respectively. His area of expertise is oriented to the modelling and characterization of damaged materials by non-destructive techniques.

Vehicle detection and classification: Application in real-time video surveillance of road traffic

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Abstract

Theoretical studies have shown that the decreasing cost of digital cameras, as well as security issues, lead today to a

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rapid development of intelligent video surveillance systems. However, these systems have limitations because of certain constraints such as shadow objects, illumination conditions and occlusions. This implies a slight negative influence on the operation and accuracy of video surveillance in the road sector. The contribution to solving the problems mentioned above was our motivation to design an on-board video surveillance system applied to road traffic. Based on video footage from a fixed camera, the realized CCTV system can generate real-time data on the flow of vehicles across that road. The results generated will be useful for operators to take the necessary security measures to ensure the safety, reliability and smooth flow of traffic. The designed method is based on estimating the background as the core of the detection phase. The classification phase uses the extraction of shape-related characteristics to identify the different types of vehicles detected. Vehicle tracking is achieved through an algorithm based on the positions of previous and current vehicles. The removal of vehicle occlusions was successfully performed using the shape features that were extracted from moving vehicles. Occlusion detection is performed later based on an analysis of the values of these characteristics. Nevertheless, the completed results demonstrate that the counting methodology in traditional road traffic video surveillance systems based on a localized virtual detector can be improved in terms of accuracy by implementing the method proposed in this work. Further studies could be conducted in the future to demonstrate the effectiveness and robustness of our work on a much larger test scale.

Keywords

Intelligent transportation systems; Vehicle detection; Occlusion handling; Vehicle classificaion; Background subtraction; Feature extraction.

Biography

Zakaria, Moutakki (born in: Casablanca, Date: 25 July 1988)
Scientific Degree PhD. Student
University study: Faculty of sciences, University Ibn Zohr. Morocco
Scientific and university degrees. Publications:
Zakaria Moutakki, Ouloul, I. M., Afdel, K., & Amghar, A. (2017). Real-Time Video Surveillance System for Traffic Management with Background Subtraction Using Codebook Model and Occlusion Handling. Transport and Telecommunication Journal, 18(4), 297-306.
Zakaria Moutakki, Tarik AYAOU, Karim AFDEL and Abdellah AMGHAR. Prototype of an embedded system using Stratix III FPGA for vehicle detection and traffic management. In : Multimedia Computing and Systems (ICMCS), 2014 International Conference on. IEEE, 2014. p. 141-146.
Fields of research: Computer vision. Intelligent transportation systems. Embedded systems.
Imad, Ouloul Mohamed (born in: Taza, Date: 30 July 1989)
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Scientific and university degrees. Publications:
Mohamed Imad OULOUL, Zakaria MOUTAKKI, Karim AFDEL and Abdellah AMGHAR. An Efficient Face Recognition Using SIFT Descriptor in RGB-D Images. International Journal of Electrical and Computer Engineering, 2015, vol. 5, no 6.
Fields of research: Computer vision. Embedded systems.

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Scientific Degree: Dr.
University study: Faculty of sciences, University Ibn Zohr. Morocco
Scientific and university degrees. Publications:
Abdessamad Elboushaki, Rachida Hannane, Karim Afdel, Lahcen Koutti, A robust approach for object matching and classification using Partial Dominant Orientation Descriptor, In Pattern Recognition, Volume 64, 2017, Pages 168-186.
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Fields of research: Image Processing and Analysis. Computer Vision. Machine Learning

Abdellah, Amghar
Scientific Degree: Dr.
University study: Faculty of sciences, University Ibn Zohr. Morocco
Scientific and university degrees. Publications:
Mourad, Derra & Bakkali, F & Abdellah, Amghar & Sahsah, H. (2017). Estimation of coagulation time in cheese manufacture using an ultrasonic pulse-echo technique. Journal of Food Engineering.
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Fields of research: Cryptography. DNT. Embedded systems. Microelectronic, Utrasonic.

Proposed Solution Minimized Energy of sensor nodes in Wireless Sensor Networks Based on Hierarchical Routing Protocols

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Abstract

In Wireless Sensor Networks, Energy efficient is one of the most important issues to reduce energy consumption of each nod and increase the lifetime of the network sensor. Several routing protocols are deployed to minimize energy and secure all data transmit to the sink (Base Station), the hierarchical routing protocols is widely adopted solution for reducing energy consumption for each nods, in the other, reduce energy consumed of nods is automatically increase the lifetime of the network, that is why it's very important to choose routing protocols that consume less

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1st Edition, May 4-5, 2018, Université Ibn Zohr Agadir Maroc, Ouarzazate, Morocco

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energy to increase the life time of WSN, In this paper, we proposed our new protocol to resolve the problem of energy consumption and increase the life time of WSN. In first, we study and compare the results simulation of existing state-of-the-art protocols (i.e. LEACH, PEGASIS), and compare our results simulation with our proposed methods using Matlab Simulink. Experimental results show that our proposed protocol performs better than existing state-of-the-art protocols (i.e. LEACH, PEGASIS) in terms of stability period, number of live nods during number of rounds and increase the lifetime of WSN.

Keywords

WSN; lifetime; Energy; LEACH; PEGASIS; Rounds; Matlab

Biography

Hassan Oudani received his Master's degree in Network and system from the Faculty of Sciences, University Ibno Zohr Agadir, Morocco, in 2009. He is currently a PhD student in Polydisciplinary Faculty of Ouarzazate, Ibn Zohr University Agadir, Morocco. Network administrator in the Urbain Agency of Ouarzazate-Zagora, Morroco. His research interests include wireless sensor Networks Design and implementation of a security protocol suitable for wireless sensor network at the polydisciplinary Faculty of ouarzazate,Ibn Zohr university, Agadir, Morocco.

Salah-ddine Krit received the B.S. and Ph.D degrees in Microelectronics Engineering from Sidi Mohammed Ben Abdellah university, Fez, Morroco. Institute in 2004 and 2009, respectively. During 2002-2008, he is also an engineer Team leader in audio and power management Integrated Circuits (ICs) Research. Design, simulation and layout of analog and digital blocks dedicated for mobile phone and satellite communication systems using CMOS technology. He is currently a professor of informatics-Physics with Polydisciplinary Faculty of Ouarzazate, Ibn Zohr university, Agadir, Morroco. His research interests include wireless sensor Networks (Software and Hardware), computer engineering and wireless communications.

Lahoucine EL MAIMOUNI was born in Zagora, Morocco, in 1970. He received in 2005, the Ph.D. degree in electronics from Institute of Electronics, Microelectronics and Nanotechnology (IEMN) University of Valenciennes, Valenciennes, France. In 2006, he joined the Polydisciplinary Faculty of ouarzazate, Ibn Zohr University, Morocco. In 2011, he received his Habilitation à Diriger des Recherches (HDR) from the Faculty of sciences Ibn Zohr University, Agadir. At present, his research activities are focused on acoustic wave propagation in piezoelectric structures, BAW resonators, piezoelectric sensor, acoustic wave resonators and filters for RF-MEMS, and audiovisual techniques for image and sound.

High field magnetization investigation and mean field theory in nanocrystalline Pr2Co7Hx (0 ≤ x ≤ 3.75) hydrides

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Abstract

The present work represents a study of the effect of H insertion on the microstructure and magnetic properties of $Pr_2Co_7H_x$.This alloys are analyzed by X-ray diffraction. The Scanning Electron Microscopy (SEM) is used to confirm the influence of the hydrogen insertion on the grain size of $Pr_2Co_7H_x$ hydrides. In Fig.1 we display the hysteresis loops and the corresponding first magnetization curves at T=293K of $Pr_2Co_7H_x$ hydrides were measured using (PPMS9) Quantum Design. The exchange interactions and Curie temperature are deduced from the curves M(T) temperature dependence of magnetization by the Mean field theory [1]. Several original magnetic parameters were extracted from the approach to saturation magnetization studies. However, the results were explained in the framework of random magnetic anisotropy model [2].

Geological Interpretation of Aeromagnetic Elevations of the Middle Atlas (Morocco)

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Abstract

The Middle Atlas is an intercontinental chain, consisting of high NE-SW-oriented mountain barriers in the meso-atlasic domain. The Middle Atlas includes two different structural and geomorphological entities: the tabular Middle Atlas and the Middle Atlas. From this investigation on the aeromagnetic data on the area covering a large part of the atlas medium, we draw the preliminary results. The map reduced to the pole shows the presence of positive anomalies that are related to volcanism. The most intense with a strong gradient are attributed to plio-quaternary volcanism. It is easy to define the zone with thick castings

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of the thin zones. The less intense are related to the triassic lavas whose magnetization, seen the alteration of the rock and the antiquity, must be less intense produce less intense anomalies. The elongated positive anomalies that follow the major accidents highlight the presence of triassic lava, outcrop or shallow.

- The areas occupied by the anomalies of very low intensity highlight areas of magnetization deficit generally related to sediment filling such as deposits centers.

- The various enhancement, contact detection and depth processes: analytical signal, Euler deconvolution, "tilt angle", horizontal derivative, have made it possible to propose several lineaments, part of which correspond to mapped faults, and one part supposed. The structural map thus produced will serve as a guide for future fault surveys.

- The magnetic card reduced to the pole and extended upwards attenuates short-wave anomalies and shows a simplistic vision. Indeed, we distinguish from South to North, pleated atlas means dominated by positive anomalies. The average tabular atlas with intermediate intensity anomalies while in the extreme north of the basin of Saiss anomalies become low intensities when we removing the constant (probably 5000 nT).

Keywords

Keywords: Middle Atlas, geology, geophysics, aeromagnetic, quaternary volcanism, the North Middle Atlas accident, the accident of Tizen Tkhaten, Oasis Montaj.

Biographies

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Augmented Reality services implemented within Smart Cities, based on an Internet of Things Infrastructure, Concepts and Challenges: an overview

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Abstract

The world population is growing rapidly, nowadays, 50% of the world's population lives in cities. By 2050, this percentage will jump to 70%. Cities occupy 2% of the earth's surface and produce 80% of gas emissions. New urban challenges have emerged in terms of health, environment, mobility, governance, and others. To respond effectively and pragmatically to these needs, many cities started to exploit new technologies and its paradigms, like Augmented Reality and Internet of Things, to became more intelligent and smart, to solve urbanism problems, and consequently improve the quality of citizens' life. This paper gives a general presentation, of Smart City concept and Internet of Things infrastructure, and presents some examples of Augmented Reality services, for Smart City using Internet of Things. Moreover, a synthesis of their current limitation factors is presented.

Mining the Web for learning ontologies: State of art and critical review

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Abstract

The aim of the paper is to investigate and present the subject of building ontologies using the Semantic Web Mining that is defined as the combination of the two fast-developing research areas Semantic Web and Web Mining. Web mining is the application of data mining techniques to the content, structure, and usage of Web resources and The Semantic Web is the second-generation WWW, enriched by machine-processable information which supports the user in his tasks. This can help to discover global as well as local structure "models" or "patterns" within and between Web pages and ontology extraction witch is the automatic or semi-automatic creation of ontologies, including extracting the corresponding domain's terms and the relationships between those concepts, and encoding them with an ontology language for easy retrieval. As building ontologies manually is extremely labor-intensive and time-consuming, there is great motivation to automate the process. This paper gives an overview of where the two areas meet today, and discuss ways of how a closer integration could be profitable.

Keywords

Semantic Web; Web Mining; ontology; Konwledge discovery; ontology learning

Biography

Mohamed El Asikri received the Engineer Degree in Computer Science from IbnoZohr University in 2010 from ENSA Agadir, Morroco, He is also a networks and systems administrator engineer, He is currently a PhD student in Polydisciplinary Faculty of Ouarzazate, Department Mathematics and Informatics and Management, Laboratory of Engineering Sciences and Energy, Ibn Zohr University- Agadir. His research interests Knoledge discovery and Web Semantic Mining

Minimizing congestion, a crossroads: Optimization of traffic signals based on wireless sensor networks

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Abstract

The number of vehicles in Morocco continues to increase over recent years, leading to a saturation of the road network. This saturation represents the main cause of congestion, accidents, and pollution. These problems have

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major consequences on the economy of the country and the daily life of the citizen. One possible solution to this problem is to effectively manage road traffic by acting on the time of the green light and red light in order to give more priority to overloaded road segments branch of a crossroads Figure 1) will balance the traffic load on the roads. Our solution is based on mathematical calculation, the principle of fluid mechanics and simulation to calculate: Firstly, the speed of elongation of the stopper created by the passage of fire to red, ie the corresponding density according to the duration of the red light (Situation 1). Secondly, the green light duration Tv required to evacuate the stopper created by the red light for a duration Tr (Situation 2), in order to optimize or implement a light plan to favor a fluid circulation at any time of the day.

Keywords

Minimizing congestion, Optimization of traffic signals, wireless sensor networks, Density.

Biography

Mustapha Kabrane received his the first Master's degree in Electronics, Automatics and Computer, from the Faculty of Sciences, University of Perpignan Via Domitia , France, in 2012, and his the second Master's degree in Computer Sciences from Institute of Sciences and Technology, University of Valenciennes, France, In 2013. He is currently a PhD student. His research interests include wireless sensor Networks implemented in the management and control of urban traffic at the Polydisciplinary Faculty of Ouarzazate, Ibn Zohr university, Agadir, Morroco.

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Lahoucine EL MAIMOUNI was born in Zagora, Morocco, in 1970. He received in 2005, the Ph.D. degree in electronics from Institute of Electronics, Microelectronics and Nanotechnology (IEMN) University of Valenciennes, Valenciennes, France. In 2006, he joined the Polydisciplinary Faculty of ouarzazate, Ibn Zohr University, Morocco. In 2011, he received his Habilitation à Diriger des Recherches (HDR) from the Faculty of sciences Ibn Zohr University, Agadir. At present, his research activities are focused on acoustic

Modelling of MEMS transformer Rosen piezoelectric by means of a polynomial approach

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Abstract

The polynomial approach method has been extended to the modelling of MEMS transformer Rosen with excitation source. This method makes use of Legendre polynomials series to express the mechanical displacement components and the electric potential which are introduced into the equations of motion of the piezoelectric structure. The formulation, based on three dimensional equations of linear elasticity, take into account the high contrast between the electroded and non electroded regions. The principal advantage of this method consist of incorporating, directly, the electrical source, the boundary and continuity conditions into the governing equations by the use of position-dependent physical constants and by a wise choice of the polynomial expansions for the independent variables, mechanical displacement components and electric potential. Both harmonic and modal analyses were studied, will have to define the resonance and anti-resonance frequencies, electrical output admittance and voltage gain of the transformer Rosen.

Keywords

Piezoelectric transformers, polynomial approach, resonance and, anti-resonance frequencies, electrical output admittance, voltage gain.

New D-π-A organic dyes for DSSC: a computational investigation

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Abstract

In this work, we have designed several novel organic donor-π-acceptor dyes. The electron acceptor group is the 2−cyanoacetic for all dyes, whereas the electron donor is the bridged thienylen-phenylene with varied unit based on a series of X moieties and their influence was analyzed. These dyes were studied by using density functional theory (DFT) and its extensible time dependent DFT (TDDFT).

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However, the electronic properties (HOMO, LUMO, Gap...) were determined from the most stable conformations obtained from completely optimized structures. The absorption properties (λmax, Etr, f) of these molecules are obtained by TD-B3LYP/6-31G(d) method. Moreover, the open-circuit photovoltage (Voc) and the key parameters in close connection with the short-circuit current density (Jsc), including light-harvesting efficiency (LHE), injection driving force (ΔGinject) were discussed. These properties suggest these dyes as good candidates for use in organic dye-sensitized solar cells.

Keywords

DSSC, organic dyes, optoelectronic, TD-DFT.

Biography

Abdelkrim Amkassou, received his Master's degree in Materials Engineering, Energy and Environment from THE Faculty of Sciences, Ibn Zohr University of Agadir, Morocco, in 2015. He is currently a PhD student in Faculty of Science, Ibn Zohr University of Agadir, Morocco, His research interests include renewable energies and materials of photovoltaic cells.
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Calcium carbonate precipitation from moroccan phosphogypsum and natural gypsum via carbonation route

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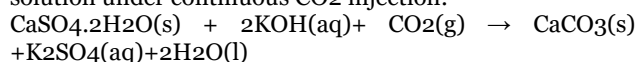
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Abstract

Phosphogypsum (PG) is an industrial waste of the phosphoric acid wet production process. PG is produced by reacting phosphate rock with sulfuric acid. Every year fairly large quantities of phosphogypsum are produced by the phosphoric acid production units, which has a harmful effect on the environnment, especially on the marine environment. On the other hand, calcium carbonate ($CaCO_3$) has various advantages: it is abundant, inexpensive and used to improve certain properties of composite materials. In this research, the precipitation of calcite from Moroccan PG was studied under specific conditions in the presence of a potassium hydroxide solution under continuous CO_2 injection:
$CaSO_4.2H_2O(s) + 2KOH(aq) + CO_2(g) \rightarrow CaCO_3(s) + K_2SO_4(aq) + 2H_2O(l)$
Experiments were carried out to study the precipitation of calcium carbonate resulting from the mixing of aqueous solutions of Moroccan phosphogypsum and potassium hydroxide (KOH). At 25 degrees C, a carbonation method was developed to synthesize $CaCO_3$ particles in a dilute solution of

portlandite $Ca(OH)_2$ prepared from PG. To better understand the precipitation process, in situ pH and conductivity measurements were performed. In this work, we studied the effect of different parameters (the initial concentration of $Ca(OH)_2$, reaction time and temperature) on the morphology of calcium carbonate. The physicochemical properties of the synthesized $CaCO_3$ were analyzed by SEM, XRD, EDS, FTIR, and TG/DTA. In all cases, it was observed the general similarity between the corresponding X-ray diffraction patterns of calcite precipitated from pure $CaSO_4$ and from waste phosphogypsum. It was believed that this conversion could be economically attractive for recycling phosphogypsum and manufacturing a useful product.

Keywords

Phosphogypsum; calcium carbonate; mineral CO_2 sequestration

Biography

My name is BOUARGANE Brahim i'm from Guelmim, born in 1992, I'm graduate the Master's degree in basic chemistry from the Faculty of Sciences of Tetouane in 2017. I am currently in the first year of my thesis at the Laboratory of Process Engineering, under the direction of Mr. ATBIR Ali, Professor at the Faculty of Sciences of Agadir, Department of Chemistry.

Photoelectrocatalytic properties of zinc phosphate thin films electrodeposited on metal substrate

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Abstract

Thin films of $Zn_3(PO_4)_2$ with outstanding photoelectrocatalytic performance (PEC) have been successfully electrodeposited on metal substrate via cathodic electrodeposition method. Chronopotentiometry, cyclic voltammetry (CV) and electrochemical impedance spectroscopy (EIS) were used to study the photoelectrochemical properties of this material. X-ray diffraction patterns as well as SEM images showed that the structures and morphologies of the electrodeposited $Zn_3(PO_4)_2$ films depended on the applied current densities and deposit times. The discoloration was followed in order to evaluate the photoelectrocatalytic capacity, it was found that the degradation of RhB was enhanced, which is induced by the synergetic effect of electrodegradation and photocatalysis. The photoelectrocatalytic activity of a $Zn_3(PO_4)_2$ photoanode was not reduced after 2 times recycling. Results obtained in this work have shown that the ZnP prepared electrode exhibit photoactivity and may be used for photo assisted electrolysis for organics degradation in aqueous effluents.

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