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Abstracts

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ID#	Submission
129	<p>Marios Palyvos, Georgios Vokas, Chafic Salame and Panagiotis Papageorgas. Comparison study of the technical characteristics and financial analysis of electric battery storage systems for residential use (details)</p> <p>Abstract. One of the major energy issues of our days is reliable and effective energy generation and supply of electricity grids. In recent years there has been experienced a rapid development and implementation of Renewable Energy Sources worldwide. On one hand, many Gigawatts of grid-connected renewables are being installed and on the other many Megawatts of hybrid renewable systems for residential use are being installed making use of electric battery systems, in order to cover all daily energy and power needs during. New types of batteries are being developed and many companies have made great progress providing a variety of electricity storage products. The purpose of this research is firstly to highlight the necessity and also the importance of the use of energy storage systems and secondly, through detailed technical and financial simulation analysis using HOMER Pro-optimization software, to compare the technical characteristics and performance of energy storage systems by various leading companies when installed in a residential renewable energy system with a specific load and at the same time to provide the most efficient system economically. Results concerning the operation and the choice of a storage system are derived.</p>
59	<p>Bushra Al-Maiyaly, Ali Mealany, Hanaa Mohammed and Auday Shaban. HgBa₂Can-1CunO₂n+2+δ Superconducting thin films Prepared by Pulsed Laser Deposition (details, 5)</p> <p>Abstract. In the present work, HgBa₂Can-1CunO₂n+2+δ superconducting thin films with (100) nm thickness were (n=1, 2 and 3) prepared by Pulsed Laser Deposition technique on glass substrate at R.T (300) K, have been synthesized. The effect of Cu content on the structural, surface morphology, optical and electrical properties of HgBa₂Can-1CunO₂n+2+δ films were investigated and analyzed. The results of XRD analysis show that all samples are polycrystalline structure with orthorhombic phase, the change of Cu concentration in samples produce changes in the mass density, lattice parameter and the ratio (c/a). AFM techniques were used to examine the surface morphology of HgBa₂Can-1CunO₂n+2+δ superconducting films, the study showed the values of surface roughness, average diameter, and Root Mean Square exhibit a change with increasing Cu content in the sample. The optical properties of these films within the wavelengths (300-1100) nm were studied and calculate the optical constants, the estimated energy gap found to be about (2.3, 1.8 and 2.45) eV when the Cu content in samples (n=1, 2 and 3) respectively. The electrical properties of prepared films confirm p-type nature. The electrical resistivity of films prepared at different Cu content found to be in range of (8.060 E+1- 6.393E+4 Ω.cm) at room temperature (R.T).</p>
26	<p>Rami Qaoud and Djamal Alkama. The impact of Constructivism Density of The urban Tissue in Improving The physical Urban Ambience of The Free Space - The street- For Saharian Cities. The study of The case City of Biskra. (details, 5)</p> <p>Abstract. The urban tissue is designed for a major and an important role, which is the protection of the free space under the physical data that surrounds it. Thus the protection of the free space is one of the most important objectives of the constructed mass for the tissue. That's why the success of the tissue in providing a great deal of the protection from the physical factors is considered as a success in the design and engineering of this tissue. Here comes this research. Which is based on a comparative study of the ambience physical elements, via two urban tissues that contain different constructivism density and the conclusion of the effect of every tissue in improving the physical ambience for the free</p>

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	<p>space - the street -.the research is based on the comparison of three main axes of the physical ambience, they are 1-the Thermal ambience, 2-the visual ambience. 3- the Audio ambience. The cording to that the methodology of the research was due to the field of experience in order to raise the real values of the physical ambiances every two hours, each three consecutive days. According to the measurement stations that is positioned via the three types of the street engineering ($H \geq 2W$, $H=W$, $H \leq 0.5W$). Through the obtained results and with the comparison of those values. We noticed and recorded the difference between these values in the three types of street engineering. The difference in the thermal values of the air reached 4°C, and the difference in the direct natural lighting periods of the high amount reached six hours. Even the recording of difference in the level sound values can reach 15 (db) between the three types. This difference in values indicates the impact of constructivism density in improving the physical urban ambience within the free space - street- for urban tissue.</p>
31	<p>Zainab Naser Jameel. Synthesis of The gold Nanoparticles with Novel Shape via Chemical Process and Evaluating The structural, Morphological and Optical Properties (details,  5)</p> <p>Abstract. In this work, the gold nanoparticles have been prepared via chemical method by using Gold TetraChloride $\text{HAuCl}_4 \cdot 2\text{H}_2\text{O}$ as starting material. The reduction and stabilization material have been employed to get more stable gold nanoparticles (Au NPs). The structural properties, the determination of the size of the gold nanoparticles and the novel shape of the gold nanoparticles have been studied by using the scanning electron microscopy (SEM) and particle size analyzer (DLS). Electrical properties and the stability of the gold nanoparticles colloid have been investigated by Zeta Potential. As, well as demonstrated the optical properties by UV-Visible Spectrophotometer at room temperature. The results of this research have been indicated by Particle Size Analyzer analysis and the Scanning Electron Microscope show the size and the shape of the colloid of gold nanoparticles which find in the range of nanoscale about (20-40) nm. Zeta Potential measurements show the excellent stability of gold nanoparticles colloid at value (-33 mV). Optical properties studied the absorbance peak of gold nanoparticles colloid at ($\lambda = 537.2$) nm.</p>
25	<p>Marco Ragazzi, Silvio Fedrizzi, Elena Cristina Rada, Gabriela Ionescu, Rodica Ciudin and Lucian Ionel Cioca. Experiencing Urban Mining in an Italian Municipality towards a Circular Economy vision (details,  5)</p> <p>Abstract. Selective waste collection in Italy has undergone significant changes over the last decade, highlighting very different approaches from one region to another. Research results presented in this paper are underlying differences between geographical regions and use them as a model of good practices to improve the less optimized systems. In the last decade, the Trento City Council has established a goal – the optimization of selective municipal solid waste collection – that led to a very low amount of recyclable materials in the residual fraction. More than that, for the first time sanitary textiles have been considered as a separable fraction at the source; for a long time this type of waste was considered negligible. These actions were transformed in a recycling program coordinated together with local recycling companies. This paper deals with factors associated with waste recycling, like specific criteria (waste containers selections for door-to-door collection, public awareness and tariff) and solutions (door-to-door bins, warnings, criteria for historic centers). The tourist characteristics of Trento makes it an interesting model for similar towns that are facing with the problem of optimization criteria. This opportunity is discussed referring to a Romanian case.</p>

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105	<p>Amal Herez, Mahmoud Khaled, Rabih Murr, Ahmad Haddad, Mohamad Ramadan and Hisam Elhage. Using Geothermal Energy for cooling - Parametric study (details,  5)</p> <p>Abstract. Geothermal heat pump is an efficient application derived from geothermal energy. It exploits earth as a heat provenance to extract heat from it and heat space in winter or it uses earth as heat sink to release heat to it and cool the space during summer. This paper presents a parametric study to investigate the effects of inlet and outlet water temperatures and ground temperature on the length of the pipe of a horizontal geothermal heat pump system during cooling process. The type of the pipe tested is Poliplex - PE100 Series 1 – polyethylene of 16 mm inner diameter and 20 mm outer diameter. The obtained results revealed that, at 30 °C water inlet temperature, 27 °C water outlet temperature and 21 °C ground temperature, the length of pipe needed is 716 m. Also, the results showed that higher water inlet temperature and ground temperature increases the required pipe length; however, higher water outlet temperature decreases the needed length of the pipe.</p>
117	<p>Ayobami Busari, Joseph Akinmusuru, Adebajji Ogbiye and Joshua Okeniyi. Self-compacting concrete in pavement construction: Strength grouping of some selected brands of cements (details,  5)</p> <p>Abstract. This paper investigates strength properties of some selected cement brands for self-compacting concrete application in pavement construction. Three brands each of Portland limestone cement grades, CEM II/A-L 42.5 (Brand A), CEM II/B-L 32.5 (Brand B) and CEM II/B-L 32.5 (Brand C), were used. Rheological test was carried out using the L-Box, V-Funnel and slump cone and compressive and flexural strength tests were carried out on the hardened concrete, at 3, 7, 14, 21 and 28 days. Brand A exhibited the highest compressive strength right from 3rd-day test and maintained this performance through maturity (the 28th-day test). Also, Brand A had the highest flexural strength of 4.54 MPa as against 4.5 MPa specified for road construction at 28 days, while Brand B and Brand C exhibited strengths that were lower. Although Brand C showed good rheological properties, it exhibited the lowest strength properties among the cement grades. These findings engender implication that cement grade lower than 42.5 should be discouraged in pavement construction.</p>
78	<p>Marco Ragazzi, Manfredi Maniscalco, Vincenzo Torretta, Ferronato Ferronato and Elena Cristina Rada. Anaerobic digestion as sustainable source of energy: A dynamic approach for improving the recovery of organic waste (details,  5)</p> <p>Abstract. Organic waste fraction disposed to landfill induce the release of greenhouse gas and leachate due to its degradation. The collection and treatment of such typology of waste is imperative in order to decrease environmental pollution and improve recycling rates. The aim of this study is to define a flexible and economically viable system to process all the RMSW and the OFMSW coming from SC, in a territory with low recycling rates. To that purpose, the survey provides a dynamic system which comply with future increases in the efficiency of SC systems. Dry anaerobic batch reactors are considered in order to treat RMSW and to operate the OFMSW, as long as SC improves. Four scenarios were considered, in particular for 10%, 25%, 50% and 75% SC rate. Biogas production has been estimated for evaluating the potentiality of each SC rate, since it can be exploited for generating electric energy and heating. Biogas generation is enhanced of the 21% by increasing from 10% to 75% SC, making the system more profitable under an energetic point of view. Moreover, the amount of electric energy which could be sold per year for each SC scenario was calculated, resulting as 631,293 kWh for the 10% SC and</p>



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	442,527 kWh for 75% SC. Considerations on the exportability of the approach were also added in the paper, highlighting the affordability of the anaerobic digestion system in other countries.
133	<p>Joshua Okeniyi, Abimbola Popoola and Cleophas Loto. Corrosion-inhibition and compressive-strength performance of Phyllanthus muellerianus and triethanolamine on steel-reinforced concrete immersed in saline/marine simulating-environment (details, 5)</p> <p>Abstract. This paper studies the corrosion-inhibition and compressive-strength performance of Phyllanthus muellerianus leaf-extract and triethanolamine (C₆H₁₅NO₃: TEA) on steel-reinforced concretes that were immersed in 3.5% NaCl medium, a saline/marine simulating-environment. Concentrations of the plant-extract and the organic chemical were employed, individually and in synergies, as admixtures in steel-reinforced concrete samples. From these, corrosion monitoring techniques of corrosion-potential and corrosion-rate were applied before subjecting the samples to compressive-strength testing/analyses. Results showed that Phyllanthus muellerianus outperformed TEA in anticorrosion and compressive-strength effects but the synergies exhibited further improvements on TEA performance on these test-criteria in the steel-reinforced concretes for the saline/marine test-environment.</p>
109	<p>Ahmad Elmais, Mohamad Hawa, Rami Ammar, Mohammad Abou Akroush, Farouk Hachem, Mahmoud Khaled and Mohamad Ramadan. Improving Photovoltaic Panel Using Finned Plate of Aluminum. (details, 5)</p> <p>Abstract. Researchers are continually striving to improve the efficiency of photovoltaic panels with which solar cells convert light energy to electrical energy. The objective of this paper is to improve photovoltaic (PV) efficiency by maintaining them below maximum allowable temperature. The use of heat sinks has been conducted to address this problem by using an optimum design of finned plate of aluminum. The results showed that an increase of 1.75% in electrical efficiency and 1.86 Watt in output power when used a finned plate of aluminum.</p>
108	<p>Rami Ammar, Ahmad Elmais, Farouk Hachem, Mahmoud Khaled, Mohamad Ramadan, Mohammad Abou Akroush and Mohamad Hawa. Using phase change material in under floor heating (details, 5)</p> <p>Abstract. In the last decade, studying of thermal energy storage systems using phase change material (PCM) in the field of building has been increasingly developed. Indeed, it decreases the energy consumption used for indoor heating system while maintaining maximum thermal comfort for the occupants. This paper presents a study on application of white petroleum jelly, which is used as a phase change material, with an electrical under floor heating system. To proceed, a prototype of a well-insulated house is constructed. An experimental study was carried out in a relatively cold weather to investigate the thermal behavior of using phase change material. Results show that at an average ambient temperature (T_{avg}) of 14°C the electrical consumption was shifted by an average of 6 hours due to the latent heat stored in PCM.</p>
99	<p>Nadia Mohamed Eshra. Operation of Thermal and Drinking Water Stations with Different Nile Level Conditions (details, 5)</p> <p>Abstract. Nile River is the main source of water for the thermal power and drinking water stations. These stations were constructed depending on specific water level and allowable percentage of decreasing. Thermal power stations are representing the main electricity source in Egypt. The total number of the stations around thirty-six distributed overall</p>



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	<p>Egypt in different types; steam, gas and combined. Most of them distributed along the fourth reach of Nile River (extend from Asyut to Delta) and its branches; Rossetta and Damitta. Total capacity of the stations estimated by 18568 Mw. Thermal power stations are constructed near water sources for purposes; using the water for the operation in steam turbines, cooling or for both. Drinking water stations distributed along the Nile River from Aswan to Delta in different capacity of operations. Fourth reach contains large number but the collected data for 17 stations only; their capacities ranged between 1.4 M.m3/day for Imbaba station to 0.15 M.m3/day for kafer Elelo station. The goal of paper is studying and assessment the impact of Nile water level change on the both type of stations operation in fourth reach. This is performed by focused on the worst case of water level. Geographic information system module is established to assemble the data of stations and analyze. Hydro Dynamic flow model is applied to estimate the Nile level in minimum flow through different cross sections along the reach with step 10 km, the cross sections are extracted using GIS from contour maps were produced in 2003-2007, NRI. The operation status of each station is analysed and the required flow for safety operations is estimated</p>
73	<p>Farida Bendebane and Salima Bendebane. Sorption of methylene blue by Luffa cylindrical. Optimization and modeling using a response surface methodology (RSM) (details,  5)</p> <p>Abstract. Luffa cylindrical fibers were used to remove a cationic dye methylene blue (MB) from aqueous solutions. Screening factors which can affect the sorption has been discussed in Part I in a separate paper. In this study, a response surface methodology (RSM) based on three-level three-factorial Box–Behnken design was used. The effects of three variables, such as the ratio(R) mass of adsorbent/initial concentration of dye, pH0 and size of particles on the adsorption capacity for MB were examined. The optimum conditions (R of 527.27, pH0 of 6 and very fine particle size) for achieving an elimination of 90.04% were determined by the results of statistical analysis. © 2017 The Authors. Published by Elsevier Ltd. Peer-review under responsibility of the Euro-Mediterranean Institute for Sustainable Development (EUMISD).</p>
56	<p>Anaam Watan, Suad Aleabi, Ridha Risan, Kareem Jasim and Auday Shaban. Preparation and Physical Properties of Doped CdBa2-x</p> <p>SrxCa2Cu3O8+δCompound (details,  5)</p> <p>Abstract. In the present paper, two-steps of solid state reaction method have used to prepare the homogeneous compound CdBa2-x SrxCa2Cu3O8+δ by substitution of strontium (Sr+2) into the barium (Br+2) sites, this substitutions were taken as x = 0.0, 0.20 and 0.30. The optimum calcinations were 800 CO and for sintering within 845-850 CO. The structural was studied by using X-ray powder diffraction (XRD) and scanning electron microscope (SEM). The XRD analysis showed the structures a polycrystalline with tetragonal diagram and the change of the strontium concentrations produce a change in lattice parameters(a, b and c-axis). c/a, density of mass (ρm), volume fraction (Vphase) and shore hardness for all our samples .It has been found that the optimum Tc(offset) = 113 K has been found for the composition CdBa2-x SrxCa2Cu3O8+δ with x = 0.30. The A.C electrical conductivity as a function of frequency is used to find the dielectric constant. It was found that changing in dielectric constant; dielectric loss factor and tangent loss were produced by increasing the Sr concentration</p>
17	<p>Marco Ragazzi and Francesca Ghidini. Environmental sustainability of universities: critical analysis of a green ranking (details,  5)</p>



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	<p>Abstract. Today, the principles of sustainability and sustainable development represent key points in policy development and activities of the Higher Education Institutions, both for their impact on the environment and the role they play in society. In the wake of the spread of rankings in Higher Education Institutions over the past decades, Universitas Indonesia in 2010 implemented an environmental sustainability ranking, called UI GreenMetric World University Ranking. The aim of this paper is to carry out a constructive analysis of the GreenMetric Ranking in order to improve and strengthen the ranking method. This analysis is based on the review of the scarce literature, the survey of questionnaire and on an evaluation of the guidelines that have been evolving over time. Despite the improvements made over time by the authors, the critical review of the methodology points out that the GreenMetric Ranking still falls short on some issues. Furthermore, the analysis shows the incomplete compliance with the Berlin Principles. The GreenMetric Ranking though, lays a good foundation for the incorporation of the principle of sustainability within the Higher Education Institutions and reflects the need to quantify the efforts towards sustainability. Therefore, there is the need to make this method more scientific and rigorous, suitable to plan sustainability policies in universities.</p>
50	<p>Anestis Anastasiadis, Stavros Konstantinopoulos, Georgios Vokas and Maya Julian-Salame. Economic benefits from the coordinated control of Distributed Energy Resources and different Charging Technologies of Electric Vehicles in a Smart Microgrid (details)</p> <p>Abstract. Microgrids are Low and Medium Voltage distribution networks comprising various Distributed Energy Resources (DER), namely distributed generators and storage devices together with controllable or flexible loads that can operate either interconnected or isolated from the main distribution grid as one controlled entity. Electric vehicles (EVs) is a new, promising, technology which will offer a cleaner and more effective means of transportation in the near future. On the other hand, EVs can also act as storage devices, thus offering ancillary services to the grid. The main purpose of this paper is to investigate the economic benefits that can be obtained from the coordinated control of DER and EVs in Microgrid operation. Absence of distributed resources, and therefore satisfaction of the full load from the upstream network, is considered as the base case. Various System Marginal Prices (SMP) are considered. For each scenario, six different charging technologies are examined, including the Vehicle-to-Grid (V2G) technology. In addition, a sensitivity analysis is carried out in order to determine how the variation of some parameters such as batteries' size, EVs number, power charging (in combination with energy charging), charging and discharging limits etc. changes the results. All different cases are compared between them to determine which one is the most advantageous in terms of operational cost.</p>
49	<p>Georgios Vokas, Anestis Anastasiadis, Stavros Konstantinopoulos and Takla Salame. Optimal Power Flow in Systems with high penetration of Electrical Vehicles and Renewable Energy Systems (details)</p> <p>Abstract. Nowadays, the urgent need to reduce emissions has lead to the development of Renewable Energy Sources (RES). Wind energy is a very common renewable source of energy. However, wind is characterized by great stochasticity. So, production may vary from zero to excessive (way above the demand), which makes wind penetration very difficult. Consequently, the need for energy storage is essential. On the other hand, electric vehicles (EVs) offer a new, environmentally friendly and more effective means of transportation. The energy stored in their batteries is used to move the vehicle. Nevertheless, the penetration of EVs will increase the energy demand from thermal plants, and therefore will harm the environment unless it is combined with an increased</p>



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	<p>Renewable Energy penetration. The advantages of combined use of Renewable Energy Sources and Electric Vehicles are evident; EVs can augment wind penetration through their storage capabilities and use some excessive wind energy for environmental-friendly mobility. In this paper, the combination of electrical vehicles, renewable energy (wind generators) and thermal plants is examined as an alternative for the future grids. Various scenarios are being studied; some focus on grid's peak shaving while others on optimal power flow, and, therefore on thermal production reduce which will lead to less environmental pollution. All scenarios are compared between them in order to find the most balanced one.</p>
110	<p>Abdellatif Bouaichi, Ahmed Alami Merrouni, Abdellah El Hassani, Zakaria Naimi, Badr Ikken, Abdellatif Ghennioui, Aboubakr Benazzouz, Aumeur El Amrani and Choukri Messaoudi. Experimental evaluation of the discoloration effect on PV-modules performance drop (details,  5)</p> <p>Abstract. The objective of this paper is to measure and evaluate the degradation impact on a photovoltaic (PV) module exposed for almost two years under Moroccan climate. This degradation is a discoloration spot observed above the module's junction box. For this purpose, the drop of the module's electrical performances has been firstly measured using the I-V tracer PVPM1000X and compared with the initial values given by the manufacturer. After that, and in order to measure the direct effect of the detected discoloration on the power production, comparison between the outputs of the affected module and another one with the same characteristics (taken as reference) has been done. Results show that the module's degradation rate (from the initial state) is of 7.56 %/year. Moreover, the power difference between the affected modules and the one taken as reference was found to be of 13.2 watts in average. Generally, this difference is directly linked to the detected discoloration and it represents a power drop of 5.28% from the module's initial capacity.</p>
101	<p>Ana Cruz Lopes, João Farinha and Miguel Amado. Sustainability through Art (details,  5)</p> <p>Abstract. One of the most prominent urban problems European cities face, is not only the physical degradation of its historic city centers, but also the degradation of their social, economic and environmental context. Moreover, common rehabilitation methods and strategies are often unsuccessful combatting such problem, and new ways and strategies must be researched, tested, and implemented under a new sustainable development policy. Creativity and artistic activities can play an important role in the resolution of this problem. For example, the re-occupation of derelict buildings, through creative and innovative activities, can contribute to resolving the primary issue. While analyzing a comparative case study using three examples: LxFactory in Lisbon, Ateneu Popular 9 Barris in Barcelona, and 59 Rivoli in Paris, it's possible to conclude that their rehabilitation through art and culture, could produce positive side effects leading to social renovation and solid economic activity within itself and its surrounding area, creating new local economies, jobs, new tourists attractions, real estate opportunities and more. Considering the current standpoint and outlook on rehabilitation, as an action and movement of sustainability, especially at the environmental level, and associating it with the arts and culture movement, will allow it to solve the social and economic problem simultaneously. By introducing new dynamic living spaces in unoccupied and derelict buildings also re-energizes the economic value of the building as well as, most importantly, regenerating the actual city.</p>



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53	<p>Ahmed Alami Merrouni, Ahmed Mezrhab, Abdellatif Ghennioui and Zakaria Naimi. Measurement, comparison and monitoring of CSP mirror's specular reflectivity using two different Reflectometers (details,  5)</p> <p>Abstract. Soiling and the resulting specular reflectivity are two of the most important factors influencing the efficiency of the concentrating solar power (CSP) plants. For this reason, and in order to schedule efficient cleaning cycles, it's crucial for the operation and maintenance (O&M) teams to possess accurate and readily available reflectivity measurements of the solar field, especially in periods of the year with high aerosol concentrations. The aim of this study is to initially evaluate the effect of dust on the reflectivity of regular CSP mirrors using two of the most used reflectometers in the market. Those mirrors were exposed at the University of Oujda (Eastern Morocco) for twelve weeks during the arid period of the year. After that, a comparison between the values measured by those devices has been done. Results show that during the dry period, soiling presents an important issue for CSP power plants in Eastern Morocco, where the weekly reflectance drop can reach 30%. Furthermore, accurate reflectivity measurement and the selection of the most adequate reflectometer have an important influence on the estimation of the optical efficiency of the solar field, and consequently on the electricity production.</p>
96	<p>Lilian Malaeb, George Ayoub, Mahmoud Al-Hindi, Liza Dahdah, Abbas Baalbaki and Antoine Ghauch. Quality of Distillate from Solar Stills: is it virtually devoid of biological, chemical and pharmaceutical residuals? (details,  5)</p> <p>Abstract. As fresh and abundant water sources become increasingly scarce, desalination methods based on renewable energy emerge as a potentially sustainable alternative. The solar stills is one such method that has received revived attention recently. Attention has been focused primarily on enhancing the productivity of the still with a very limited number of studies addressing the water quality issue of the distillate produced by the still, as it is often assumed that this distillate is safe to consume without proper analysis. In addition a very limited number of studies have examined the ability of the still to remove conventional and emerging contaminants such as pharmaceuticals. The objective of this paper is to address the bacteriological and chemical aspects of the distillate produced from a number of different water sources using several experimental setups. Results show that moderate temperature alone is not sufficient to kill bacteria hence the importance of ultra-violet light from solar radiation. It is also important that all parts of the still be accessible to sunlight to avoid bacterial breeding at shaded sections. Chemical quality parameters were found to be within the limits recommended by WHO standards for potable water. As for the pharmaceuticals considered, all three compounds that were spiked into the feed water were completely absent from the distillate, however, degradation products were found in the brine. The level of pharmaceutical degradation was influenced by the solar still configuration.</p>
70	<p>Ahmed Amine El Ouchdi. Monte Carlo Simulation of a GaInSb Based MESFET Transistor (details,  5)</p> <p>Abstract. This paper studies electrons behavior in the Ga_{0.5}In_{0.5}Sb based MESFET transistor 65 nm channel length. For this, we employed Monte Carlo Device Simulation which uses the parallel resolution of the coupled Poisson-Boltzmann equations. This coupling allows to calculate the electric field by the Poisson's equation after the modification of the electrons trajectory due to the interactions and to introduce it as an input in the Monte Carlo process.</p>



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45	<p>Tallal Abdel Karim Bouzir and Nouredine Zemmouri. Effect of urban morphology on the road noise distribution. Case Study: the city of Biskra, Algeria (details,  5)</p> <p>Abstract. The present research is conducted in the city of Biskra; focuses on the relationship that can exist between urban morphology and road noise distribution. Ten collective residential areas were sampled to define their noisescapes, using the method of noise mapping. The connection between the morphological characteristics and distribution of road noise with Pearson correlation tests allowed us to define the existence of a strong relationship between the two. The results of this research indicate that the urban morphology has a significant impact on the soundscape; therefore the concern of the noise pollution problem in the early urban design lines is very important and essential to ensure healthy and comfortable sound environments.</p>
42	<p>Alami Merrouni Ahmed, Amrani Abdelillah and Mezrhab Ahmed. Electricity production from large scale PV plants: Benchmarking the potential of Morocco against California, US. (details,  5)</p> <p>Abstract. In this study simulation of the electricity production from a110MWp Photovoltaic (PV) power plant under the climate of Morocco and the US has been done. For this purpose, and based on the meteorological data availability, six sites have been selected (two sites in Morocco and four sites in California). Knowing the fact that the US is one of the leaders in the PV market, a comparative study between the two countries has been conducted in order to Benchmark the electricity production from PV in Morocco. Results show that Morocco can be considered as very competitive in the PV market where the annual production reaches 173GWh in Oujda (Eastern Morocco) and 172GWh in Casablanca. Additionally, with a Performance Ration (PR) of 71%, the simulated 110MWp PV system will be highly performant if installed in Morocco. Those results are very promising, and we believe that they can be attractive for the actors in the PV market to invest in Morocco. That will lead, undoubtedly, to the creation of new jobs and to a sustainable development of the country.</p>
104	<p>Hassan Jaber, Mahmoud Khaled, Jalal Faraj, Thierry Lemenand and Mohamad Ramadan. Effect of Exhaust Gases Temperature on the Performance of a Hybrid Heat Recovery System (details,  5)</p> <p>Abstract. The reuse or reduction of wasted heat supplies an excellent opportunity for cost saving in industrial and residential application. This paper deals with a Hybrid heat recovery system that reuses the thermal energy captured by exhaust gases to produce domestic hot water and generate electric power using thermoelectric generators (TEG). The heat recovery process is mainly affected by the temperature of exhaust gases. The effect of gases temperature on the performance of the system – water temperature and power generated – is studied including different residential applications. It shows that as the exhaust gases temperature increase the heat rate, water temperature, and power generated increases</p>
94	<p>Chafia Mebarkia and Dib Djalel. Ab Initio Study of the Structural and electronic Properties of a new series of quaternary Cu₂XSnS₄ (X = Cd ,Zn) (details,  5)</p> <p>Abstract. In the overall context of the diversification of the use of natural resources, the use of renewable energy including solar photovoltaic has become increasingly indispensable. As such, the development of a new generation of photovoltaic cells based on Cu₂ZnSnS₄ (CZTS), Cu₂CdSnS₄(CCdTS) ,looks promising. CZTS, CCdTS, are a new films absorbers, with good physical properties (band gap energy 1,5 eV[01-03] and 1,45eV[04] Respectively),with a large absorption coefficient over 10⁴ cm⁻¹). Indeed, the</p>



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	<p>performance of these cells exceeded 30% in recent years. In this study we present investigations pertaining to structural, and electronic, properties of CZTS and CCdTS numerical simulation, we used SCAPS to study the performance of solar cells based on Cu₂ZnSnS₄, Cu₂CdSnS₄ To find the effect of Decreases Eg in solar cells. The investigation was done using the full-potential augmented plane wave method implemented in WIEN2k code. The exchange-correlation potential was treated with the generalized gradient approximation mbj-GGA and LDA. Thus evaluate the electrical efficiency η for typical structures of n-ZnO/n-(CdS, In₂S₃) /p-(CZTS, CCdTS) and of n-ZnO/i-ZnO/n-(CdS, In₂S₃) /p-(CZTS, CCdTS) .</p>
100	<p>Panagiotis Papageorgas, Maria Barbarosou, Omar Hamid, Kleanthis Prekas and Chafic Salame. Automatic recognition of electric loads analyzing the characteristic parameters of the consumed electric power through a Non-Intrusive Monitoring methodology (details,  5)</p> <p>Abstract. Non-Intrusive Load Monitoring - NILM consists in measuring the electricity consumption using a power consumption data acquisition system, typically placed in the main supply of the building. Relying on a single point of measure it is also called one-sensor metering in contrast to the common metering hardware that can be embedded in each appliance (electronic metering or e-metering) and in differentiation with the common utility smart meters. NILM is the process in which you are able to disaggregate a set of energy readings over a period of time to determine exactly what appliances have used the power and how much power each appliance has used during that time period. This includes information as to what time the appliance switched on and off and the effect it has on the system in regards to power factor, power harmonics, etc. NILM models are created using historical "training" data from an open access database and, according to the labels associated to these data, one can perform appliance identification, and state identification.</p>
8	<p>Fadhil A. Chyad, Akram R. Jabur and Sabreen A. Abed. Studying Dielectric and Magnetic Properties of Nano Ferrite Functionally Graded Materials(details,  5)</p> <p>Abstract. In a functionally graded material (FGMs) the properties change gradually with position. The property gradient in the material was caused by a position-dependent chemical composition, microstructure or atomic order. In the case of a position-dependent chemical composition the gradient can be defined by the so-called transition function $c_i(x, y, z)$ which describes the concentration of the component c_i as a function of position. The aim of this work is Fabrication a functionally graded materials (FGMs) from soft magnetic and hard magnetic materials in three different set of multiples layers and then studying the dielectric and magnetic properties of the system. The magnetic properties showed that FGM5 better than FGM3 and showed an increase in coercive force (H_c)with increased number of layers. The dielectric properties measured at room temperature with constant frequency 1 MHZ. The FGM7 sample shows a high value of dielectric constant of the order 2.83×10^{-2} and very low value of the dielectric loss tangent.</p>
34	<p>Adel Abdelali, Imed Eddine Nezli and Slimane Benhamida. Geothermometry application to the Continental Intercalaire geothermal aquifer: a case study of Ouargla region (details,  5)</p> <p>Abstract. The aim of this study is to estimate reservoir temperature of the Continental intercalaire aquifer (CI), for possible geothermal exploitation. As CI depth increases, water increases its temperature, under the effect of geothermal gradient. The approach is based on sampling and analysis of water physico-chemical parameters, then</p>



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	<p>hydrochemistry and geothermometry were performed. The results show that CI waters have got a high mineralization, high electrical conductivity values, discharge temperatures of 43 to 52°C and a SO4-Cl-Na-Ca water type that refers to the evaporate albian aquifer. After that, different geothermometers were used that allowed the estimation of the reservoir temperatures (60-80°C).</p>
11	<p>Elena Cristina Rada and Lucian Ionel Cioca. Optimizing the Methodology of Characterization of Municipal Solid Waste in EU Under a Circular Economy Perspective (details, )</p> <p>Abstract. The methodology for the characterization of residual municipal solid waste (RMSW) is available since decades. Some modifications have been introduced in order to modernize it. Now, in order to take into account the targets of the circular economy, an additional effort must be made to be sure of generating the right information suitable for the optimization of municipal solid waste in that frame. In that perspective, the Authors present a few proposals in order to avoid mistakes and to deepen the reliability of the data generated during the analysis performed to classify the residual municipal solid waste in fractions. A new model of characterization is thus proposed, suitable for planning waste management in the frame of the circular economy principles.</p>
95	<p>Bahjat Kadhim. Ablation Characteristics of TiO2 / UPE-PMMA Blend Nanocomposites: Empirical and Simulation Approaches (details, )</p> <p>Abstract. Titanium dioxide (TiO2) nanoparticles as reinforced material in terms of volume fractions are used to fabricate un saturated polyester (UPE) with poly methyl methacrylate (PMMA) blend nanocomposites. Ablation properties have been studied for (20 UPE vol.% and 80 PMMA vol. %) bland polymer in terms of reinforced with nano-TiO2. Ultrasonic dispersion technique was used to prepare the nanocomposites, follow with cold – casting technique using flash Teflon molds at standard conditions. Oxy-acetylene flame technique is using for ablation test. Ablation rate was dropped at high volume fraction of TiO2. Thermal conductivity – ablation rate relationship, displays two mechanisms, the first, associated with the starting of test, is recognized by ideal distribution of TiO2, which leads to thermal dispersion due to the formation of segregated network of thermal conducting paths. The second mechanism is associated with ablation test recognized by shearing cracks appearance, which leads to earlier char production mechanism. Ablation was simulated using finite difference method to predict ablative time.</p>
2	<p>Anissa Ghezloun. The COP 22 New commitments in support of the Paris Agreement (details)</p> <p>Abstract. Abstract : The 196 member countries of the United Nations Framework Convention on Climate Change have succeeded in adopting a first universal historic agreement after two weeks of tight negotiations. The agreement that will enter into force in 2020 aims to limit global warming by the end of this century well below 2 ° C while continuing efforts not to exceed 1.5 ° C. This Agreement will be applied in accordance with equity and the principle of common but differentiated responsibilities. Decides to increase urgently and adequately the support of developed country Parties in terms of financial resources, technology and capacity-building in order to increase the level of ambition of the measures taken by the Parties before 2020. Each Party establishes, communicates and updates the successive contributions determined at national level which it intends to realize. The Parties shall take internal measures for mitigation with a view to achieving the objectives of the said contributions. Loss and damage (natural disasters accentuated by warming, displacement of population, etc.) already suffered by</p>

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	<p>the most vulnerable countries are recognized in the agreement. The Paris Climate Agreement represents an immense advance Because it embodies the first universal legal text obliging the 196 nations plus the European Union and not only the rich countries to fight against global warming, but very insufficient because of the means used for the achievement of the objective fixed (Less than 2 ° at the end of the century). The INDC (provisionally determined national contribution) of Algeria was designed taking into account the conjuncture financial and economic particularly difficult that crosses Algeria, due to the considerable decline in hydrocarbons prices. Its final contribution at the time of the entry into force of the Paris Agreement on Climate Change will be adjusted accordingly. Algeria is entitled to benefit from the international climate solidarity resulting from the Paris Agreement, because it is particularly vulnerable to the effects of the accumulation of greenhouse gases for which it is not responsible.</p>
88	<p>Kareem Jassim, Mohammed Thejeel, Ebtisam Salman and Shatha Mahdi. Study characteristics of (epoxy – bentonite doped) composite materials (details,  5) Abstract. Procedures for preparing ceramic compounds with consisted of bentonite (80 wt %), alumina (10wt %) and silica (10wt %) were examined by solid state reaction technique. The thermal treatment of ceramic sample was studied by X-ray diffraction analysis. The influence of the content of the cordierite and mullite on the gained phase's properties of ceramic compounds specimens was analyzed. We found good insulator with mullite (73.33 wt%) and cordierite (50.10 wt%).The optimum achieved consequences are: Get a ceramic product without any distortion in the it form with the additives (alumina and magnesia) under sintered temperature at (1250°C) and gave the maximum diametrical Strength (σ_D) to 90 MPa. In addition, the best results of the break down voltage (24.8Kv) and dielectric strength (8.3Kv/mm).These results allow us to use the ceramic body in energy storage applications. As a second step: the ceramic product was re-grinded and it mixed in different ratio (5, 10, 15 and 20%) with polymer (epoxy) to prepare composites. The electrical, mechanical and thermal properties of the product have been tested. The electrical, mechanical and thermal properties of the product have been tested. The optimal results have been showed for all properties: electrical at the (5and10%) ratio, mechanical the ratio (20%) only and excellent thermal insulation. Depending on the Composite results can be used in the required electrical insulators industry (voltage bushings applications).</p>
44	<p>Muna Abbas and Ali Abdulridha. Influences of Heat Treatment on Superconducting Properties of Bi_{1.7}Pb_{0.3}(nanoTi_{0.2})Sr₂Ca₂Cu₃O₁₀ +d Thin Film Deposited on Different Substrates (details,  5) Abstract. Films of Bi_{1.7}Pb_{0.3}Sr₂Ca₂Cu₃O₁₀+d with the addition of 0.2 nanoparticles TiO₂ were deposited on different substrates such as crystalline Si and MgO by means pulse laser deposition method (PLD). The post annealing process normally leads to very granular films, develops considerably the surface morphology and interaction between the grains. Therefore, deposited samples have been annealed at different temperatures (Ta) 820 and 840 OC for two hours in oxygen environment. Annealed films were characterized structurally by X-ray diffraction (XRD) and morphologically by two techniques: scanning electron microscopy (SEM) and atomic force microscopy (AFM).Energy dispersive X-ray spectrometric (EDX) was utilized to provide compositional information of the thin films. XRD analysis displayed that two superconducting phases coexist in the samples high Bi-2223 and low Bi-2212 phases. Namely, the dc resistivity measurements show that all the samples exhibit the metallic behavior as a result of the electron–phonon interaction in the Bi-2223 crystal structure. It has been observed the transition temperature T_c for films</p>



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	<p>deposited on Si substrate 115 and 117 K are higher than those deposited MgO substrate 114.5 and 116.5 K on for Ta 820 and 840 OC respectively. Additionally, it has been noted with increasing the annealing temperature, the sample exhibits the smoothest and densest surface morphology confirming that more Ti nanoparticles penetrate into grains or over grain boundaries of the film. This is correlating with the enhancement of the connectivity between the superconducting grains.</p>
113	<p>Djemaa Barrou, Akila Benbouaziz and Djamel Alkama. Spontaneous urban renewal of the former Aurasian settlements in the event of the sustainable development: Case of Dechra Beida, Arris (Algeria) (details,  5)</p> <p>Abstract. This paper is a study focuses on two concepts often used in political and scientific debates, namely urban renewal and sustainable development. The objectives of this study are, on the one hand, the analysis of the process of spontaneous urban renewal in the former Aurasian settlements and the search for a link between this process and the requirements of sustainable development, on the other hand. To do this, we chose the Dechra Beida, one of the oldest and most important human settlements of both the Aures and the agglomeration of Arris. Our approach consists of a comparative analysis of the urban fabric of the Dechra Beida on three different dates (1962, 2010 and 2016) and the data processing was carried out using the software QGIS (2.18.2) and Fractalyse (2.4.1). The results show that spontaneous urban renewal is a process that underpins the development of ancient human settlements and thus fits well with the objectives of sustainability. This is clearly highlighted by the rational use of natural resources as well as the recycling and reconstruction of the urban fabric, which limit the sprawl and waste of peripheral areas.</p>
121	<p>Sharif Al Dajani. Numerical Study of Marine Current Turbine Blade Performance Using CFD (details,  5)</p> <p>Abstract. Green energy extraction from marine currents offers the promise of regular and predictable energy. Since, the success of using marine current turbines to tap the ocean currents is dependent on predicting their hydrodynamic performance. Recently, the CFD is the method choice in the design automotive, industrial components and processes in which fluid or gas flows play a major role. This paper is presented an analysis of the two dimensional flow using commercial CFD software. The 2d flow was simulated for HF-SX NACA foil modified from S1210 NACA foil at various angles of attack with Reynolds number of 1.9×10^5. The hydrofoil was designed with considerations for lift and drag coefficients. The flow was simulated by solving the steady-state governing equations of continuity and momentum conversation combined with the k-ω shear stress transport (SST) turbulence model aiming to study the effect of these angles on the lift and drag coefficients. The computational domain was composed of many cells emerged in a structure way, taking care of the refinement of the grip near the foil blade in order to enclose the boundary layer approach. Hence, all calculations are done at constant flow velocity with altering the angle attack for every flow model tested. The results have shown that the drag and lift coefficient, Cd and Cl coefficient increases with increasing the value of the angle of attack. And ratio Cl/Cd curve related on performance get the peak at 5o angle of attack. Thus the aim of the work was to show the behaviour of the NACA foil blade at these conditions and compare to results of experiment taken from other researchers.</p>



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82	<p>Mohamed Hadj-Kouider, Imed Eddine Nezli and Baelhadj Hamdi-Aissa. The use of spectral responses of surface in the discrimination of soils surface in north of Ouargla (northern Algerian Sahara) by remote sensing (details, 5)</p> <p>Abstract. Quaternary formations occupy all the lower levels of large sedimentary basins, forming thus ephemeral lakes in closed salt depressions, called commonly "sebkhas." They are continental aquatic ecosystems classified as wetlands of inland backwaters (RAMSAR Convention, 1971). They provide several functions; such as aquatic life, geochemical and hydrological cycles. The aim of this paper is to characterize the surface states of salty soils of sebkha Sefioune in the north of Ouargla (South-eastern Algeria), by linking the remote sensing data acquired by satellite and observation and exploration of land in order to differentiate the surface states of the study area (sebkha Sefioune and nearby). The realization of spectral signatures from the satellite image (Landsat 7 ETM +), allowed us to individualize the soil surface states of sebkha Sefioune and its surroundings (North of Ouargla-Algeria) according to the spectral responses of each surface states. This approach allows us to say that the land surface states have different spectral behaviour according to their colour, water content (humidity), structure (roughness,) mineralogical and geochemical nature.</p>
23	<p>Said Grimes, Ammar Bouchair and Hocine Tebbouche. Sustainability of the Expansion Areas for Coastal Touristic Sites "E.A.C.T.S" Such as the case of El-Aouana in Algeria: Indicators for considering biodiversity (details, 5)</p> <p>Abstract. There are many forms of tourism that can be described as "viable" industries, but fail to take into account biodiversity when studying the planning of sites. All these forms of tourism seek to achieve sustainability differently but all agree for the need to minimize the negative impacts of human activities on the environment. However, they consume more non-renewable resource for the search of comfort to satisfy customers who become more and more demanding and sensitive to the ecology of the visited places. Coastal biodiversity offers inestimable wealth in terms of flora and fauna but this diversity is threatened by human activities that attack it directly by soil erosion, overfishing and pollution. Various methods for evaluating sustainability of urban planning instruments and touristic sights are applied throughout the world with different names and impact studies on the environment. Our purpose here is to explore the research works done in this subject and implement the role of biodiversity in the tourism and hotels and to verify which indicators could be adopted for taking into account the biodiversity in the studies of the Expansion Area and Touristic Coastal Sites (E.A.C.T.S) such as El-Aouana town situated in the west of Jijel city, Algeria.</p>
102	<p>Abdelghani Harrag and Sabir Messalti. Three, Five and Seven PV Model Parameters Extraction using PSO (details, 5)</p> <p>Abstract. In this paper, we propose a particle swarm optimization technique for the characterization of the equivalent electrical model of photovoltaic cell. The models with three, five and seven parameters, respectively are considered. The particle swarm optimization algorithm is used as a tool for the extraction of the model parameters by reaching the global minimum solution in a short time with a very good accuracy based on the minimization of the quadratic error between experimental and theoretical characteristics. The simulation results show that the proposed approach is effective for modeling the photovoltaic cell as well as the module.</p>
118	<p>Hocine Kiniouar and Azzedine Hani. Water Demand Assessment of the Upper Semi-arid Sub-catchment of the Kébir-Rhumel Mediterranean Basin (details, 5)</p>



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	<p>Abstract. In the southern Mediterranean countries, levies probably reach the limit level of renewable water resources by mid-century. With an annual storage capacity of 14.6 million m³ Algeria is one of the poorest countries in renewable water resources, in the Mediterranean coastal watersheds, representing 7 % of the land area and accounts for 90 % of total surface runoff of the country. In this paper, we assess water demand to meet the needs of water users in Boumerzoug, the upper sub-catchment of the Kébir-Rhumel basin. The latter is located in the Kébir-Rhumel Mediterranean basin under semi- arid climate with relatively high growth rate of population, agricultural and industrial activities. Using Water Evaluation And Planning system (WEAP), we built a model for managing water demand of Boumerzoug sub-catchment. A business as usual and five scenarii of «water demand " were calculated by WEAP model to simulate the uncertainties over the period of 30 years (2008-2037) : Population growth(1), increase in irrigated crop lands (2), decrease in basic drinking water consumption (3), decrease in basic irrigation water consumption (4) and increase in basic industrial water consumption (5). The results showed that the decrease in basic consumption of drinking water scenario (3) is the best alternative scenario and the most efficient by reducing drinking water demand for about 37 Mm³ in 30 years;</p>
93	<p>Ziadoon Ibrahim, Sameera Ibrahim, Auday Shaban, Kareem Jasim and Marwa Mohammed. Radiological Dose Assessments for Workers at the Italian Fuel Fabrication Facility at Al-Twaitha Site, Baghdad – Iraq with Aid of GIS</p> <p>Techniques (details,  5)</p> <p>Abstract. Abstract The aim of this research is to estimate the annual total effective radiological dose resulting from external and internal exposure, that is expected to workers from some areas of the Italian Fuel Fabrication Facility (IFFF) at Al-Twaitha site, this site is under the Iraqi decommissioning project now, in order to taking the necessary protected precautions to them from these risks, forty soil samples were collected and analyzed from different locations of this facility, which is about 32000 m². The gamma rays spectroscopy technique with High Purity Germanium detector (HPGe) was used. Mixture of radioactive isotopes (232Th, 40K, 238U, 235U) were found in those samples according to the laboratory results. Total doses were manually calculated by special equations, the highest total radiological dose was (9.558 mSv/year) in the chosen area for sample (IFS-7). GIS techniques were used to estimate the entire area doses by applying inverse distance weight interpolation method.</p>
124	<p>Mabrouka Didi, Hamza Haddag, Youcef Driouche and Djelloul Messadi. Modeling and prediction of flash point of unsaturated hydrocarbons using hybrid genetic algorithm /multiple linear regression approach (details,  5)</p> <p>Abstract. A quantitative structure property relationship (QSPR) study is developed using Genetic Algorithm (GA) / Multiple Linear Regression (MLR) for modeling the flash points of 173 unsaturated hydrocarbons, using theoretical molecular descriptors derived from DRAGON software. The studied dataset was randomly separated into two independent subsets: a training set of 139 compounds to build the model and a test set of the removed 34 compounds to validate its predictive ability. The selection of a minimum set of meaningful descriptors was carried out using Genetic Algorithm in the MOBYDIGS Todeschini software. An MLR model of 4 descriptors with a high predictive power was developed for the prediction of the flash points of unsaturated hydrocarbons .The predictive ability of the obtained model was verified using a set of criteria according to Golbraikh and Tropsha and its applicability domain was studied using Williams plot.</p>



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122	<p>Ojo Sunday Fayomi, O.O Joseph and Api Popoola. Structural properties and microhardness performance of induced composite coatings filled with Cocos nucifera-tin functionalized oxide (details, )</p> <p>Abstract. The potential of Cocos nucifera (CJ)-tin functionalized oxide prepared in sulphate bath on zinc based electrolyte was examined in an attempt to improve the structural behaviour and examined the microhardness characteristics of the developed coatings. The microstructural evolution was checked using scanning electron microscope attached with energy dispersive spectrometer (SEM-EDS). The microhardness properties of the composites were investigated by means of high impact diamond base microhardness indenter with an average of 5 relative intervals. The results show a film containing Zn-SnO₂-CJ deposits on the mild steel resulting into strong crystal structure. The effect of Cocos nucifera-tin functionalized oxide as complex agent was noticed to improve the structural build up, strong compactness and decrease porosity.</p>
97	<p>Bedadi Laid and Bentebba Mohammed Tahar. Characteristics of Sand of the Oueds in the Region of Oued Righ (Oued N'SA , Oued M'ZAB and Oued Rtem) in the Making of Concrete in the Arid Regions (details, )</p> <p>Abstract. We usually use, in the making of reinforced concrete, the ordinary sand which is generally extracted from quarry, oueds or from beaches. This material is a necessary element for the concrete, but unfortunately, it is not always available in market and hence makes both rare and expensive despite of its gigantic reserve in the many oueds in the region of oued righ .We have chosen the sand of the oueds as a substitution material in the composition of the concrete taken precisely from Oued N'ssa - Oued M' zab and Oued Rtem. We have opted for an experimental study that deals with the physic-mechanical and chemic characteristics of the sand and its use in the field of concrete construction , as well as the property of this based-sand concrete.</p>
85	<p>Kareem Jasim, Widad Jassim and Shatha Mahdi. The effect of sunlight on medium density polyethylene Water pipes (details, )</p> <p>Abstract. The suitability of medium density polyethylene (MDPE) water pipes beyond (2 years) being stored outdoors was studied. The resistance of MDPE pipes to ultraviolet (UV) radiation was evaluated by measuring changes in tensile strength at break. MDPE pipes under study have two formulations: the first without carbon black (virgin) and the anther with carbon black, the samples were exposed to UV radiation using an accelerated weatherometer for (200 h) to simulate the effect of (2 years) of exposure to sunlight. The values of tensile strength at break of MDPE with C.B have higher values (160.7Kg/cm²) than virgin MDPE(137Kg/cm²) after exposure MDPE with C.B cutoff at 25% of strain with tensile strength about (161Kg/cm²) before exposure to UV radiation, but it is cut off at 50% of strain with the same value of tensile strength after exposure. The percentage of carbon black and the degree of its dispersion have been determined by employing thermogravimetry (TGA) technique and reflected light microscopy respectively</p>
63	<p>Naima Fezzioui, Belkacem Draoui and Claude-Alain Roulet. Impact of Urban density on energy consumption (details, )</p> <p>Abstract. In this work, and from urban energy simulation of a neighborhood in the city of Kenadsa (south of Algeria), we hope to quantify the influence of urban density on energy requirements for cooling and heating of buildings. The software used for this study is CitySim [1] for the calculation of the estimated energy consumption on site for heating, cooling and lighting.</p>



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76	<p>Yasmina Kerboua Ziari, Allal Babou and Youcef Kerkoub. The effect of external boundary conditions and operating parameters on the hydrogen storage performance in a metal hydride storage tank (details, )</p> <p>Abstract. Abstract— In this paper, a mathematical model of coupled heat and mass transfer is developed to understand the effect of the external boundary conditions and various parameters on the hydrogen absorption process. The metal hydride tank consists of powder LaNi₅. Time-space evolution of the temperature and the hydride density are determined and discussed. The numerical results show that the charging rate and duration are mainly affected by the type of boundary conditions. The hydrogen storage performance can be improved by a good choice of these parameters. The simulation results show great agreement with the experimental data.</p>
103	<p>Samir Hani, Badra Aoun-Sebaiti, Nabil Bougherira and Azzedine Hani. On the use of probabilistic approach to simulate groundwater flows. Case of the Annaba aquifer (Algeria) (details, )</p> <p>Abstract. The heterogeneity of the Annaba plain aquifer as well as the concentrated distribution of the experimental hydraulic parameters makes put threats of obtaining a reliable cartography of the transmissivities, which is essential to the development of a powerful digital simulation model. Several probabilistic methods were used to determine the transmissivity in any point of the aquifer system, by using easy obtained parameters (transverse resistance and specific capacity). The used methods are kriging, cokriging and artificial neural network. The interpolation using kriging method has a rather powerful means because, in addition to its quality of better linear estimator, it allows for an error interpolation estimate. The cokriging, which integrates information of variously distributed and different nature, gives the most realistic estimates. The artificial neural network proved their capacity to model the strongly complex problems. The multi-layer perceptron network (MLP), allows the training of relations existing between the parameters of input/output of a model, starting from a data base. The interest of these techniques lies in the capacity of generalization which allows the network, after training, to carry out the correspondence input/output for data which are not present in the training base. The model calibration for the simultaneous measurements of the transmissivity, the specific capacity and transverse resistance will make it possible to generate values of transmissivity in the sectors where measurements of transverse resistance and/or specific capacity are available. The confrontation of the whole results obtained by the probabilistic methods used, with those obtained starting from a numerical model, which should reproduce "better" heterogeneities of the aquifer system, will make it possible to consider better approach to be adopted which would make it possible to avoid redundant simulations during the calibration of the models. In this study, new results are obtained by associating the deterministic and probabilistic approach, allowing testing the model with more objectivity.</p>
131	<p>Olufunmilayo Joseph, Seetharaman Sivaprasad and Isaac Fayomi. Comparative study on the effect of NaNO₂ in corrosion inhibition of micro-alloyed and API-5L X65 steels in E20 simulated FGE (details, )</p> <p>Abstract. The effect of sodium nitrite (NaNO₂) in the corrosion inhibition of micro-alloyed and API-5L X65 steels in E20 simulated fuel grade ethanol (SFGE) have been investigated via gravimetric method and morphological examination. While NaNO₂ addition may positively slow down corrosion rate, its concentration within the tested range of 0.2 – 1.0 g/L plays an insignificant role in improving the corrosion resistance of API-5L X65 and micro-alloyed steels. Morphological examination of both steels after immersion tests in</p>



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	<p>the presence and absence of the inhibitor showed pitting corrosion mechanism. Furthermore, statistical analysis confirms with 90 % confidence, that there is no significant difference between the corrosion behaviour of the two steels in E20 SFGE with and without NaNO₂ inhibitor. Highest protection of the metal surface was achieved at 62.63 % with 0.2 g/L NaNO₂ for API-5L X65 in E20.</p>
87	<p>Soumia Hakkoum, Abdelouahed Kriker and Abdessalam Mekhermeche. Thermal characteristics of Model houses Manufactured by date palm fiber reinforced earth bricks in desert regions of Ouargla Algeria. (details,  5)</p> <p>Abstract. The big desert of Algeria is characterized by hot dry climatic in summer and cold dry in winter. The building in these regions consumes a large volume of electrical energy for air conditioning in summer and a large volume of gas energy for heating in winter. It is therefore necessary to provide building materials with good thermal insulation for the construction of buildings. For economical reasons, in this studie, a brick cooked traditionally haring and made of natural products that exists in large quantity of the Algerian Ouargla Sahara were proposed. The local naturally materials used were earth, sand dunes and date palm fiber. The mass percentages of sand were 30%, the mass fraction of fiber were varied from 0% to 3%. The results show that the increases in mass fraction of fibers were beneficial for the improvement of thermal properties with acceptable mechanics resistances.</p>
7	<p>Wanyonyi Chisutia Wycliffe, Onyari John Mmari, Shiundu Paul Mwanza and Mulaa Francis Jackim. Biodegradation and Detoxification of Malachite Green Dye Using Novel Enzymes from Bacillus cereus Strain KM201428: Kinetic and Metabolite</p> <p>Analysis (details,  5)</p> <p>Abstract. Enzyme based degradation of organic pollutants is a promising detoxifying approach due to the promiscuous nature of the enzyme, efficiency, cost effective and ecofriendly. In the present study, we have carried out detailed decoloration and degradation studies on a model triphenyl methane group of dyes (Malachite Green dye (MG)) using a newly isolated enzyme from Bacillus cereus KM201428 under the static condition. Biodegradation of dyes was monitored by UV-VIS spectrophotometer and the resultant metabolites analyzed by Liquid Chromatography–Hybrid Quadrupole Time of Flight Mass Spectrometry (LC–QToF-MS) and Gas Chromatography/Mass Spectrometry (GC - MS). Metabolite analysis results revealed that enzymatic degradation of MG dye resulted in complete mineralization and benzene ring-removal; the latter known for organic dye toxicity. Kinetic study results revealed that first-order kinetic model was best applicable for describing MG dye decoloration. Michaelise-Menten kinetics, Lineweaver–Burk plot and Eadie-Hofstee plot models were used to establish the kinetic parameters for the dye decoloration. Lineweaver–Burk plot provided the best theoretical correlation of the experimental data with maximum rate (Vmax) of 17.70 mg l-1h-1 and Michaelis constant (Km) of 124 mg l-1. Results provide evidence that crude enzyme from Bacillus cereus strain KM201428 provide an effective, renewable, ecofriendly and affordable biotechnology for treatment of industrial effluents polluted with organic dye.</p>
116	<p>Fatiha Hadjaidji-Benseghier, Nadjib Talbi and Arezki Derridj. Did the global warming confirm in central northern Sahara (case of the region of Ouargla, Algeria)? (details)</p> <p>Abstract. Climate change shows itself in various scales(ladders) of which the Mediterranean and Saharan region. The study aims at characterizing the Saharan climate in a bigger scale(ladder) otherwise-said, precision as for the current climate reigning (evolution), at the level of the region of Ouargla. For that purpose, we adopted a</p>



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	<p>complementary, dynamic and static approach. The dynamic approach was approached by compilations of the previous works. Followed by a statiical analysis leaning on climatological data, spread over a period going from 1978 till 2015 (ONM, on 2016). It emerges from it that the dynamic character is characterized by the frequency of the diet NAO + with regard to that of the NAO-. This regime expresses himself daily, in terms, of temperature and haste, explaining the importing lived reheating these last decades. So, the results show that the region is characterized by a "hot" thermoclimat, expressed by all the energy parameters (rise of the fraction of sunstroke and the temperature). A " dry ", characterized ombroclimat.</p>
106	<p>Muhammed Siddik Abdul Samad, George K Varghese and Babu J Alappat. Fitness evaluation while using contaminant transport models for Environmental forensic investigation (details,  5)</p> <p>Abstract. Pollution, especially groundwater pollution, is one of the major challenges faced by many countries of the world. Using 'polluter pay' principle in settling pollution issues, though is not a new practice, is gaining wider acceptance these days. Scientific techniques capable of fixing responsibility of pollution and meeting the evidentiary requirements in a court of law are important in making a polluter pay for the damages he has made to the environment. In certain cases of groundwater pollution, using mathematical models is the only option in identifying the pollution source(s) and its characteristics. Use of numerical groundwater contaminant transport models in predicting pollution source characteristics involve using them repetitively along with an optimization algorithm until the concentrations predicted by the model match the observed concentrations within a margin of error. But, this matching procedure becomes complex as the model time and observation time are rarely the same. This paper proposes a method to match the modeled and observed concentrations for designing a fitness function. Further, it also explains how the source characteristics are decoded from the solution given by the optimization technique. MT3DMS was the contaminant transport model and genetic algorithm was the optimization algorithm used in the study.</p>
60	<p>Shatha Mahdi, Widad Jassim, Intisar Hamad and Kareem Jasim. Epoxy/Silicone rubber blends for voltage insulators and capacitors applications(details,  5)</p> <p>Abstract. In this research the epoxy/silicon rubber blends were prepared by adding the silicone rubber with varying weight (0.0, 0.25, 0.5, 0.75 and 1gm) to epoxy resin. Some thermal properties are determined for different samples of blends. The bulk resistivity and dielectric constant were evaluated and related to the neat epoxy. The results suggest that the inclusion of silicone epoxy effectively improved in the glass transition temperature (Tg) and the thermal insulation also improved the electrical properties like resistance and dielectric constant for using it as capacitor at high frequencies and in the high voltage strength applications.</p>
119	<p>Ojo Sunday Fayomi, Api Popoola and O.O Joseph. Assessment of Potassium Chromate Inhibition and Adsorption on Type A513 Mild Steel in Simulated Contaminated Media (details,  5)</p> <p>Abstract. The effect of potassium chromate (K₂CrO₄) compound on the inhibitive performance of type A513 mild steel was studied using linear and open circuit polarization technique with μAutolab PGstat101. The structural degradation tendency was observed with high resolution optical microscope. Data obtained from Tafel plot showed that the organic compound performed effectively in acid/chloride solution at all concentration of (K₂CrO₄) with average inhibitor efficiency above 60%. The outcome of the OCP showed a</p>



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	significant correlation with the LPR trend. The massive influence of the inhibitive compound on steel was seen as a chemisorption mechanism in which the corrosive anions and particulate were suppressed significantly. The adsorption of the compound was determined and was found to obey the Langmuir isotherm model. The structural properties generally were affected with high aggressiveness of the acid/chloride ion mix with uniform corrosion propagation observed along the entire interface
4	Asma Chadel, Meriem Chadel, Michel Aillerie and Boumédiene Benyoucef. Technical and economic analysis of hybrid solar/wind energy source for the site of Tlemcen-Algeria (details , ) Abstract. The use of renewable resources is experiencing a great boom in industrialized countries and even in some underdeveloped countries. Algeria has provided a great effort for rural electrification and Saharan. Indeed, the rate of national electrification in 2001 was equal to 96%. Despite this high rate, there are still scattered households with electrification, by extension of the conventional network, is very expensive. The hybrid power generation system (wind - PV), fully autonomous, is a solution for this problem. We present in this work, first, a method to determine the size and optimization of a photovoltaic-wind hybrid system for medium power. Secondly, determine the optimum techno-economic configuration two different methods: the annual monthly average and that of the worst month. For that, load is fixed a 2kWh/d, the worst month of the method gives a higher cost of the system compared to that of the average monthly values per year. The results also show that the use of a wind system as a backup system with a photovoltaic system generates an increase in the price of the hybrid system to the site of Tlemcen.
130	Mohammed Amine Fares , Atik Lotfi , Bachir Ghalem and Michel Aillerie . Photovoltaic panels characterization and experimental testing (details , ) Abstract. Will be completed soon
10	Akram R. Jabur, Emad S. Al- Hassani, Ahmed M. Al- Shammari, Manar A. Najim, Aymen A. Hassan and Aesar A. Ahmed. Evaluation of Stem Cells' Growth on Electrospun Polycaprolactone (PCL) Scaffolds Used for Soft Tissue Applications. (details , ) Abstract. Abstract: This study focuses on the preparation of a synthetic tissue from a biodegradable polymer that can be used for soft tissue applications using electrospinning technique. Biodegradable thermoplastic polymer which is polycaprolactone (PCL) used for making electrospun scaffolds in three concentrations (10, 15 and 20%) Weight/Volume PCL. The results revealed the increasing in fiber diameter with increasing PCL concentration in the prepared solutions for electrospinning. Then the growth of horse adipose derived mesenchymal stem cells was evaluated in vitro over these prepared scaffolds for 21 days with and without soaking in fetal bovine serum to study cells' growth rate and proliferation over the scaffold surface. The Scanning electron microscope (SEM) analysis showed high growth rates for stem cells on these prepared scaffolds especially 15% W/V PCL which supported stem cells growth even when it was not soaked in serum. The histological analysis revealed that the suitable structure for cells spread and penetration resulted in 15 and 20% PCL scaffolds. In conclusions, these prepared scaffolds could be a candidate for use in soft tissues repair and thus for regenerative medicine application, because they highly supported stem cells growth.
15	Hocine Tebbouche, Ammar Bouchair and Said Grimes. Towards an environmental approach for sustainable buildings in Algeria (details , )



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	<p>Abstract. Sustainable architecture (HQE in France, Green Buildings in the USA, Sustainable Buildings in Northern Europe) is a profound initiative whose objective is to achieve sustainability of buildings. This concept has spread throughout the world and each country worked to develop its approach (depending upon its physical and cultural conditions) to minimize the negative impacts of buildings on the natural environment and improving the comfort and quality of life. These international initiatives are characterized by multi-criteria vision, contextuality, flexibility and scalability. What strategy should be developed for sustainable buildings in Algeria? This is the fundamental question for which we try to provide some answers. On the basis of a thorough study of the Algerian context, we aim at the presentation of the foundations of an approach to the sustainability of buildings which would be adjustable to different regions of the country and whose peculiarity lies in the consideration of the major concerns of our country and its specificities. Including, for instance: seismic risk, socio-cultural practices of the population, as well as the diversity that characterizes the climatic and geographical data of the entire national territory, by following the existing national legislation, regulations and standards.</p>
51	<p>Roba Saab and Mohamed I. Hassan Ali. Variable-Refrigerant-Flow Cooling-Systems Performance at Different Operation-Pressures and Types-of-Refrigerants (details, )</p> <p>Abstract. This paper aims to study the performance of the Variable Refrigerant Flow (VRF) system under various conditions in hot and humid climates such as Abu Dhabi, in the United Arab Emirates. The model is built on Engineering Equation Solver (EES) with input data obtained from the specifications of the VRF units used, and the design requirements from the Masdar City Eco-Villa for which the model is done. A number of parametric studies are done on the VRF cycle model, such as, the variation of low and high pressures, in addition to, the variation of the type of working fluid used. Results have shown that the coefficient of performance (COP) of the cooling cycle is highly dependent on the evaporator and condenser pressures, as well as, the type of refrigerant used as working fluid. Finally, by evaluating the effect of each parameter on the COP of the system, the expected amount of energy savings can be increased.</p>
55	<p>Adel Oueslati and Adel Megriche. Performance analysis of a new humid air dehumidifier (details, )</p> <p>Abstract. A new humid air dehumidifier was designed and built. It is composed with two identical stages. The condensation is achieved on vertical tubes. Many configurations are tested. A thermodynamic model has been established. This model predicted the performances of each stage. The results showed that the flow rate of pure water produced by dehumidification and the exchanged heat power increase with increasing mass flow rates of dry air and cooling water, temperature and absolute humidity of inlet moist air in the dehumidifier. The high quantity of water vapor in air makes a thick film of condensate on cooling tubes. This reduces the flow rate of condensate and thermal power exchanged. So, the use of multistage condenser as dehumidifier is must but not sufficient for optimum efficiency.</p>
132	<p>Azhar Inad and Sahar Maki. Preparation and characterization of Cu:Co₃O₄/Si heterojunction prepared by spray pyrolysis (details)</p> <p>Abstract. Undoped and Cu doped cobalt oxide thin films with (x= 1, 3, 5, 7, and 9)% were prepared by spray pyrolysis at substrate temperature (350)°C. Structural and optoelectronic properties of thin films were studied by X-ray diffraction XRD, Atomic Force Microscope AFM, current- voltage (I-V) and capacitance- voltage (C-V) measurement. X-</p>



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	<p>ray diffraction results revealed that all films consist of single Co₃O₄ phase with preferred orientation (111) and cubic spinal structure. AFM micrographs indicated that the grain size decrease with increasing Cu doping. Current transport properties of the p-Cu:Co₃O₄/n-Si heterojunctions are investigated by current–voltage measurements in dark and illumination with different incident power. The ideality factor were found to be strongly depending on Cu doping, there is an increase in the ideality factor with increasing Cu doping. In part of C-V measurements, built-in potential value were found to decrease with increasing of Cu. The higher spectral responsivity of the junction was 54 A/W at (600–700)nm wavelength for copper ratio 9%.</p>
3	<p>Kengne Signe Elie Bertrand, Oumarou Hamandjoda and Nganhou Jean. Methodology of Feasibility Studies of Micro-Hydro power plants in Cameroon: Case of the Micro-hydro of KEMKEN (details) Abstract. Hydroelectricity is the largest source of renewable energy. However, large hydroelectric power stations will no longer be built enough. But there is tremendous potential for small hydropower that is seen as a more suitable renewable energy source. Cameroon has also a great hydroelectric potential. This work presents a simple method of the feasibility studies of a project of Micro Hydroelectric Power Plant (MHPP) in the intention to contribute to its development in Cameroon. The study was supported by feasibility studies of the KEMKEN MHPP project. It a project of 320 kW of installed power, where the Kaplan turbine is recommended, the investment cost evaluated at 212 486 656 FCFA with a payback period around 7 years. This work contains the necessary elements of the feasibility studies of a MHPP project in rural locality.</p>
13	<p>Elmar Steurer, David Manetsgruber and Bernard Wagemann. Standardised Risk Management Procedure (SRMP) for Mini Grids (details, ) Abstract. Rural electrification by using mini-grids has been the objective of many development policies over the past years. Most mini-grid projects turned out as failures because of poor suitability to user needs, local conditions and expectations of investors and several other risks. In order to shed light on the principles and processes involved in determining a mini-grid risk rating this paper develops and elaborates a risk rating model based on a standardized risk management procedure (SRMP). Five key criteria were outlined and explained in detail using an empirical case study on a mini-grid located in India. The analysis of this case study showed that there are several aspects of a mini-grid rating that local political entities can proactively influence with their policy decisions. On the other hand, it has also been noted that unforeseen events that are beyond any control of local authorities can cause sudden changes in a mini-grid rating. Ultimately, this paper aims to have shown how a methodology to achieve a risk rating for a mini-grid could be structured. In this sense a mini-grid rating is decision supporting tool to enable sound investment decisions for debtholders and shareholders in a mini-grid and to contribute for de-risking renewable energy investments The proposed standardized risk management procedure (SRMP) for mini grids should be considered as an educated, systematic attempt at measuring current and future development of a mini-grid's capability to fulfill future payment obligations and profitability expectations.</p>
57	<p>Adawiya Haider, Ali Jasim Mohammed and Suaad Shaker. Sensing Characteristics of Nanostructured SnO₂ Thin Films as Glucose Sensor (details, ) Abstract. Thermal evaporated Sn thin film was deposited followed by atmospheric oxidation annealing at 550oC for 1 h to fabricate nanostructured SnO₂thin film sensor. The nanostructures were characterized through X-ray diffraction, scanning electron microscopy (SEM) and electrochemical amperometric glucose (C₆H₁₂O₆) sensing. The</p>



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	<p>obtained film was strongly c-axis oriented along (100) direction and has other low intensity towards the directions 101, 200 and 211, indicating polycrystalline characteristics. The film exhibited high dense porous nature has been indicated in the SEM images. Furthermore, the glucose sensing properties of the as-prepared SnO₂ thin film were investigated for various glucose concentrations (50, 100, 150 and 200) mg/L. The nanostructured SnO₂ thin film exhibited a higher response, fast rise time 8s and suitable recovery time 53s upon working at room temperature. Linear relative response with the glucose concentrations for SnO₂ thin film biomedical sensor was obtained.</p>
91	<p>Adel Oueslati and Adel Megriche. The effect of liquid temperature on the performance of an airlift pump (details, )</p> <p>Abstract. Airlift pumps are very simple devices consisting of a vertical riser tube which is partially immersed in the liquid to be pumped and into which air is injected at the base to produce an upward flow. These devices are characterized by higher reliability and low maintenance. They are used, especially, for pumping dangerous and polluted liquids. The objective of the present study is to evaluate the performance of a pump when hot liquids are handled and air humidification is not neglected. For this purpose, an air-lift pump was designed and tested. Experiments were performed for many operating conditions A theoretical model is proposed in this study taking into account the air humidification and liquid temperature. The proposed model has been compared with experimental data and some recognized models of literature. The proposed model is in good agreement with experimental results.</p>
1	<p>Luca Dalla Valle, Giorgia Passamani, Elena Cristina Rada, Vincenzo Torretta and Rodica Ciudin. Unconventional Reducing Gases Monitoring In Everyday Places (details, )</p> <p>Abstract. Air pollution, be it indoors or outdoors, is a major environmental health concern as it can lead to serious health effects, such as respiratory diseases, including asthma and lung cancer. Much progress has been made in Europe in improving outdoor air quality and limit values have been set for several pollutant. However, indoor air quality also requires attention because this is where we spend most of our time. Measurements at appropriate spatial and temporal scales are essential for understanding and monitoring heterogeneous environments with complex and highly variable emission sources, such as in urban areas. However, the costs and complexity of conventional air quality measurements methods means that measurement networks are generally extremely sparse. Low-cost, easy-to-use sensors to monitor air quality are exploded in recent years. They can be considered the “next-generation air monitors”. The data collected might be used to improve communities and, eventually, affect how air quality is monitored and regulated. They are marketed as tools to empower citizen to learn about the air they breathe and to use their findings to take actions. Therefore, the development of low-cost air quality sensors, an increasingly aware and engaged public, and a government more willing to accept and help citizen collect data could mark a turning point in how air pollution is monitored and addressed in the country. In this study, measures of reducing gases were taken in indoor and outdoor unconventional environments, poorly investigated in the past. The levels of these gases were investigated by means of a SensorDrone™ low-cost multi-sensor in a household kitchen and in three different gas stations. The results highlight that these sensors well interpret the qualitative behavior of the oxide - reduction reactions. Future technologies could link reducing gas’ concentrations with value of electrical resistance. These developments will allow a better control of human exposure</p>



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	to air pollution also in other sectors as biological treatments of waste and industrial sectors where fugitive emissions are still a problem.
114	<p>Olufunmilayo Joseph, Isaac Fayomi and Olakunle O. Joseph. Effect of lecaniodiscus cupaniodes extract in corrosion inhibition of normalized and annealed mild steels in 0.5M HCl (details)</p> <p>Abstract. The effect of Lecaniodiscus cupaniodes extract as a green inhibitor on the degradation behaviour of normalized and annealed mild steels in 0.5 M hydrochloric acid (HCL) was evaluated. Gravimetric and potential measurements were used for the experimental work. The results revealed that Lecaniodiscus cupaniodes performed effectively at inhibiting the rate of corrosion attack on the heat-treated steels in 0.5 M HCl medium with an average inhibition efficiency of 90 percent (%). However, the effectiveness of the extract as an inhibitor was found to be dependent on the exposure period for the annealed samples. Corrosion rates of the two heat-treated steels were significantly affected by the concentration of lecaniodiscus cupaniodes extract. At the end of the 34-days exposure period, only 5 ml concentration of the extract gave the best inhibition efficiency for the annealed and normalized steels - 77.09 % and 82.57 % respectively. The significance of the results was further determined via two-factor Analysis of Variance (ANOVA) test. The statistical analysis confirms the effect of extract concentration and exposure time on corrosion behaviour with 95 percent confidence.</p>
41	<p>Adawiya J. Haider, Riyad Hassan Al- Anbari, Ghadah Rasim and Chafic Salame. Exploring potential Environmental applications of TiO2 Nanoparticles (details,  5)</p> <p>Abstract. Abstract This study aims at preparing thin layers of (TiO₂) with a high photocatalytic activity and antibacterial properties for use as a self- cleaning transparent coatings for windows in outdoors applications. Titanium dioxide (TiO₂) nanoparticles were prepared by sol-gel process using Titanium Tetrachloride (TiCl₄) as a precursor, and calcined at different calcination temperatures (400, 600, 800, and 1000) °C. The synthesized nanoparticles were characterized by X-ray diffraction (XRD), Scanning Electron Microscopy (SEM), Ultraviolet spectroscopy (Uv-Vis), Atomic Force Microscopy (AFM). Self-cleaning properties were studied through two important tests; hydrophilicity by measuring the Water Contact Angle (WCA) and photocatalytic activity by using potassium permanganate (KMnO₄) as a model organic pollutant. Secondly, a thin film coating of TiO₂ nanoparticles was deposited by spin coating. The antimicrobial activity of TiO₂ nanoparticles was assessed quantitatively against two types of bacteria, (<i>Pseudomonas aeruginosa</i>), and (<i>Staphylococcus aureus</i>). XRD analysis indicated that the structure of TiO₂ was anatase at calcination temperatures at (400, and 600) °C, rutile at 1000 °C and mixed phase at calcination temperature of 800 °C. Results obtained indicates that the TiO₂-coated surfaces showed a photoactivated bactericidal effect with all bacteria tested highlighting that the TiO₂ could be used for the production of coated surfaces for application as a self-cleaning surface into outdoor building materials, such as windows, also to be placed in microbiologically sensitive environments, such as hospitals</p>
111	<p>Rana Amiri, Amel Bouakkadia, Zoubida Habes and Djelloul Messadi. Models QSPR for the prediction of octanol/water partition coefficient of organophosphorous insecticides. (details,  5)</p> <p>Abstract. This study aims to predict the octanol/water partition coefficient (K_{ow}) of 43 organophosphorous insecticides. Quantitative structure- property relationship analysis was performed on a series of 43 insecticides using Multiple Linear Regression (MLR), which correlate octanol- water partition coefficient (K_{ow}) values of these chemicals to their structural descriptors. At first, the data set was separated with three methods</p>



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	<p>(random splitting, Kennard and stones algorithm, and the last one duplex algorithm) into a training set (30 chemicals) and a test set (13 chemicals) for statistical external validation. Models with four descriptors were developed using as independent variables theoretical descriptors derived from DRAGON software when applying GA (Genetic Algorithm)- VSS (Variable Subset Selection) procedure. The robustness and the predictive performance of the proposed linear model were verified using both internal and external statistical validation. One influential point which reinforces the model and an outlier where highlighted.</p>
112	<p>Patrick R. Bradler, Joerg Fischer, Bernhard Pohn, Gernot M. Wallner and Reinhold W. Lang. Effect of stabilizers on the failure behavior of glass fiber reinforced polyamides for mounting and framing of solar energy applications (details, )</p> <p>Abstract. In the present paper, the influence of stabilizers on the fatigue crack growth (FCG) behavior of glass fiber reinforced polyamides (PA) for mounting and framing of photovoltaic modules, photovoltaic/thermal modules and other thermal collectors was investigated. A proper polymer stabilization is essential for a sophisticated substitution of commonly used materials (aluminum, stainless steel) to ensure longer product lifetimes. The implementation of polymeric materials to such applications induce the advantages of lightweight and cost-effectiveness. In total, five different glass fiber reinforced PA grades differing in their stabilizer packages were characterized. As a benchmark material, a commercial grade with a low stabilizer content was used. To establish the other four materials, this PA grade was modified with masterbatches varying in their stabilizer packages. While one masterbatch contained no stabilizer, the three remaining masterbatches comprised phenolic- and amino-based stabilizers. Tests were performed at the temperatures 80°C and 95°C in the environmental media air and water with compact type specimens. The effect of loading conditions on FCG behavior was investigated showing significantly reduced resistance with increasing temperature and a slightly lower resistance in water environment. Moreover, an influence of the used stabilizer package on the FCG kinetics was obtained. Inferior FCG resistance was determined for the PA modified with the non-stabilized masterbatch. The PA grade containing the phenolic-based stabilizer package exhibited a significantly superior FCG resistance compared to the benchmark material.</p>
126	<p>Jean-Paul Sawicki, Frédéric Saint-Eve, Pierre Petit and Michel Aillerie. PV Voltage Control in Spite of Disturbances on MCB Boost Output Voltage in Parallel Association (details, )</p> <p>Abstract. Objective of this paper is to verify a specific control law designed to Magnetically Coupled Boost (MCB) converters used as photovoltaic (PV) optimizers in parallel association. In the case of inappropriate control algorithms, conflicts appear between boosts, preventing energy injection on output power bus for some of them. In this work we highlight, in first time, that an important disturbance on output bus induces consequent perturbation of PV module operating point, when controlling in open loop. In a second time we show how to implement a formula designed to compute duty cycle in pulse width modulation control (PWM), in spite of not perfect MCB model and no linear PV module behavior. Indeed, challenge is to adjust duty cycle according to actual power bus voltage when PV module voltage has to be constant, especially when Maximum Power Point is reached. A closed loop with elementary correction law is implemented in sampled control to ensure PV voltage as reference, preventing any variation of PV operating point. In a third time, experiments with different settings in sampled controller are analyzed, and comparisons between responses allow to conclude on robustness of such control, in</p>



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	the case of only one MCB converter disturbed by output voltage. Further studies of converter behavior in parallel association are also mentioned at the end of this paper, with objectives, for example, to characterize impact of possible shading on photovoltaic module and even to allow coupling of storage units to power bus.
46	<p>Leila Sahri, Imed Eddine Nezli, Rabah Kechiched and Slimane Abdeldjebbar Benhamida. A Statistical Summary of ground water mineralization in the Aquifer of Intercalary Continental (Algerian Septentrional Sahara) (details, )</p> <p>Abstract. This study deals with the mineralization in the Intercalary Continental aquifer (CI) located at the Algerian Septentrional Sahara. Statistical analysis was performed on summarized data from different studies in order to identify the origin of that mineralization in a regional scale. Therefore, multivariate statistical analysis were applied on 488 representative wells such as: (1) Principal Component Analysis (PCA) and (2) Ascending Hierarchical Classification (CAH). Obtained results highlight the chemical typology of ground water. The multivariate statistics indicate a significant influence of evaporates on water mineralization as well as the dominance of chloride-sodium facies. However, the high water temperatures recorded in the eastern part of the basin suggest hydrolysis of silicates that contributes also in that mineralization. This study confirms rather the lithological host of aquifer as a main source of water mineralization.</p>
127	<p>The Vinh Nguyen, Thanh Vinh Vo, Pierre Petit, Michel Aillerie and Ngoc Thang Pham. Optimized pulse transformer for step-up DC-DC converter(details, )</p> <p>Abstract. This paper presents a new analytical expression intended to accurately evaluate the leakage inductance of transformers in the step-up DC-DC converter in the high frequency range in which the behavior of the magnetic field within the windings is altered. Unlike conventional expressions, which usually overestimate the leakage inductance at higher frequencies, this expression accounts for high frequency behavior of the magnetic field and provides high accuracy when operating at high frequencies. These high accuracy and applicability makes the derived expression of interest for designers to avoid time consuming finite element simulations without compromising with accuracy. The expression is validated by 2-D FEMM simulation, as well as by measurement.</p>
18	<p>Fadhil A. Chyad, Akram R. Jabur and Hussein A. Alwan. Effect addition of Graphene on Electrical Conductivity and Tensile Strength for Recycled Electric Power Transmission Wires (details, )</p> <p>Abstract. In this study, effect of artificial aging and cold rolling on the conductive and tensile properties of graphene reinforced aluminum matrix composites has been investigated. Graphene reinforced aluminum matrix composites were prepared by pyrolysis method. Graphene nano powder have been applied as reinforcing phase in molten pure aluminum (99.5%). Al wires (scrap wire damaged) are melted and graphene nano powder (0.5 %) can be added. Al-graphene alloy was cast into a diameter of (10 mm) and height of (20 mm) billet by steel mold. After that, the Al-0.5 % graphene rod was cold rolling at room temperature in a (10 mm) diameter rod form into a (3.5 mm) diameter wire. Both the electrical conductivity and tensile strength of alloys improved by cold rolling+ artificial aging treatment. The improvement of electrical conductivity of (B1) alloy is (8.9%) comparing with (A as cast) alloy, while the improvement in tensile strength of (B1) alloy compared with (A) alloy is (168.6%). Raman spectroscopy was carried out in order to indicate the number of graphene layers of the prepared samples, also to give good data about the structure of the prepared samples. FESEM studies</p>

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	showed a highly dimpled structure, characteristic of ductile failure. The results show that electrical conductivity and tensile strength are improved by the addition of graphene.
86	<p>Khawla Khashan, Juhaina Taha and Sarah Abbas. Fabrication and properties of InN NPs/Si as a photodetector (details,  5)</p> <p>Abstract. Indium nitride InN nanoparticles NPs are synthesized by laser ablation of indium target in ammonium hydroxide solution. The scanning electron microscope SEM, Fourier transforms infrared spectroscopy FTIR, and UV-VIS-NIR spectroscopy were used for investigating the NPs. The FTIR exhibit the presence of In=N bond. The SEM image shows a spherical shape of NPs. The transmission spectra have the maximum edge at 1378nm with band gap was 1.1eV. For optoelectronic properties, InN NPs colloidal was deposited on silicon substrates by drop casting. The characteristics of InN/Si heterojunction have a good rectifying with the spectral Responsivity 0.31 A/W at 750nm and quantum efficiency about 52.7 %.</p>
107	<p>Al Asmar Joseph, Lahoud Chawki and Brouche Marwan. Decision-making strategy for cogeneration power systems integration in the Lebanese electricity grid (details,  5)</p> <p>Abstract. Cogeneration and trigeneration systems can contribute to the reduction of primary energy consumption and greenhouse gas emissions in residential and tertiary sectors, by reducing fossil fuels demand and grid losses with respect to conventional systems. The cogeneration systems are characterized by a very high energy efficiency (80 to 90%) as well as a less polluting aspect compared to the conventional energy production. The integration of these systems into the energy network must simultaneously take into account their economic and environmental challenges. Moreover, the electricity distribution service can motivate the users of these systems by buying their residual electrical and thermal products. In this case, the "smart-grid" is the interface that manages the client-network interaction.</p>
12	<p>Yassine Elhamdouni. Thermophysical and Mechanical Properties of composite material: Clay / straw fiber (details,  5)</p> <p>Abstract. Straw fiber and Clay are abounding, natural and renewable materials, they have an very interesting thermal and acoustical insulation. In the present work, We studied the thermal behavior of the different samples of dimensions 10×10×3 cm³ by mixing clay with different percentages of fibers straw (0.5 %, 1 %, 2 %, 3 %, 4 %). Then we compare thermal insulation of the new material (clay + straw fibers) with the only Clay, for valorize the addition of straw fibers and her use with Clay as insulating material. This comparison of the energy performance of these two materials will enable us to deduce that the new material (clay + straw) is lighter, its capacity to delay the transmission of warmth is superior to that of the only clay and its use as exterior wall improves the thermal insulation of this last. However, these composite materials used for building shielding must present sufficient mechanical strength to be suitable for constructions. We have shown, according to the results obtained, that 2% fiber straw remains the percentage the most suitable for improving mechanical behavior of a material at base of clay.</p>
72	<p>El Bada Nawal. Phytotoxicity evaluation of pretreated leachate by precipitation on seed germination: the barley and cress case (details,  5)</p> <p>Abstract. The leachate phytotoxicity of domestic solid waste is essentially due to the high rate of organic matter and metallic salt of these effluents. They have been recognized as a potential source of environmental pollution. Consequently, the treatment process of</p>



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	<p>leachate was implemented to reduce its phytotoxicity. In this article, we suggest a pre-treatment by precipitation using three materials ($\text{Ca}(\text{OH})_2$, CaCO_3, NaOH). The used leachate in this study was taken from the landfill of Azemmour and the results of its characterization show an important variability of its composition which essentially relies on its biological and physicochemical evolution with time. The results of pre-treatment represent a significant pollutant abatement of the three used materials. The obtained pre-treated leachate was used to evaluate its phytotoxicity on seeds' germination. Thus, we notice an important increase of barley germination's rate using lime and calcite. However, no cress germination has been observed. On the other hand, the germinating powers of barley and cress are clearly improved after diluted and pre-treated leachate pH adjustment. While the diluted leachate was pre-treated by precipitation using lime with adjusted pH between 6 and 7, the barley germination rate reached 100% and the cress one almost reached 50%. This experimental study highlights the influence of the leachate pollution load, the precipitating nature, and the Ph adjustment on the germination index.</p>
35	<p>Thameur Abdelkrim, Tarak Benslimane, Abdelhalim Borni, Karima Benamrane, Adbelkader Lakhdari and Nouredine Bouarroudj. Performance evaluation of new control of distributed two-stage PV conversion system using three levels VSI for stand-alone application (details, )</p> <p>Abstract. In this paper a distributed two-stage photovoltaic system using three levels inverter for stand-alone application is treated. The maximum power point tracking based on the "perturb & observe" (P&O) approach as a control strategy of the two boost DC-DC converters is applied. In order to get the best AC voltage waveform, the space vector pulse width modulation technique is used in this paper. To maintain the two capacitors voltages of DC bus equal, a new algorithm using the load, capacitors and boost converters currents is introduced to control loop. Without introduced any system to regulate the fluctuation of the DC bus and to get a stable output inverter voltage, authors in this paper propose a proportional regulator of inverter modulation index. A theoretical analysis with a complete simulation of the system with different profiles of irradiance for each DC/DC converter is presented to prove the excellent performance of the proposed technique.</p>
128	<p>Ternifi Touhami, Pierre Petit, Ghalem Bachir and Michel Aillerie. New Topology of a Fly-back Micro-inverter working in Dynamic Regime (details, )</p> <p>Abstract. This paper presents a new</p>
120	<p>Jinan El Hajjar, Alya Alhammadi, Lama El Qadri and Abdulhai Al Alami. Enhancement of Transparent Conductive Electrodes for Third Generation Photovoltaics (details, )</p> <p>Abstract. In order to diversify the applications of dye-sensitized solar cells, the possibility of fabricating a flexible photoelectrode that can compare to the brittle but highly conductive and transmissive ITO is explored in this research project. This is done by choosing materials that can withstand bending without showing change in their properties: PET (Polyethylene Terephthalate) and AgNWs (Silver nanowires). AgNWs are deposited on the PET substrate by a number of methods (spincoating, rod coating, and drop casting) and the effects of using each method are compared to determine the optimum way of deposition. The resulting photoelectrodes are then characterized by their sheet resistance and transmissivity.</p>
89	<p>Salima Bendebane. Degradability of lead dioxide in aqueous organic acid solutions (details, )</p>



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	<p>Abstract. Processing industries generate wastes that can be found in the nature causing environmental pollution. Among these wastes heavy metals and their oxides are considered as very problematic for living creatures. Lead dioxide is one of the most harmful compounds that can be found in landfills. It may react with different components present in soil such as organic acids leading to dissolve it and consequently pollute the environment. In this study we were interested on the kinetic release of lead dioxide when contacting two organic acids usually present in the nature which are citric and acetic acids. The effect of acid concentration and temperature were investigated. The results have shown that the dissolution of lead dioxide in the presence of acetic acid was faster than in citric acid. The complexometric character of citric acid may be the cause of such behavior.</p>
28	<p>Youssef Errami, Abdellatif Obbadi, Smail Sahnoun, Mohamed Barara, Mohammed Ouassaid and Mohamed Maaroufi. Control of High-Power Wind Energy Conversion System Fed by Multi-level Converters (details, 5)</p> <p>Abstract. The progress of Variable Speed Wind Turbine Systems (VS-WTS) is currently focused in reaching higher power ratings (8MW). Also, medium voltage operation is at this power level, particularly at electrical network, a required feature. Consequently, high power medium-voltage multilevel converters for VS-WTS have been attracting more and more attentions. Nevertheless, most modern high-power VS-WTS consist of a large number of Wind Turbine Generators (WTGs) connected and operating simultaneously to reach the multi-megawatt level. This study presents a control strategy for a grid-connected onshore wind farm based Permanent Magnet Synchronous Generator (PMSG), where cascaded multilevel converters are employed on the generators and grid side. The generator-side converters provide speed control of the turbine-generator units to implement Maximum Power Point Tracking. The grid side Neutral Point diode Clamped (NPC) converter system regulates reactive and real power flow to the electrical network. So, it regulates the dc bus voltage and the ac side power-factor. The modulation technique for the proposed topology is developed from Space Vector Modulation. The overall control approaches of a rectifiers and an NPC are also described. Nonlinear Sliding Mode technique (NL-SM) with speed control and Vector Oriented Control are developed. To validate the proposed approaches, simulations are carried out on a high-power wind energy conversion system with multi-level converters and MATLAB/Simulink software. The simulation results demonstrate a good performance in diverse scenarios.</p>
27	<p>Arbaoui Mohamed Ali. Study the development (Evolution) of process of hydraulic fracturing « the study of the well-bore ONM 543». (details, 5)</p> <p>Abstract. Abstract: The natural exploitation of an oil deposit, means reducing the hydrocarbons to the surface with favorable conditions, with its natural depletion. When this energy does not meet the constraints of production, and the reserves in place are important, new recovery techniques are introduced to improve the characteristics and the potential of well. Among the techniques commonly used, was the stimulation either by acidification (acid job) or by creating artificial transmissibility (bypass) it's hydraulic fracturing. Hydraulic fracturing is a technique that allows you to create, with an artificial manner a permeable drain by the injection of fluid carrying proppant into the reservoir. In this work we has tried to define everything that bound with hydraulic fracturing like the damage and the concept of skin as the main constraints exerted on the rock and mechanical and petrophysical properties of some reservoir rocks, the development, implementation, test mini frac and the propagation of different models and we gave a general information for frac fluids, proppants and the application of the method of NOLTE</p>



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71	<p>for the analysis pressure declines, Finally we has studied the well ONM 543 and the results confirmed the success of the operation with a gain of flow rates of 7.4 m3 / h, if we take the price of barrel is \$ 40 the payback period is 21 days.</p> <p>Rachid Belhadj Aissa and Djamel Boutoutaou. Characterization of groundwater in arid zones (case of the basin of Ouargla) (details,  5)</p> <p>Abstract. The preservation of natural water resources occupies a dominant position in the expectations of the population in Algeria, particularly in the south of the country. The region of Ouargla is fed by groundwater and it is subject to a strong demand for water, including the share of agriculture. The quality of these waters varies from one zone to another. According to previous studies, the quality of these resources is mediocre and requires treatment. Then, it is essential to bring elements of knowledge and explanation to make an analysis of the situation and to implement the strategies face of the threats looming over the quality of water resources. Objective of this work is to evaluate the physico-chemical quality of water from different aquifers and determine the quality of these waters to potability standards. The results obtained reveal that the waters of unconfined aquifer are very poor quality and they are too mineralized, very hard, high conductivity, lower levels are in the water of the Albian, but its excessive temperature and the great depth makes it difficult exploitable. The waters of terminal complex (miopliocene and senonian) the more interesting for AEP, show an average mineralization, with acceptable temperature 22C°, nevertheless they are bad physico-chemical quality in reference standards of the WHO, they necessities require further treatment before human uses.</p>
83	<p>Samir Medjekal, Raúl Bodas, Hacène Bousseboua and Secundino Lopez. Evaluation of three medicinal plants for methane production, fibre digestion and rumen fermentation in vitro (details,  5)</p> <p>Abstract. Methane emission from ruminants reduces the efficiency of feed utilization. Therefore, manipulation of rumen microbial ecosystem for reducing methane emission by ruminants to improve their performance is one of the most important goals for animal nutritionists. This experiment was conducted to study the effects of three selected medicinal plants on fermentation patterns and to evaluate their potential as antimethanogenic additives in ruminant feeds. Effects of <i>Nigella sativa</i>, <i>Rosmarinus officinalis</i> and <i>Zingiber officinale</i>, which were added to the fermentation substrate as a dry powder, on ruminal fermentation, fibre digestion and methane production, were studied in vitro in batch cultures of mixed rumen microorganisms. Serum bottles containing 500 mg of substrate (a mixture of 500 mg of alfalfa hay, 400 mg of grass hay and 100 mg of barley grain per gram), 50 mg of the plant tested and 50 ml of buffered rumen fluid (10 ml sheep rumen fluid + 40 ml culture medium) were incubated at 39 °C for 24 h. After incubation, gas and methane production, pH and volatile fatty acid (VFA) concentration in the incubation medium and dry matter and neutral detergent fibre disappearance were recorded. The amounts of methane produced after 24 hours of fermentation varied between 0.28 and 1.12 mmol/g DM. A significant methanereduction was observed with monensin (positive control, 75% less methane than control) and <i>Nigella sativa</i> (20% less methane than control) and no effect was observed with the other treatments. Further studies are warranted to confirm the antimethanogenic activity of <i>Nigella sativa</i>, establish a dose-response relationship, examine the stability in time of the effects, and test if the effects can be reproduced in vivo with animals.</p>

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64	<p>Nadjib Haied, Atif Foufou, Salah Chaab, Mohamed Azlaoui, Samira Khadri, Kheira Benzahia and Imen Benzahia. Drought assessment and monitoring using meteorological indices in a semi-arid region (details, )</p> <p>Abstract. In the last decades a big interest was given to climate changes and especially drought monitoring. Defined as a natural hazard, and characterized by a prolonged absence, a marked deficit or a low precipitation distribution compared to the normal climate, drought may have several impacts on agriculture and hydrology. The drought characterization becomes possible with the initiation of the meteorological, agricultural and hydrological drought indices. Algeria is concerned by this phenomenon, because drought periods have begun since 1975. Deciles, Standardized Precipitation and Reconnaissance Drought Indices have been used to assess the meteorological drought in the world and they show their performance, why they have been chosen to study Wadi Djelfa-Hadjia sub-basin. The two first indices are based on precipitation only. However the RDI uses precipitation and the potential evapotranspiration (PET). Several methods can be used to estimate PET, but Hargreaves method is more accurate for semi-arid regions. The correlation between the SPI and RDI indices is good in the different time scales confirming their performance. The DRI gives the greater number of drought months, but both methods show the same drought durations and severity as the results of the Deciles index.</p>
74	<p>Khalaf Al Abdullah and Sahar Awad. Synthesis of ZnO Nanopowders By Using Sol-Gel and Studying Their Structural and Electrical Properties at Different Temperature (details, )</p> <p>Abstract. Abstract Zinc oxide (ZnO) Nanopowders were synthesized by the sol-gel method prepared by mixing a methanol solution and Zinc acetate dehydrate and adding ammonia NH₄OH to adjust pH value of solution between 9 and 11, the resulting Nanopowders ZnO form a substrate material for the fabrication of ZnO varistors. Microstructure of ZnO nanoparticles were carried out by x-ray diffraction (XRD) that showed that the zinc oxide nanoparticles exhibited hexagonal wurtzite structure. The average particle size was about 12-30 nm. The topographical information of surface were investigated by Atomic Force Microscope (AFM) that showed a homogeneous distribution of nanoparticles with average size of 22 nm which is in good agreement with XRD results, their size distribution was narrow (Fig.6). The I-V characteristics were obtained at a sintering temperature equal to 1,050 °C using MEGOHMMETER.</p>
24	<p>Mohamed Ibrahim Hachani, Abdelouahed Kriker and Mehdi Seghiri. Experimental study and comparison between the use of natural and artificial coarse aggregate in concrete mixture (details, )</p> <p>Abstract. There is a general belief that crushed aggregates contribute higher strength in concreting compared to rounded aggregates. Contrary to this belief, our study revealed: rounded aggregates perform better than crushed aggregates because the rounded shape which considered as a negative characteristic is compensated by improving the workability and reducing the need of mixing water, thus; the water/cement ratio, these essential parameters leads to gaining strengths in concrete. From the laboratory test of strength determination it was explored that rounded aggregate provide more compressive, flexural tensile and splitting tensile strengths (26%, 46% and 38% at 28 days) than crushed aggregates. Relevant to mention: uncrushed aggregate is cheaper than crushed aggregate. Consequently, concrete with uncrushed aggregates will be cheaper. It can be concluded that uncrushed aggregates are appropriate for medium grade concrete for better performance in terms of workability, strength and economy.</p>



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	Future study is required on testing other artificial aggregate with different mineralogy characteristics and different type of crusher rather than gyrator crusher.
92	<p>Jean Zaraket, Michel Aillerie and Chafic Salame. Capacitance evolution of PV solar modules under thermal stress (details, )</p> <p>Abstract. The main purpose of this work is the study of the performance of PV modules under influence of thermal stress. Different levels of temperature were applied into the solar cell structure and the C-V characteristic was measured, in passive and active conditions, for using 10 minutes periods of time for each dose of stress. The changes in characteristics, caused the temperature parameter introduced for different stress levels, were monitored. Experimental evidence confirmed that different levels of temperatures are major degrading factor affecting the performance, efficiency, and power of solar cells and modules. The paper contributes to research on the adverse effects of temperature on the capacitance and normal functioning of cells and solar modules.</p>
39	<p>Asma Bettahar, Imed Eddin Nezli and Rabah Kechiched. Evolution and Mineralization of Water Chemistry in the Aquifer systems of the Terminal Complex of the Wadi Righ Valley (details, )</p> <p>Abstract. Groundwater resources in the Wadi Righ valley are represented like the parta parts of the eastern basin of the Algerian Sahara. It carracterised by a superposed by two major aquifers: the former represented by the Intercalary Continental (IC) and the latter by Terminal Complex (TC). This study has focused on the quality aspects of water hosted into Terminal Complex which chow a multi-layers lithology. It from a qualitative point of view, various studies have highlighted that the waters of this region showed an excessive mineralization, including the waters of the Terminal Complex (CE= 5854.61 S / cm) .in the order to identify the mineralization sources the approach of multivariate statistics were used. It consists of several methods such as: principal components analysis (CPA) and hierarchical cluster analysis (HCA). The present article is a statistical approach by two multi methods various complementary (CPA, HCA), the application of these methods on applied to the analytical data obtained from wells in the region where the appurtenance of water car reach different layers of the water system of multilayered aquifer waters Terminal Complex of the Wadi Righ valley. Therefore, the linear correlations between the chemical elements were composition calculated and it shows a water composition which reflects the water and the lithological nature of different layers of the aquifer. It highlights the connection levels formation, and predicts possible connection between groundwaters in these's layers on one hand and it indicates the mineralization origin of water represented by the influence of lithological formations. The results show that the mineralization of water is from geological origin. They concern the composition of the layers that make up the Complex Terminal.</p>
19	<p>Abdelkader Aissat. Contacting of Si/SiO₂ core/shell nanowires using laser photolithography (details, )</p> <p>Abstract. The contamination results of extended ion or electron beam irradiation, the type of substrate used, the time required to contact a set of nanowires to gain accurate acknowledge on nanowires properties are the main limitations of Focused Ion Beam FIB and Electron Ion Beam EBL techniques for nanowires characterization. We present in this latter, a direct writing technique which is laser photolithography to contact a set of core/shell Si/SiO₂ nanowires fabricated by 30 KeV Au+AuSi LMAIS/FIB to allow forward the electrical characterization of these nanowires.</p>



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48	<p>Atif Foufou, Saadane Djorfi, Nadjib Haied, Rabah Kechiched, Mohamed Azlaoui and Azzedine Hani. Water pollution diagnosis and risk assessment of Wadi Zied plain aquifer caused by the leachates of Annaba landfill (N-E Algeria) (details,  5)</p> <p>Abstract. The population growth and the intensification of socio-economic activities in the region of Annaba, have a direct impact of increasing waste discharge of all kinds at its landfill. This last represents a real source of environmental pollution. This study aims to identify this pollution and its risks. Therefore, physico-chemical analyses were performed on leachates and water of the plain, which is located in the downstream of the landfill representing a direct relation with a highly sensitive ecosystem of the Fetzara Lake. A sampling campaign and analysis (pH, Eh, T, EC, major ions, heavy metals) were performed on all points (wells, boreholes and leachates). The mapping of hydrochemical elements allows the understanding of the pollution mechanisms and their origins. The use of LWPI as a tool for identifying hazards show that the leachate have a significant impact on water quality of the study area. A diagnosis of risks on public health has been achieved using the RI as hazard index. Results indicates few scenarios of water uses and show the significant influence of the old landfill site on the quality of water and the degradation of people's lives.</p>
47	<p>Khati Wyllia, Banaoui Ali and Gasmi Yousria. Antioxidant glutathion dependent System Response to in vivo exposure to metals in Perna perna of the Gulf of Annaba (Algeria). (details,  5)</p> <p>Abstract. In order to use the antioxidant glutathione dependent system as a biomarker of oxidative stress, the effect of metals on the metabolism of glutathion has been studied at the gills of the African mussel Perna perna living the easternmost Gulf of Annaba (Algeria). The response of the glutathion-S- transferase activity (GST) and the rates of Glutathion (GSH) were evaluated from these bivalves, after in vivo exposure to three concentrations of Cadmium (50, 100 and 200 µg/l) and copper (10, 15 and 25 µg/l) during 7 days. The analyses showed a significant decrease of GSH levels depending on the concentration of cadmium in the medium (93,66 + 16,5 nmoles/mg protein at 200 Cd µg/l) compared to controls (250,74 + 7,8 nmoles/mg prot.). GST activities were inducted in exposed mussels to 100 and 200 µg / l of cadmium with respective values of 217,67 ± 45,72 and 232,19 ± 21,19 nmoles / min / mg protein compared to controls (182,22 ± 27,39 nmoles/min/mg prot.). For the GSH levels it significantly decreased in exposed bivalves to different concentrations of copper, while the GST activity was strongly inhibited at 25 µg/l of Cu. In fact, Cadmium seems to increase GST activity using glutathion as a substrate which caused a decrease of GSH rates in the exposed mussels, while at the highest dose tested the GST was not required so other enzymes probably metallothioneins (metals detoxification proteins) support the function of antioxidant defense. In the other hand, bioaccumulation of the two metals (Cd) in exposed mussels seems to be not correlated with added concentrations. This situation can be related to the hypothesis that the antioxydant GSH dependent system is most likely involved in this phenomenon. The tested system in Perna perna, reported in this study may be a good biomarker to assess contamination of the marine environment particularly by metals.</p>
81	<p>Haddouche Adel, Farah Lotfi and Kara Mohammed. Fuzzy Logic Controller with Reduced Rules for a Maximum Power Point Tracker (details,  5)</p> <p>Abstract. Abstract: In this paper, an 8 rules fuzzy logic based maximum power point tracking (MPPT) algorithm for photovoltaic (PV) systems is achieved. Then, an interconnection to a conventional grid is simulated by MATLAB SIMULINK. The power variation and the current variation or voltage variation are chosen as inputs of the</p>



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	proposed controllers, which simplifies the calculation. The purposed FLC tested in terms of steady state performance and the dynamic of the PV system.
20	<p>Abdelhakim Hanafi and Djamel Alkama. Role of the urban vegetal in improving the thermal comfort of a public place of a Saharan city "Case of the city of Biskra / Algeria" (details,  5)</p> <p>Abstract. The open public spaces, especially the public places are for the population; meeting, communication, conviviality ...etc. So that these spaces play their role they must be ruled by a comfortable physical environment; the optimal use of these spaces deserves detailed knowledge of all the elements that can improve the climatic conditions of use of these spaces. The purpose of this article is to study and analyze the role played by vegetation (urban vegetal) in urban external spaces; since it is a fundamental component in this latter; of which it minimizes and intercepts the solar rays, a very important factor of thermal comfort outside; it reduces air temperatures; generates shade; absorbs radiated fluxes; and in general, it participates in the positive modification of physical environments (heat, humidity, light ...). Knowing that the people of the Saharan cities (hot climate and arid zone) seek to shelter solar rays by all means; especially during the summer. To the latter, most of people are affected by thermal stress, given the lack of freshness and shade. This leads them to abandon the public place, and to join the built spaces, while using air conditioning, which engendered more energy consumption (electricity). The "in situ" investigation has affected the climate dimension; ambient temperature, humidity, sunshine, solar radiation ... etc. and the insertion of urban vegetation (by simulation) as a mask against solar rays. The results confirm the primordial role of urban vegetal in the creation of shade, which has improved the thermal comfort of public places. Then the quality of urban life. Now; it is limited, in this article, to expose a single example of the research. It is a public place (Ben Badis) in the city of Biskra / Algeria; (dry climate and arid zone). The technique followed in this work ; is a combination of measures of the necessary climatic factors "in situ" and simulation using software.</p>
14	<p>Amina Benabderrahmane, Abdelylah Benazza, Derras Mokhtar and Samir Laouedj. Heat Transfer performance for Turbulent Flow Through a Tube Using Baffles. (details,  5)</p> <p>Abstract. Three dimensional numerical investigation of heat transfer enhancement inside a non-uniformly heated parabolic trough solar collector fitted with baffles under turbulent flow was studied in the current paper. Molten salt is used as heat transfer fluid and simulations are carried out in ANSYS computational fluid dynamics (CFD). The present data was validating by the empirical correlations available in the literatures and good agreement was obtained. The Nusselt number and friction factor values for using baffles are considerably higher than that for smooth pipe. The emplacement and the distance between two consecutive baffles have an effect non-negligible on heat transfer characteristics; the results demonstrate that the temperature gradient reduces with the inclusion of inserts.</p>
68	<p>Yasmeen Dawood. The influence of substrate temperature on CdS thin films properties prepared by pulse laser deposition on glass substrates(details,  5)</p> <p>Abstract. This paper presents the study of the structural and optical properties of cadmium Sulfide thin films prepared by pulsed Nd:YAG laser. Thin films were deposited at 400mj laser energy at different substrate temperature. The crystallographic structure and the grain size were studied by the AFM, it was found these films have grain size in a</p>

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	<p>range (90-120) nm at substrate temperature (200, 225, 275 and 300)C respectively. To study the optical properties, the absorbance and transmittance spectra have been recorded in the range of wavelength (300-900) nm. The optical energy band gap was determined for allowed direct electronic transition. It was found that the band gap decrease with the substrate temperature increases.</p>
61	<p>Iman Hameed. Study physical and optoelectronic properties of CuInSe₂/Si heterojunction solar cells (details,  5)</p> <p>Abstract. CuInSe₂ (CIS) solar cell has been prepared by use vacuum thermal evaporation technique, with different thickness on (n-type) single crystal silicon substrate with orientation (111), the sample is annealed in the thermal range (400-600) K. The (C-V) measurements indicate that the heterojunction of abrupt type, the capacitance decreases with increasing thickness and annealing temperature, while there is increasing in charge carriers concentration. The (I-V) characterization under illumination found to improve in efficiency of a solar cell with thickness and annealing temperature, the solar cell which have an optimal condition (t=750±20) NM, Ta=600K have higher efficiency among other cells (η =5. 6). A short circuit current density (Jsc) of (30mA/ cm²), open circuit voltage (Voc) of (0.5Volt).</p>
30	<p>Toumi Nabil. Study of a solar water pump to supply a building site Oil tanker (details,  5)</p> <p>Abstract. The objective of this study is to avoid disturbances and interruptions in the petroleum activity by reducing the supply of industrial water on the one hand and to reduce the cost of hydraulic activity on the other side. The object of our study will be a construction site of petroleum drilling. A particular attention was given in comparison with two systems regarding cost of the pumped for meter cube of water. The first system: submersible pumps driven by generators using gas-oil as a source of energy. The second system: submersible pumps fed by photovoltaic panels. Key words: (photovoltaic panels. Pumps immersed. Generators) I. Introduction Currently, most of the electrical production is produced starting from fossil energy resources like coal, natural gas, oil and uranium. Their refresh rate is extremely slow on a human scale, Which leads to the risk of depletion of these resources. More especially as the request does not cease growing and tends as of now to be higher than the other, resulting, for example in a strong fluctuation in world price of oil. In addition, this kind of energy consumption is not neutral on the environment. For hydrocarbons and coal, for example, important gas emissions of greenhouse effect are generated daily playing a paramount role at the level of the climatic disordered state and increase in pollution. Till now, the photovoltaic one found its utility in applications to small scales and for isolated systems of transmissions (our case is a site of petroleum drilling). Photovoltaic energy is an interesting energy source. It is renewable, inexhaustible and nonpolluting. So that make it used on a wide range of applications and to satisfy the constraints with the cost, the system should present a good exploitation of the photovoltaic cells.</p>
52	<p>Gasmi Yousria, Belhocine Karim, Khati Willia, Bensouillah Mourad and Denizo Jean Pierre. Neuromast alteration system of the lateral line of a freshwater fish "Gambusia affinis" by various xenobiotics (details,  5)</p> <p>Abstract. A topographical and anatomical study of mechanoreceptors in the lateral line of the head of a teleostéen G affinis was undertaken before and after exposure of the latter to specific doses of Gentamicin, photonics microscopy shows that exposure to a mechanoreceptor daily dose of 80 mg of Gentamicin for 15 days causes a separation of</p>



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	<p>the cilia from the apex of the cell .However, the various component organ areas seem to keep structural integrity. However, the observation of the ultra structure of ciliated sensory cell specimens treated with Gentamicin shows an alteration of the cell illustrated by the loss of the cilia of the apex and those synaptic structures of the basal cytoplasm, however, afferent and efferent endings are maintained .the increasing dose of Gentamicin causes the acceleration of the degenerative process of the ciliated cell, but stopping treatment brings up the establishment of a regenerative process revealing the reversibility of the effect of the antibiotic on the ciliated sensory cell. Mechanoreceptor's exposure to methyl parathion in high doses 1 mg/l for a time interval of 7 days does not cause any change in the apical part of the cell. However, different areas making up the body seem to have retained their structural integrity.</p>
62	<p>Chaouki Mourad and Chaouch Noura. Geochemical study of the degree of water pollution of the terminal complex (CT) in the Ouargla region (Algeria). (details,  5)</p> <p>Abstract. The main objective of this study is a diagnosis of groundwater quality in the Ouargla region. The physicochemical quality analysis involved certain samples taken from boreholes of different aquifers exploited in the region, used for human consumption. We have presented a method for assessing and mapping vulnerability to groundwater pollution. For it, we have introduced a mineral pollution index (MPI). We carried out the sampling on-site and laboratory analysis Of several boreholes of the bowl. In order to arrive at a database to solve these problems which characterize the bowl, using software called SURFER 12.</p>
21	<p>Marouane Samir Guedouh and Nouredine Zemmouri. Courtyard Building's Morphology Impact on Thermal and Luminous Environments in Hot and Arid Region (details,  5)</p> <p>Abstract. This paper investigates in indoor thermal and luminous environments of the existing courtyard buildings in an arid area, in order to identify daylighting strategies and thermal comfort conditions in this type of building. As Biskra town is situated in the hot and dry region of Algeria and facing a hot and intense radiation, drives us to seek a balance between thermal and luminous environments. During summer and winter seasons, monitoring campaigns have been conducted to collect temperatures and illuminance levels data using a digital monitoring instrument "LM/FI 20"; these on-site measurements intend to assess courtyard impact on it adjacent spaces under clear sky conditions. A Special attention based on courtyard building's architecture of different morphologies and periods such as: traditional, colonial, post-colonial and contemporary samples. The selection of relevant samples morphologies can reveal many strategies on climate adaptation under local conditions. The important findings are related to the high potential for natural lighting and thermal control that courtyard building offer, and later, discovered the relationship between the morphological indicators and the qualities of thermal and luminous environments of adjacent spaces, in addition, courtyard remains more effective in controlling, regulating and homogenizing the luminous environment. The trilogy areas surround a courtyard building (Indoor spaces/outdoor/courtyard) are interacting in systemic ways to enhance building's thermal and luminous performances and solve the dilemma between daylighting and protecting the building from hot sunlight in arid areas.</p>
90	<p>Aseel B. Al-Zubaid, Kadum M. Shabeeb and Aynoor I. Ali. Study The Effect of Recycled Glass on The Mechanical Properties of Green Concrete(details,  5)</p>

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	<p>Abstract. The environmental troubles that are related to cement manufacturing makes the new studies moving forward to using materials have less environmental impact, thus, in this paper we utilized different type of recycled glass such as (neon glass, brown glass, and green glass) that has high percentage of silicon dioxide (SiO₂) with different concentrations. Utilization these landfall materials can be considered as keeping on resources. Different waste glasses used as a partial replacement of cement with different concentrations 11%, 13%, and 15% of cement weight for each type, and study the effect of it on the mechanical properties of concrete. After mixing, casting, and curing in water at (20±2)°C for (7, 14, and 28) days, the mechanical properties showed that the compressive strength and flexural show highest results at 13% from cement weight of neon glass, whereas splitting tensile strength appeared the highest value at the same percentage but from green glass.</p>
22	<p>Seghiri Mehdi, Boutoutaou Djamel, Kriker Abdelouahed and Hachani Mohamed Ibrahim. The Possibility of Making a Composite Material from Waste Plastic (details,  5)</p> <p>Abstract. The plastic is the most used man-made material in the world through their specific characteristics such as easy manufacturing and shaping, cheaper cost and low density. It is very useful in in different areas such as medicine, architecture, construction and transport. Unfortunately after the use are thrown in nature. Their accumulation poses an environmental problem. Due to the non-biodegradable. The utilization of waste plastic in manufactory of another materiel is a partial solution environmental that will reduce the proportion of waste plastic incineration or landfill. This work focuses on the Possibility of Making a Composite Material from à sand dune (A natural source abounds) and recycled height density polythene (HDPEr) by mixing the amount. The composite has been designated as roof tile. An experimental test program was conducted on the polymer roof tile containing different percentages (30%, 40%, 50%, 60%, 70% and 80%) of recycled (HDPEr) from the weight of the mixture. Experimental tests were conducted on density, the breaking load by flexural and impermeability test. In this present study, the density of polymer roof tile varies from 1.379 to 1.873 g/ cm³. . The breaking strength by flexural of all polymer roof tile mix were below the resistance of Clay roof tile. A good impermeability gives compared to the control roof tile.</p>
54	<p>Slimane Abdeldjabbar Benhamida, Imed Eddine Nezli and Rabah Kechiched. Sources of chemistry of the albian waters under arid conditions. Application to the western regions of the Algerian Sahara (details,  5)</p> <p>Abstract. The zone of Touat, Gourara, Tidikelt, on which is centered our survey is shared between two states of the big Algerian South (Adrar and Tamanrasset). This zone, characterized by its hyperarid climate and its very heterogeneous sedimentary formations, contain in the thin funds of its basement one of the biggest aquiferous tablecloth in Africa so-called Continental Intercalary (Albian) weakly renewable, to see fossil, subject to an overexploitation so as to satisfy the agglomerations' needs in water. Of the hydro chemical point of view, the interaction water-rock is the factor responsible for the mineralization of waters. The objective of the present paper is to take out again the influence of the lithology on the chemistry of albian waters, rarely studied, in an arid context of the Sahara. Our contribution is a hydrogeochemical approach to the survey of the tablecloth in order to put in evidence the mechanisms of acquirement of the chemistry of waters contained in the formations of this aquifer. The final results show that the influence of the aquifer matrix particularly rich in evaporates, carbonates and silicates and fluorine confer to the aquiferous of waters relatively mineralized, last and with contents in</p>



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	fluorine that pass the norms admitted by the WHO. The final results show that the influence of the aquifer matrix particularly rich in evaporates, carbonates, silicates and fluorine provide the aquifer with relatively mineralized waters, rough and with contents in fluorine that surpass the norms admitted by the WHO.
43	<p>Legrioui Radhia and Baali Fethi. Water Quality At a Karstic Aquifer In The Region Of Tebessa, Northeast –Algeria- (details, )</p> <p>Abstract. The study area is a part of the Saharan Atlas in Northeastern Algeria. It is located in a hydrogeological basin limited with the mountains of Djebel Troubia, Djebel Arour, Djebel Gaagaa, Djebel Draaa el Korratz and Djebel Tezbent. The Maestrichtian limestones constitute the karstic aquifer reservoir through which emerges a number of sources of fresh water (throughout the limestone cornich). The study area is characterized by a semi-arid climate, with a very hot and dry summer; the winter is of a very cold and humid climate. The average annual precipitation is around 300 mm. The hydrogeological study on the relationship and operation of five sources (Ain Troubia, El Megalib, Gaagaa, Youkous and Ain Sarie) located in different altitudes and spaced fairly large distances. The flow variation is a function of time and the precipitation shows a resemblance characterized by curves generally affected by certain peaks. The followed hydrochemical of the five sources showed the same chemical facies which is calcic to magnesian bicarbonated with predominance of the first facies; except the source of Ain Sari is composed of calcic chlorinated. The evolution of the contents of the chemical elements is due to the increase in the flow of the sources after the period of flood which demonstrates the effect of the behavior of the karst area.</p>
32	<p>Mohamed Azlaoui, Imed Eddine Nezli, Atif Foufou and Nadjib Haied. Hydrodynamic Modeling of the Albian Aquifer of the Plain of Ain Oussera (Semi-Arid Area, Algeria). (details, )</p> <p>Abstract. The Ain Oussera plain, a semi-arid zone in the central part of northern Algeria, has developed significantly since the early 2000s when a number of agricultural development programs were launched. The increase in irrigated areas has led to a significant increase in water requirements and consequently an overexploitation of the aquifer that has been observed for more than 20 years (1985). A significant decrease in its piezometric level results in a deterioration in the chemical quality of its waters. This paper is a contribution to the effective management of groundwater in the studied area by using a mathematical model to manage the water potential and preserve its quality. For this reason, we have established a conceptual model using the MODFLOW computer program, which is able to provide us with a deterministic and two-dimensional numerical simulation, in steady and transient state, of the studied aquifer groundwater flow. The main results allowed us to develop a better view of the different scenarios underlying the piezometric fluctuations. The predictions show that the water table is in an alarming state, which requires integrated management of its underground resources in order to guarantee sustainable development.</p>
33	<p>Adawiya Haider, Mohammed Haider, Eesee Challob and Challob. Effect of Laser Fluence through a Microarray Droplets Transaction Micro-Organisms Cells by LIFT Technique (details, )</p> <p>Abstract. Laser Induced Forward Transfer (LIFT) is one important technique to fabricate microstructures, , and it has been widely used in direct-print many materials with a high degree of spatial re solution . In present work, The results of the application of the LIFT, a microarray droplet has been created from liquid thin film coated titanium Oxide thin film</p>



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	<p>and study the laser fluence on the droplet transfer with Checking the viability of the transferred cells assessing the potential of laser. Titanium Oxide thin films thickness less than 100 nm, were deposited on glass substrate. For characterization, Scanning Electron Microscope was exercised to check the integrity of Yeast cells which showed maintenance during the process. The MacConkey agriculture media was used to test viability of Yeast cells. Further, studying the optimum environments to preserve viability of the transferred yeast cells, these conditions were at laser fluence of 250mJ/cm² and 100µm distance between donor and receptor layers.</p>
58	<p>Guettaia Sabrine, Hacini Messaoud, Boudjema Abderrezak and Zahrouna Abderrezak. Vulnerability Assessment Of An Aquifer In Arid Environment And Comparison Of The Applied Methods: Case Of The Mio-plio- Quaternary Aquifer In Oued Righ Valley (Southeastern Algeria). (details,  5)</p> <p>Abstract. Protecting the quality of water resources has become a priority in Algeria and in several countries around the world, due to droughts and to the proliferation of pollution sources, such as domestic and industrial wastewater discharges, raw discharges, chemical fertilizers, etc. The valley of Oued Righ, which is one of the oldest cultivated areas and one of the best known of the Algerian northern Sahara, has experienced significant population growth and appreciable agricultural development. The water needs in this region are provided from groundwater resources, contained in the aquifers of the Terminal Complex and Intercalary Continental, and topped by the Quaternary aquifer. The present study focuses on the aquifer in the Mio-Plio-Quaternary of Oued Righ Valley, in order to assess and map its vulnerability to pollution, by applying the DRASTIC and GOD methods. The comparative study, based on Kendall test, showed that the two methods have a moderate agreement ($W = 0.703$). The statistical analysis of different vulnerability classes revealed that vulnerability assessment, using the DRASTIC method, may be represented by four classes: "Very low", "Low", "Medium" and "High", with a dominance of class "Medium" (74.30%). The GOD method resulted in a vulnerability that sits between two classes, 'Low' and 'Medium', with a noted domination of class "Low" (70%). Comparison of the two vulnerability maps obtained from the DRASTIC and GOD methods shows that the DRASTIC method better represents the distribution of degrees of vulnerability to pollution in the aquifer of the Mio-Plio- Quaternary.</p>
75	<p>Ibrahim Recioui, Mustapha Daddi Bouhoun, Djamel Boutoutaou and Adil Mihoub. Spatial variation of the water rising and water table salinity in the Basin of Ouargla (Algerian Sahara) (details,  5)</p> <p>Abstract. Abstract. The increase of waters requirements for both the needs of drinking water supply that the needs of industries and agriculture has pushed the services concerned of the hydraulics to develop a number of drilling capturing the aquifers of terminal complex (CT) and the continental intercalary (CI). This exploitation of groundwater has proved to be excessive which has created an imbalance of the water table and subsequently this situation has led and contributes in a direct way to the water table rising in Ouargla basin. The study shows that the problem of water rising has had serious effects on the physical degradation of soils by the congestion that it causes and the formation of gypseous crusts, compact, as well as the chemical degradation by the salinization of soils. The results of the study also show that the risk of salinity is proportional with the piezometric level of water table depth. The obtained values are too high and exceeds the authorized standards of water salinity, for instance the degree of water table salinity vary from: 2.4 g.l⁻¹ and reaches 150 g.l⁻¹ in some regions of Ouargla Basin.</p>



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65	<p>Muhammad Aziz. Combined supercritical water gasification of algae and hydrogenation for hydrogen production and storage (details, )</p> <p>Abstract. Combined system for converting algae to hydrogen is developed based on principles of enhanced process integration technology to achieve high total energy efficiency. The system mainly consists of supercritical water gasification, hydrogen separation, hydrogenation, and combined cycle. Enhanced process integration combines both exergy recovery and process integration technologies, therefore, exergy destruction throughout the combined system can be minimized leading to high energy efficiency. Algae are converted initially to hydrogen-rich syngas through supercritical water gasification. Hydrogen separation is performed to produce hydrogen which is hydrogenated to achieve more convenient storage and transport. The remaining gas is combusted for power generation using combined cycle. Process modeling and evaluation regarding the effect of some operating parameters to total energy efficiency are performed. The combined system can achieve high total energy efficiency, higher than 60%.</p>
69	<p>Khalaf Al Abdullah, Rawad Hamdan and Ahwar Batal. The Enhancement of PVDF Pyroelectricity (Pyroelectric Coefficient and Dipole Moment) by Inclusions (details, )</p> <p>Abstract. The Pyroelectricity of Poly vinylidene fluoride (PVDF) is improved by incorporation inclusions in PVDF. The best inclusions properties (volume fraction, dielectric constant, pyroelectric coefficient, molecular weight and density) were determined, which increase the pyroelectrical coefficient and dipole moment of PVDF. The change in composite (PVDF and inclusion) dielectric constant is estimated by Maxwell, Clausius–Mossotti, Lichtenecker and Vo-Shi models. For very small volume fraction (<0.035) and dielectric constant of nonferroelectric inclusion is slightly smaller than PVDF, the results show that the pyroelectric coefficient of PVDF composite increases. However, for pyroelectrical inclusion, the pyroelectric coefficient of polymer composite can increase first, for very small volume fraction (<0.035), very low pyroelectric coefficient and dielectric constant of pyroelectrical inclusion is slightly smaller than PVDF. Second, for very small volume fraction (<0.035), high pyroelectric coefficient and dielectric constant of pyroelectrical inclusion is slightly higher than PVDF. Third, for high pyroelectric coefficient and very small dielectric constant of pyroelectrical inclusion. In addition, the maximum value of the dipole moment is obtained under the following conditions: very small volume fraction (<0.035), both inclusion density and dielectric constant is smaller than PVDF, and inclusion molecular weight is higher than PVDF, or also under those following conditions: high volume fraction, inclusion density is smaller than PVDF and both molecular weight and dielectric constant of inclusion are higher than PVDF. © 2017 The Authors. Published by Elsevier Ltd. Peer-review under responsibility of the Euro-Mediterranean Institute for Sustainable Development (EUMISD). Keywords: Keywords: Pyroelectricity, pyroelectrical</p>
29	<p>Abdenmour Haddane and Messaoud Hacini. Effect of evaporite palaeo-lacustrine facies on the geochemistry of brine, economy implication. Case of Chott Bagdad Ouargla, South-Eastern Algeria (details)</p> <p>Abstract. The experimental investigation is a part of a wider research programme, addressed to valorise the content of chott brine in south-est Algeria, by using multi disciplinary methods. This first paper reports on the analyses of paleo-lake deposits in Coastal outcrop of chott Baghdad, and their impact on the chemical composition of brines. The marginal paleo-lake deposits in the southern part of the chott Baghdad are</p>



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Table with 2 columns: ID#, Submission. Row 1: dominated by gypsum formations and sandstones with in CaSO3 contents ranging between 49.2 and 85.8%. Row 2: Taif Saad, Hadi J.Alagealy, Raad Hameed and Ahmed Ashwiek. Theoretical study of Charge Transfer simulation At Fe Metal with Ge and ZnO semiconductors Nano devices material. Row 3: Ammar Hamza, Alhtheal E.D. and Ali K.Shakir. Enhancement the Efficiency of ZnO nanofiber mats antibacterial Using Novel PVA/Ag nanoparticles.

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36	<p>Abdelhalim Borni, Noureddine Bouarroudj, Abdelhak Bouchakour, Layachi Zaghba, Tameur Abdelkarim, Abdelkader Lakhdari and Laid Zarour. Optimized MPPT Controllers Using GA for Grid Connected Photovoltaic Systems, Comparative study (details,  5)</p> <p>Abstract. In this paper, comparisons between control strategies for grid connected photovoltaic system are proposed. MPPT algorithms P&O-PI, fuzzy logic-PI and optimized with genetic algorithm(GA) are used to control the DC/DC boost converter responsible to connect and extract the maximum power from the solar panel and transfer it to the DC-link. Another PI controller is used to maintain the DC-link voltage constant and close to its reference value under different conditions. Simulation results under different environmental and operating conditions are presented and discussed to verify the satisfactory of the performance of the proposed control strategies, in which the optimized fuzzy –PI controller by GA algorithms gives the better performance specification regarding the P&O-PI algorithm.</p>
84	<p>Benmedjahed Miloud, Maouedj Rachid and Mouhadjer Samir. Wind Potential Assessment of M’sila in Algerian Highlands Regions; Modeling of Wind Turbine Noise (details,  5)</p> <p>Abstract. The aim of this article is to evaluate wind energy produced and the noise impact by small wind turbine in the site of M’sila in Algerian highlands regions. The hourly data used in this study span a period of 10 years. The parameters considered are the wind speed. For this purpose, the most energetic and frequent speed as well as the Weibull parameters were evaluated. The wind energy production was estimated with WGT 5KW wind turbine. Finally, we calculated the noise produced by this wind turbine. The results obtained are ($k = 2.63$ and $C = 4.8\text{m / s}$) to 10 m above the ground with an average wind speed of 4.3 m / s. the annual energy produced equal to 4682.4 kWh ,we can conclude that these noise levels have no effect on health and comply with the Algerian standard.</p>
38	<p>Abdeslam Ilhem, Fehdi Chemseddine and Djabri Larbi. Application Of Drastic Method For Determining The Vulnerability Of an Alluvial Aquifer Morsott - El Aouinet N.e Algerien, Using Arcgis (details,  5)</p> <p>Abstract. Vulnerability assessment has become an important element in the management of water resources. The present study examined the sensitivity of an alluvial aquifer in a semi-arid environment, Morsott, Boukhadra and El-Aouinet region, N.E of Algeria. In order to characterize this pollution, the DRASTIC method has been applied, which will help to delineate vulnerability zones and to protect the areas not reached by pollution. The diversity of the aquifers and the problem of increasing salinity toward the northern part of the basin led us to propose this study which consist to its protection and trying to establish a vulnerability map by applying the DRASTIC method (Depth to groundwater, Recharge, Aquifer media, Soil media, Topography, Impact of the vadose zone, Conductivity). Examination of the vulnerability map allowed us to determine three classes ranging from very low to very high. The northern part of the plain show the highest vulnerability class, indicating that it is the most vulnerable to external contamination. The moderate class is scattered in the southern and east also the northwest area, the low class vulnerability occupies the most part of the plain which will guarantee a satisfactory sanitation in space and time, in the case of accidental pollution GIS technology was essential in completing the assessment work. Using this method of mapping to demonstrate the feasibility and the interest of the DRASTIC approach, in</p>



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	order to clearly delineate the zones likely to be polluted in order to reduce the pollution rate and Then protect our groundwater from contamination.
77	Jean Zaraket, Michel Aillerie and Chafic Salame. The Effect of Electrical stress under temperature in the characteristics of PV Solar Modules (details ,  5) Abstract. The effect of electrical stress under temperature, in dark and light conditions, on the performance of PV solar modules was evaluated. The forward and reverse characteristics I-V and C-V of a commercial silicon solar module have been measured in dark and light conditions after 10 min for each dose of stress. Experimental evidence showed that different stress levels of reverse currents under temperature is confirmed to be a major degrading factor and result in affecting the performance, efficiency, and power of a solar cell and module. The paper contributes to the research on the adverse effects of reverse currents under temperature on the normal functioning of cells and solar modules.
37	Layachi Zaghba, Messaouda Khennane, Nadjiba Terki, Abdelhalim Borni, Amor Fezzani, Abdelhak Bouchakour, Idriss Hadj Mahamed and Samir Hamid Oudjana. Experimental typical meteorological years to study energy performance of a PV grid-connected system (details ,  5) Abstract. Elaborate a typical meteorological year applied on a system connected to the grid in order to study and analyze the energy behavior. We then applied a hybrid intelligent technique based on sliding control and fuzzy logic for the search for a maximum global power point. Different simulations made using Matlab / Simulink. Performance indices such as reference yield (YR), array yield (YA), system yield (YF), system performance ratio (PR), array capture losses (LC) and system losses (LS). The daily parameters performance computed in 2015 shows a good productivity of the system