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1	<p>Abbas Hadj Abbas, Hacini Messaoud and Aiad Lahcen. Wastes of oil drilling: treatment technics and their effectiveness (details, )</p> <p>Abstract. In Hassi-Messoud's oil industry, the systems which are water based (WBM) are generally used for drilling in the first phase. For the rest of the well, the oil mud systems are employed (OBM). In the field of oil exploration, panoply of chemical products is employed in the drilling fluids formulation. These components of different natures and whose toxicity and biodegradability are of ill-defined parameters are; however, thrown into nature. In addition to the hydrocarbon (HC, such as diesel) which is a major constituent of oil based mud, we also can notice spills as well as a variety of other products and additives on the drilling sites. These wastes are usually stored in places called (crud wastes). These may cause major problems to the ecosystem. To treat these wastes, we have considered two methods which are: solidification/ stabilization (chemical) and thermal. So that we can evaluate the techniques of treatment, a series of analyses are performed on dozens of specimens of wastes before treatment. After that, and on the basis of our analyses of wastes, we opted for diagnostic treatments of pollution before and after solidification and stabilization. Finally, we have done some analyses before and after the thermal treatment to check the efficiency of the methods followed in the study.</p>
3	<p>Smili Billel, Mayoufi Moussa, Kaban Ivan, Gasser Jean.Georges and Gasser Francois. Study of the temperature-dependent behaviour and crystallization of Ni60Nb20Zr20 metallic glasses by resistivity, thermopower and DSC (details, )</p> <p>Abstract. In this paper, structural changes of amorphous Ni60Nb20Zr20 metallic glass will be characterized by thermal electrical resistivity, absolute thermoelectric power and by DSC measurements. A very good agreement between the phase transition temperatures determined using different techniques has been determined. Simultaneous measurements of resistivity and absolute thermoelectric power were performed with a very high degree of accuracy. The design of a new measuring device using LabView as a support developed by Dr. F.Gasser. The program supports the acquisition, real-time recording of all measurements and calculations resulting in four Excel files. In general these two electrical properties are measured separately on different sample as solids, amorphous or crystallized alloys. In this context, the study of the amorphous Ni60Nb20Zr20 confirmed the potential of this means of investigation to study the kinetics and structural thermal behavior of amorphous alloys. The automatic device of electric and thermoelectric measurements of resistivity and Seebeck coefficient has shown their usefulness as methods of Non Destructive testing "NDT" through Ziman formalism. The crystallization kinetics of Ni60Nb20Zr20 metallic glass have been studied under non-isothermal and isothermal conditions using electrical resistivity measurement. The activation energies of crystallization E_x, for three measurements of "resistivity as a function of temperature with different heating rate (0.5, 2.5 and 5) °C/min, is determined to be 510,2 kJ/mol and 498,6 kJ/mol using the Kissinger and Ozawa equations, respectively. The Johnson-Mehl-Avrami equation has also been applied to the isothermal kinetics and the Avrami exponents are in the range of 2.17-2.41 with an average value of $n=2,25$ indicating the growth of small particles with an increasing nucleation rate. The activation energy calculated by the Arrhenius equation in the isothermal process (560°C/565°C/570°C) has been found to decrease with the transformed volume fraction between 20% and 80% of volume</p>

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	transformed, and The average value calculated to be $E_x = 427.2$ kJ/mol. Structural and morphology study after thermal treatment have been identified by X-ray diffraction (XRD) and scanning electron microscope (SEM).
4	<p>Adawiya J. Haider, Riyad Hassan Al- Anbari, Ghadah Rasim Kadhim and Duha S. Ahmed. Exploring potential Environmental applications of TiO₂ Nanoparticles (details,  1)</p> <p>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 studies 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, (Pseudomonas aeruginosa), and (Staphylococcus aureus). 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>
5	<p>Djoughri Mohamed and Bentebba Mohamed Taher. PHYSICO-MECHANICAL PROPERTIES OF A BRICK BASED WITH SAND OF DUNES STABILIZED BY HYDRAULIC LIME (details,  1)</p> <p>Abstract. Brick establishment is an essential and elementary cell in any construction. In this study, bricks in mortar with sand of dunes (BRSD) were made and submitted to the various trials of characterization. The addition of hydraulic lime according to progressive rates allowed following the influence of the dosage of the latter on the physical characteristics and on the mechanical performances of bricks according to several formulations. The experimental method of formulation is mainly based on the optimization of materials constituting the hydraulic lime and the sand dunes, with the aim of reaching a new composition to enjoy physio-mechanical characteristics wishes. The various realized tries showed that the addition of lime, in a certain interval, possesses an important influence on the physic-mechanical performances of bricks in particular the mechanical resistance and the heat insulation, for a dosage of 30 % of hydraulic lime, the compression resistance of the brick is 8 MPa with a thermal conductivity of 1.7W.m-1.0c -1.</p>
6	<p>Abdelhamid Ksentini, Elbahi Azzag and Ahmed Bensalem. Analysis of an Autonomous Wind-Diesel System With Battery Storage (details,  1)</p>

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	<p>Abstract. Fossil fuels are down sharply and negatively affect the environment. The development of clean energy sources seems increasingly necessary; in particular, renewable energy that are an attractive alternative for energy supply isolated or difficult access sites not allowing connection year national grid. We present in this paper a new proper management of a Hybrid Energy System (HES) based renewable energy to power a standalone power grid, using a Wind Turbine Generator(WTG) and a Diesel Generator (DG), this strategy helps balance operation and management of these sources. The use of renewable energy depends first of the installed capacity of the site to power. The integration of the Battery Energy Storage System (BESS) is required to ensure energy autonomy of economic site. The economic analysis of the production of this energy and its effect on the environment and ecology will have a long term benefit.</p>
7	<p>Kateb Samir. Experimental Study of groundwater iron removal South of Algiers (ILLIZI) (details)</p> <p>Abstract. The subsoil waters which serve the town of Illizi are charged out of iron according to the origin with the rocks tanks and the nature of the grounds which surround the water tables, also having a significant turbidity due to the high rate of the precipitate of the ferri-iron, of color rusts, resulting from the oxidation of the ferro-iron in water. The presence of iron in subsoil waters involves many nuisances like the deterioration of the organoleptic quality and the color of water (in the presence of iron, brownish colouring with tendency of rust), the degradation of the works of distribution and storage of water (corrosion, filling) or the reduction in the effectiveness of disinfection by consumption of oxidant. This work was carried out on the pilots of deferrization being in the neighbourhoods of the town of ILLIZI. Our study related to two treatment units: * the first device is based on a mechanism of natural Oxygenation by Tower of cascades - Decantation –Filtration (TDF). * the second device, resting on a process of artificial Oxygenation by Aerators - Decantation –Filtration (ADF). The principal objective is to determine the characteristics of the pilots making it possible to obtain a greater effectiveness of the units from the removal point of view of iron. Measurement and analysis relate to the iron complete and the flow relate to the water taken since the raw water entry in the unit to its exit. The resulting ones obtained show that the two tested processes are very effective in the folding back of the iron contained in water: - First process (TDF) provides folding backs from 0, 3 to 0,014 mg/l. - Second process (ADF) provides folding backs from 0, 39 to 0,026 mg/l.</p>
8	<p>Samir Kateb. HYDRAULIC JUMP IN A SLOPED RECTANGULAR CHANNEL (details, )</p> <p>Abstract. The hydraulic jump in a sloped rectangular channel is theoretically and experimentally examined. The study aims to determine the effect of the channel's slope on the sequent depth ratio of the jump. A theoretical relation is proposed for the inflow Froude number as function of the sequent depth ratio and the channel slope. An experimental analysis is also proposed to find a better formulation of the obtained relation. For this motive, five positive slopes are tested. The relations obtained are recommended for designing irrigation ditches.</p>
9	<p>Halima Mazouz, Abderrahmane Belghachi and Pierre-Olivier Logerais. Comparison Between the Radiation Resistance Of np And pn InP Solar Cell(details, )</p>

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	<p>Abstract. In this paper effects of electron irradiation-induced deep level defects have been studied on both n/p and p/n Indium phosphide solar cells with very thin emitters. The simulation results show that n/p structure offers a somewhat better short circuit current but that the p/n structure offers improved circuit voltage, not only before electron irradiation but also after 1MeV electron irradiation with 5.1015 fluence. The simulation shows also that n/p solar cell structure is more resistance than that of p/n structure.</p>
10	<p>Abdelghani Harrag, Abdessalam Titraoui, Hamza Bahri and Messalti Sabir. Photovoltaic Pumping System Comparative Study Analysis Between Direct and Indirect Coupling Mode (details, )</p> <p>Abstract. In this paper, P&O algorithm is used in order to improve the performance of photovoltaic water pumping system in both dynamic and static response. The efficiency of the proposed algorithm has been studied successfully using a DC motor-pump powered using controller by thirty six PV modules via DC-DC boost converter derived by a P&O MPPT algorithm. Comparative study results between the direct and indirect modes coupling confirm that the proposed algorithm can effectively improve simultaneously: accuracy, rapidity, ripple and overshoot.</p>
11	<p>Kais Baouia. Removal of fluoride ions in water consumption in southern Algeria by reverse osmosis. (details, )</p> <p>Abstract. In certain countries, the Algerian South in particular, where the scarcity of drinking water resources of good quality has constrained the local populations to consume the underground waters that are rich in fluoride. Fluoride constitutes an essential component for the human body in moderate rates, between 0.5 to 1.5 mg/l of the consumed water. Nonetheless the population of the Southern Algeria is characterized by a very particular diet marked by tea and dates consumption that contain fluoride in an unidentified and accurate amount within the absence of a full knowledge of all fluoride sources . The present study aims at evaluating the daily amount of fluoride taken and to determine its distribution in water and the main consumed food, as well as localizing the zones of risk and seeks at the end a short term solution to this matter. This work focuses on the evaluation of the rate of fluoride contained in the diet. The dosage of fluoride of the two main watertables feeding the region of the study shows that the rates exceed by far the standards of the WHO. They are comprised in rates oscillating between 1.23 to 2.01 mg/l, as for the main food stuff. Actually four methods of fluoride removal from water have been tested, as for the method using reverse osmosis and Lime, they provide good findings compared to the other methods.</p>
12	<p>Laidi Maamar and Hanini Salah. Developing a feed forward multilayer neural network model for prediction biochemical oxygen demand, case study (details, )</p> <p>Abstract. The objective of this study is to assess the possibility of forecasting wastewater treatment plant (WWTP) behavior. For this reason, an appropriate artificial Neural Network (ANN) was developed to estimate relationship between 5-day Biochemical oxygen demand (BOD5) in the inlet stream of wastewater treatment plant by using daily records of total suspended solids (TSS) concentrations, total nitrogen (TN), Nitrate-nitrogen (NO₃-N), ammonium (NH₄+ -N), orthophosphates (PO₄3--P) and chemical oxygen demand (COD) as input data</p>

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	gathered during a research over a 1-year period. MATLAB code was designed to study feed forward backpropagation neural network with Levenberg-Marquardt training algorithm, a hyperbolic tangent sigmoid and linear transfer function at the hidden and the output layer, respectively. The ANN performances were measured by means of statistical indices during the test stage, such as the coefficient of determination (R2) and the Root Mean Square Error (RMSE). The findings of the analysis showed that, a satisfactory relationship (R2 close to the unit and RMSE close to zero) appears between the forecasted and the experimental data.
13	<p>Kateb Samir. EXPERIMENTAL STUDY OF SEQUENT DEPTHS RATIO OF HYDRAULIC JUMP IN SLOPED RECTANGULAR CHANEL (details,  1)</p> <p>Abstract. The hydraulic jump in a sloped rectangular sidewall inclination angle was experimentally examined. The study aimed to determine the effect of channel slope on the sequent depths ratio of the jump. An experimental analysis is proposed to determine experimental relationships of the inflow Froude number as a function of the sequent depth ratio of the jump and the channel slope. For this purpose, positive slopes were tested.</p>
14	<p>Zinelaabidine Boudjema, Rachid Taleb and Adil Yahdou. A new robust control scheme using second order sliding mode and fuzzy logic of a DFIM supplied by two five-level SVPWM inverters (details,  1)</p> <p>Abstract. Traditional field oriented control strategy including proportional-integral (PI) regulator for the speed drive of the doubly fed induction motor (DFIM) have some drawbacks such as parameter tuning complications, mediocre dynamic performances and reduced robustness. Therefore, based on the analysis of the mathematical model of a DFIM supplied by two five-level SVPWM inverters, this paper proposes a new robust control scheme based on super twisting sliding mode and fuzzy logic. The conventional sliding mode control (SMC) has vast chattering effect on the electromagnetic torque developed by the DFIM. In order to resolve this problem, a second order sliding mode technique based on super twisting algorithm and fuzzy logic functions is employed. The validity of the employed approach was tested by using Matlab/Simulink software. Interesting simulation results were obtained and remarkable advantages of the proposed control scheme were exposed including simple design of the control system, reduced chattering as well as the other advantages.</p>
15	<p>Layachi Zaghba, Messaouda Khennane, Nadjiba Terki, Abdelhalim Borni, Abdelhak Bouchakour, Amor Fezzani, Idriss Hadj Mahamed and Samir Hamid Oudjna. The Effect of Seasonal Variation on the Performances of Grid Connected Photovoltaic System in Southern of Algeria (details,  1)</p> <p>Abstract. This paper presents modeling, simulation, and analysis evaluation of the grid-connected PV generation system performance under MATLAB/Simulink. The objective is to study the effect of seasonal variation on the performances of grid connected photovoltaic system in southern of Algeria. This system works with a power converter. This converter allows the connection to the network and extracts maximum power from photovoltaic panels with the MPPT algorithm based on robust neuro fuzzy sliding approach. The photovoltaic energy produced by the PV generator will be completely injected on the network. Simulation results show that the system controlled by the neuro-fuzzy sliding adapts to changing external disturbances and</p>

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	show their effectiveness not only for continued maximum power point but also for response time and stability.
16	<p>Abdelhalim Borni, Boualem Benlhbib, Thameur Abdelkrim, Layachi Zaghba, Abdelhak Bouchakour and Laid Zarour. Fuzzy logic, PSO based Fuzzy logic algorithm and Current controls comparative for Grid-Connected Hybrid System (details,  1)</p> <p>Abstract. In this article the model of a hybrid system connected to grid is introduced. The hybrid system consists of a variable speed wind turbine, which is controlled by a Fuzzy MPPT controller, a photovoltaic generator controlled by PSO-Fuzzy MPPT controller to compensate the fluctuations of the produced power, decoupled PI and Fuzzy PI current controllers for grid side inverter. In first, we started by modeling the components of the conversion system, where we modeled the turbine, the permanent magnet generator, the AC/DC converter, the DC-DC (Boost) converter. In the end, we proceed with the injection to the grid of the power operated via the inverter, the inverter injects the electric active power operated by controlling the value of the DC bus voltage through a PI controller. The simulation studies have been performed using Matlab/Simulink. It can be concluded that a good control system performance can be achieved.</p>
17	<p>Cristina Rodriguez, Abed Alaswad and Abdul G. Olabi. Optimization of anaerobic digestion for mechanically pretreated waste paper (details,  1)</p> <p>Abstract. The accessibility of microorganisms to the fermentable components in anaerobic digestion is restricted by the complex structure of the lignocellulosic materials, such as paper wastes. In order to reduce the biomass particle size and to increase the feedstock' specific surface area available to the microorganisms, and therefore improve the methane yield, a beating pre-treatment with a Hollander beater was assessed. The mechanical pretreatment has been applied to a batch of office paper previously shredded and inoculated with sludge from a biogas production plant. The methane yield decreased with increased ratio F/I for all pretreatment times. The methane yield decreased by 5.24% when the paper waste was beaten for 30 min and increased by 20.60% for 60 min. A response surface methodology (RSM) was used in order to evaluate the effect of the operational parameters on the methane production. The optimal methane yield of 240.93ml/gVS from the numerical optimisation was found at BT= 54 min and F/I ratio= 0.3, allowing 14% extra methane when compared to the maximum methane production for untreated paper.</p>
18	<p>Arun Kumar, Shailendra Kumar Shukla and Jeevan Vachan Tirkey. A Review on Environment-Friendly Working Fluid for Organic Rankine Cycle for solar thermal power plant application (details,  1)</p> <p>Abstract. In the present work 25 potential working fluids including alkanes, alkenes, cycloalkanes and aromatic compounds are screened for the selection of a best suitable working fluid for the ORC system. Various properties like Boiling Point, Density Critical Parameters, Ozone Depletion Potential (ODP), Global Warming Potential (GWP) etc. of organic fluids are studied rigorously to selection the best one for solar thermal power plant application. ODP and GWP are also focused in ordered to get an environmental-friendly working fluid for the medium and high temperature ORC system. On the basis of above properties all organic fluids are</p>

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	<p>compared and select those whose boiling points are less than water and useful for medium and high temperature application. In this comparison straight chain and cyclic chain organic compounds are studied to select cyclic organic compound for their enhanced properties in comparison to straight chain. Once again aromatic cyclic compounds are compared with simple cyclic compounds and it was found that Benzene is the one of the best suitable organic fluids for ORC based solar thermal power plant.</p>
19	<p>Mohamed E. M. Salem, Hesham M. El-Batsh, Ahmed A. El-Betar and Ali M. A. Attia. Design of a Pitch Angle Control System for a Small Wind Turbine Based on Neural Network Fitting (details,  1)</p> <p>Abstract. A small pitch-controlled wind turbine with a 0.8 m rotor diameter has been designed, constructed and tested in the wind tunnel. This paper dissertation covers two main tasks. First, careful characterization of the small wind turbine is carried out at different wind velocities and pitch setting angles. Second, a pitch control system is implemented to control the power output of the turbine at wind speeds above the rated speed. A linkage mechanism is implemented for controlling the pitch angle by a servo motor. This proved to be efficient and convenient for small wind turbines and worked perfectly. All measurements and control actions were achieved by using Arduino Mega board supported with MATLAB SIMULINK.</p>
20	<p>Mounir Zouli, Ahmed Ouari, Sihem Ghoudelbourk and Djallel Dib. Influence of the External and Internal Parameters on the Characteristics of Generator PV (details,  1)</p> <p>Abstract. The increasing demand of electric energie and inevitable future exhaustion of the classical sources require major research on the alternative sources, like renewable energies. Among which, solar energy is the most largely used because of its many applications. And as Algeria comprises an exceptional solar layer thanks to its large surfaces, therefore it represents an important source of photovoltaic energy. The objective of this work is devoted to ensure the power of electrical energy produced by a power station PV the distribution network. The configuration of this system comprises a photovoltaic generator, connected to a chopper booster. For an optimal operation of the system, one must connect in cascades partial generators each one connected to a chopper booster adapted by an order MPPT by the method of Disturbance and Observation (P&O) to ensure the operation of their maximum powers whatever the climatic conditions, and also allows to raise the output voltage of these photovoltaic generators. The adaptation between the photovoltaic generator and the load was carried out with the help of converter DC/DC.</p>
21	<p>Ahmed I. El-Seesy. Investigation of the Combustion and Emission Characteristics of a Diesel Engine Fueled by Biodiesel-Diesel Fuel Mixture with Addition of Nanoparticles (details,  1)</p> <p>Abstract. This paper presents the results of an experimental study that was conducted to investigate the effect of nanoparticles added to biodiesel-diesel fuel mixture. Nano-biodiesel-diesel mixture fuels were prepared by adding of multi-walled carbon nanotubes (MWCNTs). These nanoparticles were blended with biodiesel-diesel fuel in varying mass fractions by the means of an ultrasonicator. A single cylinder direct injection diesel engine test rig was used to examine the effect</p>

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	<p>of nanoparticles on engine performance, combustion and emission characteristics with a constant speed of 2000 rpm and different engine loads. The engine test results indicated that the biodiesel-diesel fuel blend slightly decreases the engine performance and increases its emission characteristics at all tested engine operating conditions. The use of nanoparticles was found to improve all engine performance parameters. More specifically, the maximum emission reduction was obtained at a dose level of 30 mg/l (where noteworthy emission reduction was observed; NOx by 45 %, CO by 50 %, and UHC by 60 %). Also, the best of both engine combustion characteristics and performance were reached at dose level of 50 mg/l (the reduction in the brake specific fuel consumption - BSFC is about 15%, the increase in both the in-cylinder peak pressure - Pmax, and maximum gross heat release rate $dQ_g/d\theta_{max}$, are 7 % and 6.5% respectively). Finally, the recommended dose level to achieve a significant enhancement in all engine performance is 40 mg/l.</p>
22	<p>Sihem Ghodelbourk, Dib Djalel, Billel Maghni and Mounir Zouli. Selective Harmonic Elimination Strategy in Eleven Level Inverter For PV System with Unbalanced DC sources (details, )</p> <p>Abstract. The paper deals with the multilevel converters control strategy for photovoltaic system integrated in distribution grids. The objective of the proposed work is to design multilevel inverters for solar energy applications so as to reduce the Total Harmonic Distortion (THD) and to improve the power quality. The multilevel inverter power structure plays a vital role in every aspect of the power system. It is easier to produce a high-power, high-voltage inverter with the multilevel structure. The topologies of multilevel inverter have several advantages such as high output voltage, lower total harmonic distortion (THD) and reduction of voltage ratings of the power semiconductor switching devices. The proposed control strategy ensures an implementation of selective harmonic elimination (SHE) modulation for eleven levels. SHE is a very important and efficient strategy of eliminating selected harmonics by judicious selection of the firing angles of the inverter. Harmonics elimination technique eliminates the need of the expensive low pass filters in the system. Previous research considered that constant and equal DC sources with invariant behavior; however, this research extends earlier work to include variant DC sources, which are typical of lead-acid batteries when used in system PV. This Study also investigates methods to minimize the total harmonic distortion of the synthesized multilevel waveform and to help balance the battery voltage. The harmonic elimination method was used to eliminate selected lower dominant harmonics resulting from the inverter switching action.</p>
23	<p>Elhadj Bounadja, Mohand Oulhadj Mahmoudi, Rachid Taleb and Zinelaabidine Boudjema. A New Adjustable Gains for Second Order Sliding Mode Control of Saturated Doubly-Fed Induction Generator based Wind Turbine (details, )</p> <p>Abstract. Doubly-fed induction generator (DFIG) has been widely used in the variable-speed wind energy conversion system. This paper is carried out to reach two main objectives. Firstly, in order to introduce some accuracy for the calculation of Doubly-Fed Induction Generator (DFIG) performances, during dynamic state, an accurate model considering magnetic saturation effect is developed. The second objective is to achieve a robust control of DFIG based wind turbine. For that, a second order sliding mode control scheme using adjustable-gains (AG-SOSMC) is</p>

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	<p>applied to the DFIG rotor side converter. Conventionally, the second order sliding mode controller (SOSMC) is based on a super-twisting algorithm, with constant gains that must be precisely determined. In the proposed control, the controller gains are adjusted as a function of the error absolute value of the variable to be controlled. Finally, simulated results show, accurate dynamic performances, faster transient responses and more robust control are achieved for different operating conditions.</p>
24	<p>Houria Small and Rezak Alkama. Optimum location of a wind farm (details, )</p> <p>Abstract. Depending on the power system condition in terms of voltage quality and wind at some buses, the significantly increase of the wind power may cause an increase in network losses if the location of this power plant is not properly determined. The aim of this work is to determine the best location of the wind power plant to reduce network losses. It examines the network behavior through several simulations for different locations. Special attention will be paid to the active power losses. The simulations were performed on a 16 bus system using MATLAB software. The active power losses for each location of the wind generator are determined by Newton-Raphson iteration.</p>
25	<p>Mabrouk Guestal and Mahfoud Kadja. Study of heat transfer by natural convection of a nanofluid in a solar water-heater enclosure (details, )</p> <p>Abstract. We numerically studied the natural convection of a water-copper nanofluid in a solar water heater enclosure in which heating occurs through a solar collector wall at hot constant temperature T_c. This solar collector is connected to a solar thermal storage tank of rectangular form, with the left vertical wall being maintained at constant cold temperature T_f. The unheated parts of the enclosure were considered adiabatic. For the purpose of analyzing the effect of the use of a nanofluid on heat transfer by natural convection, the volume fraction of the particles is varied in the range of 0 to 0.25. The permanent forms of the Navier–Stokes equations in two dimensions and the conservation equations of mass and energy were solved by the finite volume method. The SIMPLE algorithm is used for pressure-velocity coupling. The Rayleigh number Ra was varied in the range 103–106. The streamlines and the isotherms and the variation of the average Nusselt number at the heated wall are shown for various combinations of the Rayleigh number Ra and different values of the volume fraction of the nanoparticles.</p>
26	<p>Messaoud Sandali and Abdelghani Boubekri. A simulation study of a solar collector using phase change materials for air heating application needs (details, )</p> <p>Abstract. This work presents a contribution, by numerical simulation means, to improve thermal performance of plan solar collectors, and to increase their daily operation length. The present study focused on the numerical simulation of a solar collector with integration of a flat layer of phase change material in the aim to store thermal energy by latent heat. Several calculations were conducted, using the finite volume method with a two-dimensional unsteady model implemented in the Fluent CFD software. Obtained results showed that the integration of 1cm of PCM layer below the absorber plate increases the collector daily operating length with 2 hours</p>

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	and improves the outlet temperature with a value of 10°C after sunset. The PCM with melting temperature of 345K gave the best temperature at the collector outlet.
27	<p>Mona Abdelwaly, Hesham El-Batsh and Magdy Bassily. Numerical Study for the Flow Field and Power Augmentation in a Horizontal Axis Wind Turbine (details,  1)</p> <p>Abstract. The flow field around a horizontal –axis wind turbine is analyzed numerically by solving the flow governing equations namely Reynolds’s Averaged Navier-Stokes (RANS). The effect of wind velocity on the flow field and on the wall static pressure coefficient was examined. The numerical results were compared to the available experimental measurements from the open literature in order to verify model predictions which showed reasonable agreement. Then, the numerical model was used to investigate the effect of wind turbine shroud on the flow field and on the generated power from the wind turbine. Parametric study was performed to investigate the effect of different shroud geometries on the flow and on the velocity at wind turbine rotor. The flow field around wind turbine rotor was calculated for the proper geometry of the shroud and the developed torque was obtained and consequently the generated power. The performance of the shrouded wind turbine was compared to that of the un-shrouded wind turbine and it was found that a considerable increase in the generated power was obtained using the shroud.</p>
28	<p>Abdulla Rahil, Rupert Gammon and Neil Brown. Dispatchable Hydrogen Production at the Forecourt for Electricity Grid Balancing (details,  1)</p> <p>Abstract. The rapid growth of renewable energy (RE) generation and its integration into electricity grids has been motivated by environmental issues and the depletion of fossil fuels. For the same reasons, an alternative to hydrocarbon fuels is needed for vehicles; hence the anticipated uptake of electric and fuel cell vehicles. High penetrations of RE generators with variable and intermittent output threaten to destabilise electricity networks by reducing the ability to balance electricity supply and demand. This can be greatly mitigated by the use of energy storage and demand-side response (DSR) techniques. Hydrogen production by electrolysis is a promising option for providing DSR as well as an emission-free vehicle fuel. Tariff structures can be used to incentivise the operating of electrolyzers as controllable (dispatchable) loads, for example, only outside peak demand periods, which provide DSR services while potentially reducing the cost of the hydrogen. This paper compares the cost of hydrogen production by electrolysis at garage forecourts under both dispatchable and continuous operation, while ensuring no interruption of fuel supply to fuel cell vehicles. An optimisation algorithm is applied to investigate a hydrogen refuelling station in both dispatchable and continuous operation. Three scenarios are tested to see whether a reduced off-peak electricity price could lower the cost of electrolytic hydrogen. These scenarios are: 1) “Standard Continuous”, where the electrolyser is operated continuously on a standard all-day tariff of 12p/kWh; 2) “Off-peak Only”, where it runs only during off-peak periods in a 2-tier tariff system at the lower price of 5p/kWh; and 3) “2-Tier Continuous”, operating continuously and paying a low tariff at off-peak times and a high tariff at other times. This study uses the Libyan coastal city of Derna as a case study, which has a high potential for the wind and solar power generation. Hourly wind speed, solar radiation, electricity demand and fuel consumption data from this location was used.</p>

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30	<p>Mohamed Nabil Metwally, Hamza Ghulman and Mohamedwasela. Al-Hazmi. STUDY ON THE BENEFITS OF USING THE DATE PALM TREES RESIDUALS IN SAUDI ARABIA FOR DEVELOPMENT OF THE NON-TRADITIONAL (details,  1)</p> <p>Abstract. The average world consumption of wood is about 22million tones/year (Faostat,2013), representing about 50% of the total world raw materials, which represents great challenge to find out alternative sources, and the agricultural residues can share strongly in this field. Important interest was paid to the palm trees residues, such as the “date palm leaves midrib” (DPLM), leaflets, coir and spadix stems, as DPLM after drying, which can be used as an industrial substitute of raw wooden materials particularly for the manufacture of particle boards. The Kingdom of Saudi-Arabia has the date palm trees as the third place in the world after Iran and Iraq, while Islamic and Arabic countries represent more than 92% of the world date palms. Local date palms increased from 17.5 million in 1995 to about 32 million in 2014, which may save about 15% of KSA wood imports (2.5 million tons costing about 5730 SR millions, saving about SR million 855/year according to 2014 prices), with 10 pruned &dried DPLMs /tree/year, if it is used only for particle board manufacture. The study includes a survey of the KSA wood imports; the dominant species of palms and their numbers, meteorological conditions, evaluation of DPLM drying rate in open air under the effect of solar radiation, achieving final moisture content of 8-12% in about 4 weeks. Also measurements of the mechanical properties of the dried Saudi DPLM samples approved the excellent mechanical properties as well as Beech and Spruce woods.</p>
31	<p>Sami Lallahem and Azzedine Hani. ARTIFICIAL NEURAL NETWORKS FOR DEFINING THE WATER QUALITY DETERMINANTS OF GROUNDWATER ABSTRACTION IN COASTAL AQUIFER (details,  1)</p> <p>Abstract. Water sustainability in the in the lower Seybouse River basin, eastern Algeria, must recognize the importance of water quantity and quality integration. So, there is a need for a better knowledge and understanding of the water quality determinants of groundwater abstraction to meet the municipal and agricultural uses. In this paper, the artificial neural network (ANN) models were used to model and predict the relationship between groundwater abstraction and water quality determinants in the lower Seybouse River basin. The study area chosen is the lower Seybouse River basin and real data were collected from forty five wells for reference year 2006. Results indicate that the feed-forward multilayer perceptron models with back-propagation are useful tools to define and prioritize the important water quality parameters of groundwater abstraction and use. The model evaluation shows that the correlation coefficients are more than 95% for training, verification and testing data. The model aims to link the water quantity and quality with the objective to strengthen the Integrated Water Resources Management approach. It assists water planners and managers to better assess the water quality parameters and progress towards the provision of appropriate quantities of water of suitable quality.</p>
32	<p>Hocine Guentri, Fatiha Lakdja, Fatima Zohra Gherbi and Tayeb Allaoui. The impact Of Renewable Energies and HVDC in a Real Network (details,  1)</p> <p>Abstract. This paper investigates the consequences of integration of renewable energies (solar and wind power) and High Voltage Direct Current (HVDC) on the voltage improvement and the reduction of the active losses, using real network. We</p>

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	<p>must carefully choose the ideal location of these devices, what the site is related to the internal conditions of the electric network and the climatic conditions of the area of this network. The southwest-Algerian network (2012) is selected for study and have been simulated in MATLAB based PSAT toolbox. The simulation results show clearly the effect of renewable energies and HVDC on the power quality of electric power system.</p>
33	<p>Chaib Hachem. Study thermo-mechanical Brick reinforced by Fibers Local Plant. (details, )</p> <p>Abstract. Algeria is located in an area with high solar potentiality, and presents nearly 90 % of arid and semi-arid lands, of this fact it is important to look at the current situation of Saharan cities. The objective in the context of this work is the achievement of a level of thermal comfort with a lower energy consumption and a mechanical resistance acceptable with a reduced cost. For this, we have try handmade bricks with good thermal characteristics and mecanical basis of three local materials: namely the clay of BaldetÂmer the sand dune of Sidi Khouiled and fibers of date palm.</p>
34	<p>Sara Elsayed Abd Elhafez, Essam Mohamed Abo-Zahhad, Ahmed Hassan Elshazly and Marwa Farouk El-Kady. Experimental Investigate of Heat Transfer for Graphene/Water Nanofluid in Micro Heat Exchanger (details, )</p> <p>Abstract. In this investigation, the heat transfer characteristics of graphene/water nanofluid were studied in a micro heat exchanger. The micro heat exchanger (MHE) performance was also examined. The test setup was worked out in the laminar regime with Reynolds number varying between 100 and 400. Graphene/water nanofluid was prepared at three different weight fractions of 0.025 wt.%, 0.05 wt.% and 0.1 wt.% using ultrasonic power. The stability of prepared nanofluid was monitored using Zeta potential. The influence of mass flow rate, inlet temperatures and weight fraction on the overall heat transfer coefficient and logarithmic mean temperature (LMTD) were examined. The results showed considerable enhancement of convective heat transfer and the overall heat transfer coefficient of graphene/water nanofluid as the weight fraction of graphene was increased. A maximum enhancement in convective overall heat transfer coefficient was reached to 150% at Re 100 using 0.1wt%. Graphene nanoparticles. The effectiveness of heat exchanger was enhanced by increasing weight fraction of graphene nanoparticle. The experimental results showed that 0.1 wt% graphene/water nanofluid has a higher pressure drop, and pumping power when compared with 0.5 wt% and 0.025 wt% at MHE.</p>
35	<p>Amina Benabderrahmane, Abdelylah Benazza, Samir Laouedj and Miloud Aminallah. Heat Transfer performance for Turbulent Flow Through a Tube Using Baffles. (details, )</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 those for</p>

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	smooth pipe. The emplacement and the distance between two consecutive baffles have a non-negligible effect on heat transfer characteristics; the results demonstrate that the temperature gradient reduces with the inclusion of inserts.
36	<p>Essam Mohamed, Ahmed El-Shazly and Marwa Elkady. Experimental study of pressure drops across Microtube using Graphene and Magnetic Graphene Nanofluid (details,  1)</p> <p>Abstract. Co-precipitation method has been used for magnetic graphene nanocomposite (MGNCs) fabrication. Various characterization procedures have been used to compare the physical and chemical properties graphene nanoplatelets (GNPs) with the synthetic MGNCs. The crystal and chemical structures of GNPs before and after magnetic fixation have been identified using X-Ray diffraction and Fourier Transformed Infrared spectroscopy respectively. Morphology structure of magnetic composite has been indicated by using Transmission Electron Microscope (TEM). The Vibrating sample magnetometer (VSM) has confirmed the paramagnetic properties of the prepared composite that represented at its hysteresis curve. GNPs /water and MGNCs/water nanofluid have been prepared. The nanofluid performance of magnetic graphene composite has been compared with its corresponding graphene in micro tubes at laminar flow region fully developed. The magnetic composite nanofluid has had slight pressure drop and pumping power decrement compared with its corresponding graphene nanofluid. This increment at the magnetic nanofluid may be further improved through the utilizing external magnetic field to control the fluid flow.</p>
37	<p>Boumediene Touati, Nordine Kerroumi and Joseph Virgone. Flat plate solar air heater with latent heat storage (details,  1)</p> <p>Abstract. Our work contains two parts, first is an experimental study of the solar air heater with a simple flow and forced convection, which it is used in many engineering's sectors as solar drying, space heating ... etc. The second part is a numerical study with ansys fluent 15 of the storage of part of this solar thermal energy produced, with latent heat by using phase change materials (PCM). In the experimental parts, we realized and tested our solar air heater in Research unit in Renewable energies in Saharan Medium (URER.MS) ADRAR, locate in southwest Algeria. Where we measured the solar radiation, ambient temperature, the air flow, the temperature of the absorber, glasses and the outlet temperature of the solar air heater from the Sunrise to the sunset. In the second part, we added a PCM at outlet part of the solar air heater. This PCM store a part of the energy produced in the day to be used in peak period at evening by using the latent heat where the PCMs present a grateful storage system. A numerical study of the fusion or also named the charging of the PCM using ANSYS Fluent 15, this code use the method of enthalpies to solve the fusion and solidification formulations. Furthermore, to improve the conjugate heat transfer between the heat transfer fluid (Air heated in solar plat air heater) and the PCM, we simulate the effect of adding fins to our geometry. Also, four user define are write in C code to describe the thermophysical propriety of the PCM, and the inlet temperature of our geometry wich is the temperature at the outflow of the solar heater.</p>
38	<p>Atef Ahriz, Nouredine Zemmouri and Soufiane Fezzai. The Outdoor Thermal Comfort: Theory and Guidelines (details,  1)</p>

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	<p>Abstract. The outdoor thermal comfort is an important field of research in sustainable urban design studies, assessing it is too complex, difficult and don't depend only on simple climatic parameters as: air temperature, relative humidity and wind velocity. Because the human body has a great sensitivity to several external climatic elements that have a direct and a significant impact on it. This paper gives a holistic view on the outdoor thermal comfort, presented in three parts: the first one is a theoretical review where several theories are discussed, in the second part we present different mathematical models and physical methods to predict it and assessing it. Finally, guidelines are listed for helping sustainable urban designers to ensure the outdoor thermal comfort.</p>
39	<p>Rahmani Khadidja and Bouaziz Nahla. Application of an approach based on indicators to improve the comfort of the urban environment and energy mastery of their entities: Suitable for humid climate. (details,  1)</p> <p>Abstract. The finding of climate change and the economic crisis that we short, is the origin of the emergence of many problems currently posed, touching the field of energy and the environment directly or indirectly, or urbanized space is formed the heart, and is considered the key factor. In this research, it has leased to the urbanized area very special attention, due to the opportunities we can invest to maintain and attenuate this situation who is disastrous and worried, especially face the challenges of sustainable development. To the do, Architects planners and engineers (energy companies), were forced to work together to develop a method based on indicators to improve the quality of the urban environment (thermo comfort ventilation), correlated with a reduction in energy demand of the entities that make up this environment. To test the feasibility and validate the method developed in the present work, we performed a series of simulations using Pleiades software, Ecotect and Fluent. We arrived in this study to evaluate the impact of using energy indicators in planning on the plan economic and ecological, in this way we can prove that thoughtful urban design can contribute significantly to the preservation of the environment and reducing energy consumption.</p>
40	<p>Zakaria Sari Hassoun, Khaled Aliane and Imane Hiba Berrezoug. STUDY OF EVOLUTION IN TEMPERATURES IN FLAT PLATE SOLAR COLLECTOR(details,  1)</p> <p>Abstract. This work deals with the experimental study of the changing temperatures of the various components of a flat plate solar collector for producing hot air. To do this, it has been the design of this solar collector equipped with thermocouples at the glazing, of the air gap existing within the solar collector and at the absorber. The temperature of the ambient air and that of the output of the solar collector is also measured. Several comparisons between the different temperatures were performed in order to, subsequently, analyzed the changes that can occur in these temperatures. The series of measures were taken during the day of Thursday, April 14, 2016. Starting from a ambient air temperature around 20 ° C (temperature of the air inlet), the temperature reached 120 ° C at the absorber and 95 ° C at the outlet of the solar collector .</p>
41	<p>Samira Khadri, Abd El Aziz Laraba and Nadjib Haied. Physico-chemical composition of urban wet weather discharges in Seybous watershed (north eastern Algeria) (details,  1)</p>

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	<p>Abstract. Seybous Watershed is one of the largest basins in Algeria. It is characterized by a large urban and industrial activity presented on both banks of the river and tributaries Seybous. It daily receives discharged without treatment This work provides an overview of the quality of urban wet weather discharges; this study is based on several morphological parameters Hydrometeorological basin. During the year 2012, two samples were performed (in August and September). These have worn on urban waste and the waters of Seybous Wadi The analysis results indicate that urban waste are characterized by high pollutant load varies with the rain and the influence of these releases is visually along the rivers and waters of the different stations are between the classes of poor quality very bad.</p>
42	<p>Aliane Khaled and Sari Hassoun Zakaria. Dynamic study of the flow and influence of the artificial roughness in a flat plate solar collector (details, )</p> <p>Abstract. In this paper, we introduce a new way to improve the performance of the flat plate solar collector: in addition to the introduction of the baffles was inserted an artificial roughness circular geometry at the insulation. A comparative study between two types of flat plate solar collector (with and without roughness) allows us to draw some important conclusions on improving the performance of solar air collectors for this type of roughness mentioned above. The governing equations are solved by the finite volume method based on the Fluent code. Turbulence is modeled from the K-ϵ model. The simulation has shown that in the case of the used circular roughness, the speeds are very important compared to the case without roughness especially in the region near the lower wall which greatly favors the exchange of heat and increased performance.</p>
43	<p>Georges Descombes and Radu Chiriac. Investigation on the mixture formation, combustion characteristics and performance of a Diesel engine fueled with Diesel , Biodiesel B20 and hydrogen addition. (details, )</p> <p>Abstract. An experimental and numerical study was performed to investigate the impact of Biodiesel B20 (blends 20% Rapeseed methyl ester with 80 % Diesel volumetric fraction) and different energetic fractions of hydrogen content between (0 to 5%) on the mixture formation, combustion characteristic, engine performance and pollutant emissions formation of a Diesel engine. Experiments were carried out on a tractor engine, four-cylinder, four-stroke, 50 kW/2400rpm, direct injection compression ignition engine. Simulations were conducted using the AVL codes (HYSIM and BOOST 2013). Simulation results were validated against experimental result, by comparing the in-line pressure, needle lift, in-cylinder pressure curves for Biodiesel B20 and pure Diesel fuels at 1400 rpm and 2400 rpm, respectively, under full load operating conditions. Good agreement with a maximum of 2.5 % deviation on the peak cylinder pressure was obtained. The results revealed that overall operation conditions Biodiesel B20 provides lower engine performance, efficiency, and engine emissions except the NOx which are slightly increased due to the enhanced combustion. The Biodiesel B20 has shorter ignition delay. By hydrogen addition to B20 with aspiration of the intake air flow the CO emissions, smoke, and total unburned hydrocarbon emissions THC decreased, while the NOx kept the same increasing trend for 1400rpm and has not quite apparent trend for 2400rpm. The enrichment of Diesel and B20 fuels with hydrogen has no effect on</p>

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	ignition delay due to the fact that autoignition temperature of hydrogen is higher relative to that of initial fuels.
45	<p>Abdelmajid Timoumi, Mohamed Khalil Al Turkestani and Bassem Jamoussi. Investigations of palladium phtalocyanine thin films deposited on different glass substrates for solar cells (details, )</p> <p>Abstract. This work focuses on fabrication, characterization and understanding some physical properties of palladium phtalocyanine (Pd-PCs) thin films. Pd-PCs have been synthesized and physically deposited on glass, ITO/glass and FTO/glass substrates by vacuum thermal evaporation. Different characterization methods have been employed: optical properties of the films were investigated from transmittance measurements, structural properties by X-Ray Diffraction Analysis and surface morphology using Scanning Electron Microscopy (SEM) analysis. The optical characteristics of the deposited films were obtained from the analysis of the transmission spectral data over the wavelength range of 200-1800 nm. The optical absorption data yielded a direct band gap energy of 4.19eV for Pd-PC/glass sample, 4.05eV and 3.87eV for the Pd-PC/ITO/glass and Pd-PC/FTO/glass respectively. The XRD patterns reveal that the as-deposited Pd-PLC and Pd-PC/FTO/glass films have amorphous in nature, while films deposited on ITO/glass are polycrystalline. The SEM studies show that the films are uniform, homogeneous and free from crystal defects and voids. The grains in the thin films are similar in size and densely packed. The experimental results reveal that the substrate play significant role in the structural, optical and morphological properties of deposited In2S3 thin films and may be used for organic solar cells applications.</p>
46	<p>Akram Jabur. Improving Activation Energy and Electrical Conductivity of Electrospun Nylon Films by Polyaniline Addition (details, )</p> <p>Abstract. : Nylon 6 with (0, 1, 2, 3, 4, 5 and 6 wt. %) polyaniline films conductive polymers were prepared by electrospinning technique. Polyaniline was increasing the electrical conductivity of the nylon 6 solutions with increasing the weight percent of polyaniline from (3.8*10-3 S/cm) for pure nylon (10.2*10 -3 S/cm) for ((Nylon 6) / (1% polyaniline)). The electrospinning process increase thew electrical conductivity from bulk pure (Nylon 6) is (10-14 S/cm) to (10.2*10-3 S/cm) for pure electrospin (Nylon 6). The viscosity and the surface tension decrease with increasing polyaniline (wet. %) in the solution. Prepared films morphology test by (SEM) and the average fibers diameters measure statically was (74 nm) for (Nylon / 4 wt. % Polyaniline film) while (180 nm) for pure (Nylon). The nanofibers films show enhancing the electrical conductivity by increase Polyaniline concentration, from (2.627*10-10 S/cm) for pure (Nylon) film to (3.44*10-7 S/cm) for (6 wt. %) Polyaniline. The activation energy decreased with increasing polyaniline concentration, the activation energy was (0.135, 0.0899, 0.0864, 0.0811, 0.078, 0.075 and 0.07299 eV) for (Pure Nylon, Nylon / 1, 2, 3, 4, 5 and 6 wt. % Polyanilines) films sequentially . The activation energy, decreased compared with an activation energy for (Pure Nylon 6) film while the electrical conductivity increase with increasing polyanline additive .</p>
47	<p>Imtithal Sheet, Ahmad Kabbani and Hanafy Holail. Adsorptive Kinetic Mechanism of Heavy Metal Cations on the Surface of Graphite Oxide and its SiO2 Composite (details, )</p>

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	<p>Abstract. Nanomaterials have gained great attention because of their novel size- and shape-dependent properties, large specific surface area and high reaction activity. Moreover, nanomaterials have a wide range of applications, as in the technological and environmental challenges in the areas of solar energy conversion, catalysis, medicine, and water treatments. In the present study, nanostructured graphite oxide, silica/graphite oxide composites and silica nanoparticles were used for the removal of the heavy metal ions from aqueous solutions by a batch adsorption method and the adsorptive kinetic mechanism of heavy metal cations on the surface of graphite oxide and its SiO₂ composite was evaluated. The experimental results revealed a strong adsorption of the metal cations on the surface of graphite oxide, this is reflected in the shifts in wave numbers after adsorption with nanostructured graphite oxide and the big shift in wave numbers (Δ) for nickel ions reflects chemisorption type of adsorption. This is confirmed by the coherence between Δ, removal percentage and crystal field stabilization energy (CFSE). Silica/ GO (2:3) composite showed the greatest removal percentage at different concentrations compared to pure graphite oxide and silica nanoparticles. The higher removal percentage of nickel ions by silica /GO composite (2:3) was observed at 180 min contact time and basic pH. The kinetic studies showed that silica/ GO (2:3) composite had rapid adsorption rate and efficiency and it was found to follow first order rate expression or an exponential decay of the metal cations from water study.</p>
48	<p>Slimane Kalloum, Mohammed Djaafri, Mostapha Khelafi and Fethya Salem. The use of anaerobic digestion process for treating sludge from wastewater treatment plants (details, )</p> <p>Abstract. The urban stations of treatment have for role to eliminate the pollution contained in the domestic wastewater, before their dismissal in the nature. When wastewater is purified, the initial pollution is concentrated and stocked in the sludge descended of the various stages of treatment. This sludge can be consider like a recyclable waste and must be eliminate in laws respect. This study involves the treatment of the sludge issued from wastewater purification plants of Adrar city (southwest of Algeria) by anaerobic digestion. During 33 days of reaction in a batch bioreactor with a capacity of 1 liter. We obtained an abatement rate of chemical oxygen demand (COD), biological oxygen demand (BOD) and total solid (TS) of 88.90 and 81%, respectively followed by a total destruction of the pathogenic flora. Moreover, the reaction has reduced ammonium and Kjeldahl nitrogen by 72 and 80%, respectively.</p>
49	<p>Abdelmajid Timoumi, Mohammed Khalil Al Turkestani, Salah Nouaymen Alamri, Hatem Alamri, Jalel Ouerfelli and Bassem Jamoussi. Synthesis and characterization of Palladium (II) Phtalocyanine thin films and its derivatives using thermal evaporation technique (details, )</p> <p>Abstract. This paper has targeted to Synthesis a New rare earth Phthalocyanine Derivatives thin films. Palladium(II) Phtalocyanine (PdPc), Palladium (II) tetranitrophthalocyanine (O-PdPc) and α-polymorphic form (α-PdPc) were synthesized and deposited on glass substrates using thermal evaporation technique. The surface morphology of the thin films was investigated by atomic force microscopy and showed that polymers are growing in aggregation rows. The B band absorption occurred in the range 310-350 nm. The peaks observed in the</p>

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	<p>Q-band region in the range 684-715 nm are responsible for the observed green color of this complex. These transitions may be assigned to those of the π / π^*. The UV-VIS spectra of palladium (II) phtalocyanine in solution display a narrow Q-band, but the splitting or two bands observed in this complex indicates the presence of both monomeric and dimeric forms of this complex in solution. Analysis of the optical absorption data of the deposited films revealed a direct band gap energy of 3.68eV, 3.10eV and 3.54eV for PdPc, O-PdPc and α-PdPc, respectively.</p>
50	<p>Ramazan Atilgan and Onder Turan. Exergy-aided environmental analysis of a high bypass aero-engine (details,  1)</p> <p>Abstract. Exergetic analysis are widely used to evaluate efficiency and performance of many different energy conversion systems from the point of economy and environment. Exergo-environmental analysis is the unique combination of exergy analysis and life cycle assessment. Transportation, especially air transportation, is one of the main contributors to the air pollution, so it is very important to find out mitigation ways of negative environmental impact of aircrafts. In this study, an aircraft turbofan engine is investigated. The highest environmental cost rate due to exergy destruction is found at CC outlet with the value of 307,46 mPts/s, while the lowest rate is found at LPC inlet with the value of 6,59 mPts/s. The highest component related environmental cost rate is found at HPT (6,13 mPts/s) and the lowest rate is found at LPC (2,71 mPts/s). Results showed that combustion chamber has the largest negative environmental impact rate.</p>
51	<p>Samia Bouzouaid and Abdelouahed Kriker. Nonlinear Analysis of Concrete Beams Strengthened by Date Palm fibers (details,  1)</p> <p>Abstract. The behaviour of concrete beams strengthened with date palm fibers was studied by Nonlinear Finite Element Analysis using ANSYS software. Five beams that were experimentally tested in a previous research were considered. The results obtained from the ANSYS finite element analysis are compared with the experimental data for the five beams with different amounts of fibres, ranging from 0.2% to 0.5% by a step equal to 0.1% and with a fibre length of 0.04 m. The results obtained by FEA showed good agreement with those obtained by the experimental program. This research demonstrates the ability of FEA in predicting the behaviour of beams strengthened with Date Palm fibers. It will help researchers in studying beams with different configurations without the need to go through the lengthy experimental testing programs.</p>
52	<p>Yosr Allouche, Szabolcs Varga, Chiheb Bouden and Armando Oliveira. A Trnsys Simulation Of A Solar-Driven Ejector Air Conditioning System With An Integrated PCM Cold Storage (details,  1)</p> <p>Abstract. In this paper, the development of a dynamic model using the TRaNsient System Simulation program (TRNSYS) for the performance assessment of a solar-driven air conditioning system with PCM cold storage is presented. The simulations were carried out under the condition of satisfying the cooling needs of a 140 m³ space during the summer season in Tunis, Tunisia. The developed model is composed of three main subsystems including: solar loop, ejector cycle and PCM storage tank, the latter connected to the air conditioned space. The influence of applying cold storage was investigated. The evolution of the indoor temperature (Tin) was estimated for a system with solar cooling but without PCM cold storage.</p>

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	<p>The results indicated that the comfort temperature was exceeded in more than 26% of the time. Applying cold storage, it was found that the system COP increased. An optimal storage volume of 1000 l was identified resulting in the highest cooling COP and highest indoor comfort (95% of the time with a room temperature below 26°C). The maximum COP and solar thermal ratio (STR) were 0.193 and 0.097.</p>
53	<p>Zoubida Senisna and Med Tahar Bentebba. Contribution of the characteristics rheological of the pavement structure with the addition of brick waste (details,  ) Abstract. The construction and demolition waste at end of cycle are often A threat for the environment due THEIR congestion and biodegradability, The presented research work aims to develop these wastes such as waste brick pavements structure. He refers to the behavior of modified asphalt (bituminous GRAVE) following the addition of waste from the grinding of yellow brick for the construction of buildings. The objective of the experiment is to evaluate and compare the physical and mechanical performance roadway structure (modified bituminous Grave 0/20 (BG)) By replacing natural sand partly mix (0%, 25%, 50%, 75%, 100% or completely by sand brick waste) and determine the optimal composition. And mechanical and rheological performance giving the best results replacement of the results show that the use of sand Brick waste leads to a reduction in the physic-mechanical properties of GB 0/20.</p>
54	<p>Mohamed Mani, Abdelouahed Kriker and Allaoua Belferrag. Compressive strength sand dunes reinforced concrete (details,  ) Abstract. A lot of areas of south Algeria suffer of problem of the accumulation of sand on constructions. In fact, the phenomenon of sand encroachment and the expensive cost to remove this sand cause many technical problems. Besides these areas and other regions in Algeria suffer of the problem of unavailability of natural sand suitable for building, then the use sand dunes offer an alternative solution in construction. In the context of this idea, many business and research which confirm its entirety the possibility of using sand dunes as one of the ingredients in the creation of concrete completed but only particleboard correction and it boosted his mineral fiber in order to reduce the phenomenon of deflation until the sand is valid for the manufacture of concrete. This work aims to contribute to the correction of granular sand dunes and reduction of shrinkage properties of concrete sand dunes by reinforced by mineral fiber.</p>
55	<p>Giuseppe Donnarumma and Pierfrancesco Fiore. A Multi-Criteria Model for the Comparison of Building Envelope Energy Retrofits (details,  ) Abstract. In light of the current EU guidelines in the energy sector, improving building envelope performance cannot be separated from satisfying the environmental sustainability requirements and reducing the costs associated with the life cycle. The identification of energy retrofit technical solutions has therefore become a problem of choice between several alternatives and requires adequate decision support tools. Starting from this need, a model based on multi-criteria AHP analysis and the use of nine indicators is proposed. The model is then applied, as an example, to the case-study of the energy redevelopment of a former industrial factory, with a functional conversion of the abandoned building.</p>

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56	<p>Mohammed Boucherba, Abdelouahed Kriker and Nabil Kebaili. The Valorization of the Plastic Waste to the Rheological Characteristics of Bituminous Mixtures (details, )</p> <p>Abstract. The valorization of materials used at the end of the cycle currently constitutes one of the major challenges for the state for the safeguarding of the environment. Indeed, plastic waste from their obstruction and weak biodegradability often constitutes a threat for health, nature and the environment. The present study treats a mining method and valorization of these wastes in the road, where this waste incorporated in the pure bitumen of asphalt concretes using the Dry process. The vital objective of this work is to see their impact on the mechanical behavior of these concretes using the Marshall Test and NAT.</p>
57	<p>Akchiche Hamida and Kriker Abdelouahed. SHRINKAGE MODELING OF CONCRETE REINFORCED BY PALM FIBRES INHOT DRY ENVIRONMENTS (details, )</p> <p>Abstract. The cement materials, such as concrete and conventional mortar present very little resistance to traction and cracking. The hot, dry environments, such as the Saharan regions of Algeria dry these hydraulic materials which induces large withdrawals on materials and cracks in structures. Indeed, concrete structures in these regions is very fragile, strengthening of these materials by fibers can provide technical solutions for improving the mechanical performance. The aim of this studying is to reduce the shrinkage of conventional concrete with its reinforcement with date palm fibers. In fact, Algeria has an extraordinary resources in plant fibers (from Palm, , Abaca, Hemp, ...) but without valorization in practical areas, among others, in building materials. Then, to modeling the shrinkage behavior of concrete which contained palm fibers. In the literature several models for still fiber concrete were founded but few are offers for natural fiber concretes. To do so, an still fiber concretes model of YOUNG - CHERN was used. According to the results, we note the possibility for reduction of shrinkage with palm fibers. A good ability of molding of shrinkage with model of YOUNG - CHERN Modified between the model and experimental data was obtained.</p>
58	<p>Sandeep Pandey. PLANT-MICROBE INTERACTIONS MODEL: AN EXAMPLE OF DYNAMIC EQUILIBRIUM IN COMPLEX ECOSYSTEM (details, )</p> <p>Abstract. The symbiotic relationships between bacteria and eukaryotes and arbuscular mycorrhizae, an association with fungi that enable plants to acquire nutrients through their roots, are one of the best examples of plant-microbe interactions forming dynamic equilibrium in nature. This relationship is generally considered to have permitted plants to invade land, and many genes that play a key role during this process also influence plant development and affected root growth. The bacteria forms nodules, on the roots of legumes and in return the microbes receive energy in the form of carbon from the plant and convert atmospheric nitrogen to ammonia utilized by the plant. Plant-microbe relationships are established through the exchange of chemical and genetic signals. Legume roots release compounds called Nod factors, which in turn facilitate infection of the root by the bacteria, as well as nodule development. The plants produce chemical signals called strigolactones that increase the branching of fungal hyphae, and thereby increase their contact with arbuscular mycorrhizal fungi. These fungi also release diffusible compounds known as Myc factors, which, when recognized by the plant,</p>

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	<p>activate symbiosis-related genes. Both microbial Nod and Myc factors also appear to have common features, including the ability to promote plant growth. Therefore the ability of mycorrhizal fungi to form associations with nearly all land plants makes them an important model for designing novel plant-microbe interactions. This overview emphasizes on overall biological mechanism of symbiotic, mutualistic and parasitic microbial association and their role in modifying growth in land plants.</p>
59	<p>Fares Belagoune, Djamel Boutaoutaou and Mehdi Bellout. Spatio-temporal analysis of extreme rainfall and Flooding in the semi-arid region of Algeria and its application to the regionalization of flood flow estimates (details, )</p> <p>Abstract. Several studies have claimed that regionalization of watersheds is essential to develop regional flood flow equations. These flood flow equations would be used to estimate flood magnitudes at locations where actual flood data are not available. Multivariate statistical techniques, cluster analysis to achieve a regionalization of the Chemorah River Basin in large watershed "Highland Constantine (07)", Algeria. Although several regionalization methods have been proposed, there is no agreement about the method or methods which are to be used. Hierarchical and non-hierarchical algorithms were applied to five experiments based on the data sets for precipitation and streamflow available from traditional weather stations. In order to validate the results, three indices applicable for both types of algorithms were applied. Experiments showed that better results were achieved when considering several variables than analysing each parameter alone. The k-medoids clustering is very similar to k-means, and the major difference between them is that: while a cluster is represented with its center in the k-means algorithm, it is represented with the object closest to the middle of the cluster in the k-medoids clustering. The characteristics of flood data from this region are tested by noting tests based on simple scaling. The data from the homogeneous regions were found to behave as expected.</p>
60	<p>Seongkon Lee and Gento Mogi. National Hydrogen Technology Competitiveness Analysis with an Integrated Fuzzy AHP and TOPSIS Approaches: In Case of Hydrogen Production and Storage Technologies (details, )</p> <p>Abstract. The demand of fossil fuels, including oil, gas, and coal has been increasing with the rapid development of developing countries such as China and India. U.S., Japan, EU, and Korea have been making efforts to transfer to low carbon and green growth economics for sustainable development. And they also have been measuring to cope with climate change and the depletion of conventional fuels. Advanced nations implemented strategic energy technology development plans to lead the future energy market. Strategic energy technology development is crucial alternative to address the energy issues. This paper analyze the relative competitiveness of hydrogen energy technologies in case of hydrogen production and storage technologies from 2006 to 2010. Hydrogen energy technology is environmentally clean technology comparing with the previous conventional energy technologies and will play a key role to solve the greenhouse gas effect. Leading nations have increasingly focused on hydrogen technology R&D. This research is carried out the relative competitiveness of hydrogen energy technologies employed by an integrated fuzzy analytic hierarchy process (Fuzzy AHP) and The Technique</p>

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	for Order of Preference by Similarity to Ideal Solution (TOPSIS) approaches. We make four criteria, accounting for technological status, R&D budget, R&D human resource, and hydrogen infra. This research can be used as fundamental data for implementing national hydrogen energy R&D planning for energy policy-makers.
61	<p>Fouad Hafsi, Abdelouahed Kriker and Said Abani. Contribution study to the thermal insulation of the builders in the desert regions of exploiting gypsum fiber reinforced palm (details, )</p> <p>Abstract. Algerian Desert areas were characterized by very hot climate in summer and very cold in winter. The most widely used building material in these areas are concrete, mortar cement, which has a bad thermal insulation, causing a significant increase in cooling and heating costs; in order to avoid this problem it become a necessary to replace these materials with a good thermal isolation material and lower production cost. This work is part of the evaluation of local materials by improving their performance in the field of thermal insulation, which is considered a first step in the development of new local materials to be used in the construction field, the material used in this study is the gypsum reinforced with date palm fiber. In fact, Algeria has an extraordinary resources in natural fibers (from Palm, Abaca, Hemp, ...) but without any large valorization in building materials. The aim of this work is then to characterization of those date palm fibers in new building materials approved for use in the construction of buildings in the desert areas. The date palm fibers were added to samples of the gypsum material in the form of cutting layers at different volume fraction, so as to determine the extent of their impact in the improvement of the thermal performance. The results were very satisfactory, reaching improvement rate of 16% for samples gypsum reinforced with single cut fiber form, and 32% of the samples reinforced with fiber in the form of layers.</p>
62	<p>Omar Charrouf, Achour Betka, Hefaidh HadeF, Mebarek Djebabra and Mourad Tiar. Degradation evaluation of PV modules operating under northern Saharan environment in Algeria (details, )</p> <p>Abstract. The degradation of Monoliticristalline-silicone solar PV modules in Biskra, semi-arid climate, at the north of the Algerian Sahara was studied. As first inspection in this region, the electrical parameters of two PV modules A and B fielded during two different periods, ten and five years respectively, are measured under real climatic conditions and their I-V characteristics were fitted. The standardized I-V characteristics was performed using translation method and compared to their initial I-V characteristics at standard test conditions(STC) given by the manufacturer. The main important parameters of the studied PV modules: short circuit- current I_{sh}, open circuit voltage V_{oc} and maximum power P_{max} are evaluated and then compared to the STC parameters to estimate their degradation and degradation rates according to their exposure duration. Moreover, other possible defects are explored by visual inspection method. The results show degradation rates of maximum power nearing 1.7 %/year and 3.6%/year for the ten and five operating years.</p>
63	<p>Linda Hassaine and Abdelhamid Mraoui. Control Strategy based on SPWM Switching Patterns for Grid Connected Photovoltaic Inverter (details, )</p> <p>Abstract. Generally, for lower installation of photovoltaic systems connected to the grid, pulse width modulation (PWM) is a widely used technique for controlling the</p>

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	voltage source inverters injects currents into the grid. The current injected must be sinusoidal with reduced harmonic distortion. In this paper, a digital implementation of a control strategy based on PWM switching patterns for an inverter for photovoltaic system connected to the grid is presented. This strategy synchronise a sinusoidal inverter output current with a grid voltage The digital implementation of the proposed PWM switching pattern when is compared with the conventional one exhibit the advantage: Simplicity, reduction of the memory requirements and power calculation for the control
64	<p>Fares Belagoune, Djamel Boutoutaou and Mehdi Bellout. Modeling Peaks Over A Threshold Using R (Case Wadis Soubella, Algeria) (details, )</p> <p>Abstract. Floods are complex, natural hazards that, to varying degree, affect some parts of the world every year. The objective of this study is to Modeling Peaks Over a Threshold of El-Ham Basin River Using R. The free software environment for statistical computing and graphics has been developed and it is maintained by statistical programmers, with the support of an increasing community of users with many different backgrounds, which allows access to both well-established and experimental techniques. In This work R and some of its packages are presented powerful tools to explore and extract patterns from raw information, to pre-process input data of hydrological models, and post-processing its results. The Generalized Pareto Distribution (GPD) is the limiting distribution of normalized excesses over a threshold, as the threshold approaches the endpoint of the variable. The POT package contains useful tools to perform statistical analysis for peaks over a threshold using the GPD approximation.</p>
65	<p>Moungar Houcine and Azzi Sidahmed. Physicochemical analysis for distilled water produced by a hot-box solar distiller (details, )</p> <p>Abstract. the solar desalination application as it's defined consist to convert solar energy to thermal energy, where it's used to evaporate the brackish water in the solar distiller basin, owing to the temperature gradient, the steam was move out to cold internal glazing surface where it's condense .the proposed work consisted to an experimental study of single basin double slope solar distiller (S.B.D.S) with and without finned flat plate, the comparative study of the coupling of the solar still with domestic solar hot water (D.H.W) systems were established. In this paper, The physic-chemical parameters pH, total dissolved solid TDS, resistivity, salinity and conductivity was measured after and before desalination in July, our objective is studied their influence in the solar distiller production. It's found that the physic-chemical parameters have a significant effect in the solar still production. Technical or chemical solutions have proposed to optimize the solar distiller production.</p>
66	<p>Abdelaziz Logbi, Abdelouahed Kriker and Zoubaida Snisna. Effects of Mineral Additions on Durability and Physico-mechanical Properties of Mortar(details, )</p> <p>Abstract. This paper consists of an experimental study of the effect of some mineral admixtures on the properties of mortar. Blast furnace Slag of El-Hadjar, natural pouzzolan of Beni saf and limestone of Ghardaia, all from Algeria, are crushed in high fineness and incorporated in the cement with different contents (15 %, 20 %, 10%) respectively, in order to perform the physico-mechanical characteristics and durability of the mortar. The mortar with 15% of pouzzolan, or</p>

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	<p>20% of the slag seams to have better mechanic performances in early and long ages than the ordinary one, but 10% of limestone fillers have a positive effect only at a long age . The study of durability has been in tow axes: -the development of the mechanical strength of mortar conserved under the water of free aquifers, -the capillary absorption.</p>
68	<p>Fethya Salem and Slimane Kalloum. Realization and testing of an updraft gasifier: Preliminary Study (details,  1)</p> <p>Abstract. Waste management and the energy supply are two major challenges that human have recorded for millennia. The technologies for recovery of energy from wastes can play a vital role in mitigating the problems. The biomass gasification is one of the principal technologies of heat treatments, which offer the possibility of producing renewable energy called "synthesis gas" consisting essentially of combustible gases such as methane and hydrogen. The aim of our work is the realization and testing of a small up draft gasifier. The woodwork of the commune of Adrar generates an important quantity of sawdust, which is neither treated nor valued, of this fact, therefore we have chosen as the substrate for this study. In addition to the interesting energy characteristics (Low Heat Value LVH =4779.17 kWh/ton) the sawdust does not take part in the increase in the content of atmospheric CO2. The gasification prototype realized during this study allowed a production of a flammable gas in a temperature reached 390°C with a reduction ratio of more than 87% by mass.</p>
69	<p>Bendebane Salima, Djerad Souad and Tifouti Lakhder. The Dissolution Behavior of Lead Oxide in Aqueous Organic Acid Solutions (details,  1)</p> <p>Abstract. Processing industries generate metallic wastes that are not always recycled. Among these wastes lead and its compounds are usually encountered in landfills leading to pollute the environment. In fact, soil may contain organic products and corrosive substances that react with the metal. As a consequence lead is dissolved and soil, surface water and groundwater are polluted. In this study we were interested on the kinetic release lead oxide when contacting two organic acids usually present in the nature which are acetic and tartaric acids. The effect of acid concentration and temperature were investigated. The results have shown that the dissolution of lead oxide in the presence of acetic acid was faster than in tartaric acid. The complexometric character of tartaric acid may be the cause of such behavior.</p>
70	<p>Mebarkia Chafia and Dib Djalel. Ab Initio Study of the Structural and electronic Properties of a new series of quaternary Cu₂XTS₄ (X = Cd ,Zn)(details,  1)</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 Cu₂CdSnS₄(CCdTS) ,Cu₂ZnSnS₄ (CZTS), and Cu₂MgSnS₄(CMTS) looks promising. CZTS, CCdTS, CMTS are a new films absorbers, with good physical properties (band gap energy 1,5 eV. and 1,45. eV and 1,63eV. Respectively),with a large absorption coefficient over 10⁴ cm⁻¹). Indeed, the performance of these cells exceeded 30% in recent years. In this study we present investigations pertaining to structural, and electronic, properties of</p>

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	<p>CZTS, CCdTS and CMTS numerical simulation, we used SCAPS to study the performance of solar cells based on $\text{Cu}_2\text{ZnSnS}_4$, $\text{Cu}_2\text{CdSnS}_4$, $\text{Cu}_2\text{MgSnS}_4$. To find the effect of Decreases E_g 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, CMTS) and of n- ZnO/i-ZnO/n-(CdS, In₂S₃) /p-(CZTS, CCdTS, CMTS) .</p>
71	<p>Mohamed Redha Rezoug and Rachid Chenni. Performance Optimization of a Photovoltaic Chain Conversion by the PWM Control (details, ) Abstract. The interest of the research technique of maximum power point tracking, exposed by this article, lays in the fact of work instantly on the real characteristic of the photovoltaic module. This work is based on instantaneous measurements of its terminals' current & voltage as well as the exploitation of the characteristic "Power - Duty Cycle" to define rapidly the Duty cycle in which power reaches its maximum value. To ensure instantaneous tracking of the point of maximum power, we use "DC/DC Converter" based on "Pulse Wave Modulation's (PWM) Command" controlled by an algorithm implanted in a microcontroller's memory. This algorithm responds to the quick changes in climate (sunlight and temperature). To identify the control parameters "VPV & IPV" at any change in operating conditions, sensors are projected. this algorithm applied to the Duty cycle of the static converter enables the control of power supplied by the photovoltaic generator thanks to oscillatory movement around the MPP. Our article highlights the importance of this technique which lays in its simplicity and performance in changing climatic conditions. This efficiency is confirmed by experimental tests and this technique will improve its predecessors.</p>
72	<p>Joshua Okeniyi, Olugbenga Omotosho, Michael Inyang, Elizabeth Okeniyi, Ikechi Nwaokorie, Emmanuel Adidi, Felicia Owoeye, Kelechukwu Nwakudu, Deborah Akinlabu, Olanrewaju Gabriel, Olugbenga Taiwo and Olufisayo Awotoye. Investigating Inhibition of Microbes Inducing Microbiologically-Influenced-Corrosion by Tectona grandis based Fe-Nanoparticle Material (details, ) Abstract. In this paper, inhibition of microbes inducing microbiologically-influenced-corrosion (MIC) of metals by Tectona grandis based Fe (iron) Nanoparticle material was investigated. For this, extract was obtained from the leaf of Tectona grandis and this was employed as precursor for synthesizing the Fe-nanoparticle material. From this, the synthesized plant extract based nanoparticle material was characterized using scanning electron microscopy and energy dispersive spectroscopy (SEM+EDS) instrument. The developed Fe bio-nanoparticle material was then employed for sensitivity and/or resistance study application against different strains of microbes that are known to induce microbiologically-influenced-corrosion, in metallic materials, and for this, microbial growth inhibition effect was compared with that from a commercial antibiotic employed as control. Results showed that the Tectona grandis based Fe-nanoparticle exhibited good inhibition effects on the growth of many of the MIC inducing microbes investigated. Sensitivity measures of zone of inhibition against the growth of MIC inducing microbial strains either outperformed or compares well with that obtained from the</p>

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	commercial antibiotic control, in the study. These results indicate positive prospect on the suitability of Fe bio-nanoparticle for corrosion inhibition applications for the protection of metals against microbiological corrosion influencing environment.
73	<p>Djelita Belkheir, Nehar Kheira Camellia, Azlaoui Mohamed and Lagha-Bouzid Souaad. SPATIAL AND TEMPORAL ANALYSIS OF THE TRANSPORT OF ORGANIC POLLUTANTS IN RIVERS CASE STUDY OF THE WATERSHED OF THE MOUILLAH RIVERS NORTH-EAST OF THE ALGERIA (details,  1)</p> <p>Abstract. The rivers pollution is a global problem which Algeria is not immune. In this work, we conducted a study on the behavior of pollution in one of the major Algerian watercourse named Oued Mouillah, it crosses two important border cities, Oujda in Morocco and Maghnia in Algeria. The Oued Mouilah receives various industrial, agricultural and urban wastewater discharges from these two cities. At the downstream of the river, at the confluence with the stream of Tafna, the dam at Hammam Boughrara in Algeria is built, with 56 Hm³ of water mobilized. The monitoring the quality of Oued Mouilah water is essential for the protection of this resource stored by the dam, which risk host the pollution released upstream with the problems of contamination and eutrophication. To follow this quality, the levies of water samples for analysis are performed monthly at different fixed and strategic locations upstream and downstream of the dam. On the basis of these analyzes, we conducted a study of the spatial and temporal behavior of organic pollution between 1999 and 2009. At the end, a synthesis summarizes the findings of the spatial and temporal analysis of this kind of pollution.</p>
74	<p>Joshua Okeniyi, Christopher Nwadialo, Folusho Olu-Steven, Samaru Ebinne, Taiwo Coker, Elizabeth Okeniyi, Adebajji Ogbiye, Taiwo Durotoye and Emmanuel Badmus. C3H7NO2S Effect on Concrete Steel-Rebar Corrosion-Inhibition in 0.5 M H2SO4 Simulating Industrial/Microbial Environment (details,  1)</p> <p>Abstract. This paper investigates C3H7NO2S (Cysteine) effect on the inhibition of reinforcing steel corrosion in concrete immersed in 0.5 M H2SO4, for simulating industrial/microbial environment. Different C3H7NO2S concentrations were admixed, in duplicates, in steel-reinforced concrete samples that were partially immersed in the acidic sulphate environment. Electrochemical monitoring techniques of open circuit potential, as per ASTM C876-91 R99, and corrosion rate, by linear polarization resistance, were then employed for studying anticorrosion effect in steel-reinforced concrete samples by the organic hydrocarbon admixture. Analyses of electrochemical test-data followed ASTM G16-95 R04 prescriptions including probability distribution modeling with significant testing by Kolmogorov-Smirnov and student's t-tests statistics. Results established that all datasets of corrosion potential distributed like the Normal, the Gumbel and the Weibull distributions but that only the Weibull model described all the corrosion rate datasets in the study, as per the Kolmogorov-Smirnov test-statistics. Results of the student's t-test showed that differences of corrosion test-data between duplicated samples with the same C3H7NO2S concentrations were not statistically significant. These results indicated that 0.06878 M C3H7NO2S exhibited optimal inhibition efficiency $\eta = 90.52 \pm 1.29\%$ on reinforcing steel corrosion in the concrete samples immersed in 0.5 M H2SO4, simulating industrial/microbial service-environment.</p>

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75	<p>Henaoui Mustapha, Aliane Khaled and Sari-Hassoun Zakaria. Fluid Flow and Heat Transfer in Solar Collector with Baffles (details, )</p> <p>Abstract. This research reports a comparative study of fluid flow in a duct of solar collector with perforated baffles. We present afterwards the mathematical formulation of the problem studied and the numerical solution finite volume method using the commercial computational fluid dynamics software Fluent 6.3. The results are expressed in terms of pressure coefficient, axial velocity, Temperature distribution. The results were validated by comparing the results obtained with the previously investigated experimental data. The effects of different geometrical of baffles were investigated. This study reveals the performance of solar collector by introducing of perforated baffles.</p>
76	<p>Olugbenga Adeshola Omotosho, Joshua Olusegun Okeniyi, Cleophas Akintoye Loto, Abimbola Patricia Idowu Popoola, Ekundayo Oluwademilade Jacob Fademi, Segun Isaac Oladipupo, Ayomide Samuel Alabi, Omokolade Bamidele Ajibola and Alex Emelieze. C6H5NH2 Effect on the Corrosion Inhibition of Aluminium in 0.5 M HCl (details, )</p> <p>Abstract. In this paper, C6H6NH2 (aniline) effect on the corrosion of aluminium in 0.5 M (i.e. mol/L) HCl medium was studied using gravimetric method by weight loss measurements and electrochemical technique of corrosion potential and potentiodynamic polarization by cyclic voltamery (CV) instrumentation. By these techniques, corrosion rate obtained from aluminium specimens, in 0.5 HCl test-solution having different concentrations of the hydrogen-containing C6H6NH2 chemical, were requisitely analysed. Results showed that the potentiodynamic corrosion rate excellently correlated ($R = 98.94\%$, Nash-Sutcliffe efficiency = 97.89% and ANOVA p-value = 0.0314) with function of the gravimetric corrosion rate and C6H5NH2 concentration. Both experimental and correlated prediction models identified 0.043 mol/L C6H5NH2 with optimal inhibition efficiency performance $\eta = 84.11\%$ by the experimental or $\eta = 81.15\%$ by the predicted models. Fittings of experimental and correlated data showed the data models followed the Langmuir adsorption isotherm from which favourable adsorption and prevalent physisorption were indicated as the C6H5NH2 corrosion-protection on aluminium metal in the 0.5 M HCl medium.</p>
77	<p>Zatir Sara and Biara Ratiba Widad. The impact of renewable energy in urban planning instruments: the case of PDAU (details, )</p> <p>Abstract. The instruments of urban planning are the practical expression of a specialized planning process. Having said that they represent the results and proceeds of the evolution of the city and urban thought .compared to which, they must evolve in their tours to meet the requirements of sustainable development including renewable energy. Now, it happens that the terms defined by the instruments and tools of urban planning are overtaken by the rapid development of the city, which gave the latter a configuration complex and fragmented, with many problems. Added to this, urban interventions are repeated and multiply without durable solutions to the city. Thus, Algerian cities evolve and transform in neglecting the conditions of real sustainability, able to open perspectives in the barrel of a sustainable development</p>

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78	<p>Nawal Benslimane, Ratiba Wided Biara and Sara Zatir. Stratagems of Popular Homes in the Desertic Climate. ... Now, in the Process of Perdition. (details, )</p> <p>Abstract. The built environment of man has never been and is still not controlled by specialists (architect, planner, etc.). This environment was the result of a popular architecture, which is the product of mass culture nourished by everydayness, the environment and local engineering. This habitat expresses the relationship between environmental constraints and local values, because it reasons in terms of ecosystems and environmental constraints. But, these days in a climate that is increasingly changing, the genius of the physical environment (from city to home) fades. The city, the home succumb simultaneously to an environmental crisis, man at the center of concerns is undermined, subject to climatic discomfort. This paper aims to show the ingenuity of the ancestral production in the most difficult environments to live, facing the passivity of contemporary production in relation to climate and climatic change.</p>
79	<p>Alain Pascal Goumba Cyubahiro, Samuel Chiche and Xiaofeng Guo. Recov'Heat: An estimation tool of urban waste heat recovery potential in sustainable cities (details, )</p> <p>Abstract. Waste heat recovery is considered as an efficient way to increase carbon-free green energy utilization and to reduce greenhouse gas emission. Especially in urban area, several sources such as sewage water, industrial process, waste incinerator plants, etc., are still rarely explored. Their integration into a district heating system providing heating and/or domestic hot water could be beneficial for both energy companies and local governments. EFFICACITY, a French research institute focused on urban energy transition, has developed an estimation tool for different waste heat sources potentially explored in a sustainable city. This article presents the development method of such a decision making tool which, by giving both energetic and economic analysis, helps local communities and energy service companies to make preliminary studies in heat recovery projects.</p>
80	<p>Aissaoui Marwa and Benhamza Moussa. HYDRO-CHEMICAL CHARACTERISTICS OF SEYBOUSE RIVER WATER AND ITS AFFLUENTS – CASE OF GUELMA SUB BASIN (NORTH EAST ALGERIA) (details, )</p> <p>Abstract. In recent years, water quality of Guelma region has experienced a significant deterioration, due to intensive use of chemical fertilizers in agriculture and uncontrolled industrial wastes. The waters of Seybouse River and its tributaries have a fair classified nitrite pollution exceeding the permitted/mandated standard for this element. The COD/BOD5 ratio, reflecting biodegradability indicates a diversified source of pollution in the study area. It is of domestic dominance (ratio between 2 and 3) in most of the analyzed points, it is of food origin (1.5 to 2) at Seybouse River (Bentabouche) reflecting better biodegradability, and finally of industrial origin at the River Maiz. The study of saturation index shows that surface waters from the studied area are under saturated compared with the evaporitic minerals (halite, gypsum and anhydrite) and supersaturated compared with carbonated elements (calcite, aragonite and especially dolomite). The waters of Seybouse River and its affluents have an excessive pollution with respect to PO4²⁻, NH4⁺, DBO5, DCO and PO4²⁻.</p>

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81	<p>Yassine Elhamdouni, Abdelhamid Khabazi, Chaimaa Benayad, Youssef Maaloufa and Soumia Mounir. Study of thermal and mechanical behavior of a composite material Clay/Alfa fibers: application to earth brick in northern Morocco. (details,  1)</p> <p>Abstract. Alfa 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 alfa (0.5 %, 1 %, 2 %, 3 %, 4 %). Then we compare thermal insulation of the new material (clay + alfa fibers) with the only Clay, for valorize the addition of alfa 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 + alfa) 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. On the other hand, we have shown, according to the results obtained, that 2% fiber alfa remains the percentage the most suitable for improving mechanical behavior of a material at base of clay.</p>
82	<p>Mohammed Lakhdar Louazene, M^a Del Carmen Alonso-García and Driss Korichi. Efficiency Optimization of a Photovoltaic water pumping System for Irrigation in Ouargla, Algeria (details,  1)</p> <p>Abstract. This work is technical study to contribute to the optimization of pumping systems powered by solar energy (clean) and used in the field of agriculture. To achieve our goals, we studied the techniques that must be entered on a photovoltaic system for maximum energy from solar panels. Our scientific contribution in this research is the realization of an efficient photovoltaic pumping system for irrigation needs. To achieve this and extract maximum power from the PV generator, two axes have been optimized: - Increase in the uptake of solar radiation by choice an optimum tilt angle of the solar panels, - It is necessary to add an adaptation device, MPPT controller with a DC-DC converter, between the source and the load.</p>
83	<p>Brice Tremeac, Florine Giraud and Pierrick Vallon. Impact Of Operating Conditions On Cooling Capacity For Sorption Systems Using Water As Refrigerant (details,  1)</p> <p>Abstract. The implementation of compact heat exchanger in sorption systems is a key factor to allow the development of these systems The aim of this paper is to develop a statistical model with a design of experiment (DOE) methodology and use dimensionless number to evaluate and understand the influence of the height of refrigerant liquid and secondary fluid inlet temperature on cooling capacity of a compact pate-type evaporator for sorption systems working near vacuum pressure. For this purpose, an experimental campaign was conducted on a small adsorption test bench using 13X/water as working couple.). Cooling capacities from 640 to 2000 W were measured. The DOE is a Doelhart type with two parameters: the inlet secondary fluid temperature (from 10 to 21 °C) and the filing level of refrigerant in the evaporator (from 6 to 24 cm). Thanks to the exploitation of the mathematical model obtained, optimal points under different constraints were found. A maximum cooling capacity of 2021 +/- 75 W in the entire experimental field was predicted for 25°C at the secondary fluid inlet temperature and 19.2 cm for the height of liquid level. Bond number and modified Jacob number per the ratio P_{sat}/P_{triple} were</p>

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	<p>analysed. The dimensionless numbers are correlated to the cooling capacity as a first step for designing compact plate-type evaporator for adsorption systems using water as refrigerant.</p>
84	<p>Mohand Kessal, Khadidja Amara and Idir Belaidi. Adiabatic expansion effect of natural Gas at the downstream Extremity of the Pipeline (details, ) Abstract. Abstract - Based on the conservation equations of fluid mechanics and energy discibed by the flow parameters, pressure (P) and the speed (V) and temperature (T) in a gas pipeline , two numerical simulation examples of natural gas transients are studied. The considered pipeline is under static pressure, at which two boundary conditions are applied to its downstream end, with an adiabatic discharge to the atmosphere. Obtained results have chown the parameters variation induced by the conditions of these instantaneous gas output conditions.</p>
85	<p>Soufiane Fezzai, Said Mazouz and Atef Ahriz. Smart Urban Design Reducing Transportation Impact in city centers (details, ) Abstract. Air pollution is one of the most serious problems facing human being; urban wastes are in first range of energy consumption and emission of greenhouse gasses. Transportation or car traffic is one of the most consumer sectors of fuel, and most pollutant. Reducing energy consumption in transportation and the emission of pollutant gasses becomes an important objective for urban designers; many solutions may be proposed to help solving this problem in future designs, but it depend on other factors in existing urban space especially in city centers characterized with high occupation density. In this paper we investigate traffic rate in the city center of the case study, looking for the causes of the high traffic using gate count method and estimating fuel consumption. We try to propose some design solutions to reduce distances so fuel consumption and emission of pollutant gasses. We use space syntax techniques to evaluate urban configuration and verify the proposed solutions.</p>
86	<p>Florine Giraud, Yacine Hamitouche, Pierrick Vallon and Brice Tremeac. Impact of the filling level on the global heat transfer coefficient of a plate cross section for sorption heat pumps (details, ) Abstract. Compact evaporator like plate heat exchangers can play a significant role in reducing the investment cost of low cooling power sorption systems. However, when water is used as refrigerant, the working pressure is very low and vaporization phenomena are really different than vaporization phenomena occurring at higher pressures. Few studies focus on this subject and there is a lack of knowledge about vaporization (boiling or evaporation) phenomena occurring in compact evaporators at low pressure. The design of such evaporators remain manly empirical. There is thus a need of better characterization of the influence of the driving parameters in order to optimize the evaporator design. The objective of this article is thus to go further in the understanding of phenomena occurring in compact plate-type evaporators. In that goal, an experimental campaign was conducted to study continuously the performance of a smooth plate type evaporator as a function of the filling levels. The influence of the saturation pressure and the secondary fluid temperature on an overall heat transfer coefficient is studied. It is show that there is a dependence of the maximal overall heat transfer coefficient to these parameters. It is also shown that there seems to be a strong dependence between</p>

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	phenomena observed and phenomena that happens before. Thus, dynamic and inertia effects must be taken into account and model developed in absorption configuration cannot be applied for this study.
87	<p>Wafa Bouaka and Abdelouahad Kriker. CRUMB RUBBER IMPACT TO THE MECHANICAL PERFORMANCE OF CONCRETE BASED AT ROUND GRAVEL (details, )</p> <p>Abstract. Today the concrete is used more than any other construction material, with almost four (4) billion cubic meters used worldwide. Throughout history, mankind has used concrete in construction. Concrete has not only been used in the construction of buildings such as dwelling areas but also in bridges, roads, tunnels, airports and water dams. It is a heterogeneous composite resulting from cement, aggregates, water and a limited quantity of adjuvant. The round gravel is an existing traditional material within the formulation of concrete. It is high in resistance to fragmentation and widely spread out in grand quantity in the Saharian regions. However, its utilization remains rare in different types of construction. The purpose of this study is to compare and contrast the use of local materials (Round gravel) with polymer industrial products (Crumb Rubber). This one is used to enhance the density, homogeneity, malleability and strength of the construction material.</p>
88	<p>Azlaoui Mohamed, Nezli Imed Eddine and Djelita Belkheir. Contribution to the Hydrodynamic Modeling of Groundwater in the Ain El Bel Syncline Wilaya of Djelfa (Algeria) (details, )</p> <p>Abstract. In arid and semi arid areas the protection and preservation of water resources is based on integrated resource managements, which will prove a fruitful way to deal with pollution and shortage of water, source of life for man on Earth. Djelfa region, and particularly Ain El Bel, the potential water has not able to meet human needs and agriculture and industry. This article is a contribution to hydrodynamic modeling of the Barremian aquifer of syncline Ain El Bel with Processing Modflow program. Software providing deterministic two-dimensional numerical simulation in steady state and transient of underground in the study aquifer. The main results provided a better view of different scenarios fluctuations piezometrics. The established predictions show an alarming state of this aquifer, hence the need for integrated management of groundwater resources to ensure sustainable development.</p>
89	<p>Rawad Assaf, Georges Descombes, Francis Guillemard, Elias Elhachem and Walid Larbi. Experimental evaluation of sound transmission through single, double and laminated glazing (details, )</p> <p>Abstract. This paper presents an experimental investigation of sound transmission loss through single, double and laminated glazing by respecting the ISO recommendations. The laboratory experiments were performed by placing the window between two reverberation rooms. The window was subjected to diffuse field. The experimental set-up is illustrated, then the results are presented and discussed. The insulation conferred by the glazed is characterized, and the dips of insulation are located.</p>

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90	<p>Elie Keryakos, Joseph Toubassy, Amélie Danlos, Denis Clodic and Georges Descombes. Fin-and-Tube Heat Exchanger Material and Inlet Velocity Effect under Frosting Conditions (details, )</p> <p>Abstract. The frosting fin-and-tube heat exchanger used in this study is implemented in the dehydration process of a biogas upgrading pilot. Water is separated from the biogas by frosting it at very low temperatures on the cold surfaces of the fin-and-tube heat exchanger. Once frosted, a defrosting system is used to remove water from the process. The main interest of this study is the frosting system. The effects of the biogas velocity, fin material, tube material and frost layer thickness on the performance of the fin-and-tube heat exchanger are investigated. Increasing the biogas velocity tends to increase the frosting layer thickness and the external pressure drop. This will lead to decrease the heat exchanger performance and the frosting cycle duration. The thermal conductivity of the fins and tubes has a major effect on the performance of the heat exchanger. Higher thermal conductivity decreases the heat exchanged surface. A numerical model has been developed, then numerical and experimental results extracted from a biogas upgrading pilot are compared.</p>
91	<p>Joseph Bassila, Joseph Toubassy, Denis Clodic, Amélie Danlos and Georges Descombes. Material And Fin Pitch Effect On Frosting CO2 In A Fin-And-Tube Heat Exchanger (details, )</p> <p>Abstract. Cryo Pur technology uses cryogenic separation to remove water vapor and carbon dioxide from biogas, in order to obtain bio-methane. To cool down the biogas at a very low temperature, a fin-and-tube heat exchanger is designed. In order to improve the fin-and-tube heat exchanger performance, a model is developed to investigate the material and fin pitch on frosting carbon dioxide. This paper will study the effect of the tubes and the fins material, and the fin pitch effect. The purpose is to extend the duration of a frosting cycle.</p>
92	<p>Abdrabi Brahimi. what fate for ksours and town-ksours southwestern Algeria? (details, )</p> <p>Abstract. At each reflection we carry on small towns and villages of our region (southwestern Algeria), a question arises in mind and is as follows: what future for these compact sets of old buildings, which are part integral of these small towns, and we call ksours. In what follows we making a modest contribution to the overall reflections that reflect the resurgent interest vis-à-vis these ksours; through the context in which these entities are evolving; local, national and international awareness through planned involving national and international institutions (the project roads ksours for exemple) or spontaneous initiated by local populations interventions. Finally, we present three recommendations from which it will focus the efforts of the various stakeholders in order to make them integral and complementary part of the sustainable development of these small towns- ksours.</p>
93	<p>Sabrina Abdeddaim, Achour Betka and Omar Charrouf. Optimal Tracking and Second Order Sliding Power Control of the DFIG Wind Turbine(details, )</p> <p>Abstract. In the present paper, an optimal operation of a grid-connected variable speed wind turbine equipped with a Doubly Fed Induction Generator (DFIG) is presented. The proposed cascaded nonlinear controller is designed to perform two main objectives. In the outer loop, a maximum power point tracking (MPPT)</p>

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	<p>algorithm based on fuzzy logic theory is designed to permanently extract the optimal aerodynamic energy, whereas in the inner loop, a second order sliding mode control (2-SM) is applied to achieve smooth regulation of both stator active and reactive powers quantities. The obtained simulation results show a permanent track of the MPP point regardless of the turbine power-speed slope moreover the proposed sliding mode control strategy presents attractive features such as chattering-free, compared to the conventional first order sliding technique (1-SM).</p>
94	<p>Salim Haddad and Mourad Mordjaoui. Investigation of a Hybrid PVT Air Collector System (details, ) Abstract. The photovoltaic thermal hybrid (PVT) collectors, which simultaneously produce electricity and heat, are an alternative to photovoltaic modules and thermal collectors installed separately. Indeed, the heat extracted from the solar cell is used to heat water or air, thereby cooling the cell, and thus increasing its energy efficiency. This paper deals with a hybrid PVT air collector in which a new design has been proposed and tested. Its principle is based on the return of the preheating air to a second heating. The air thus passes twice under the solar cells before being evacuated to the outside of the collector (for space heating). The system is modular and expandable to cover large spaces to be heated. The experimental results of this novel design are presented and discussed under both normal and forced circulation. This technique of air return shows favorable results in terms of the quality of the heated air and electric power generation.</p>
95	<p>Hocine Kiniouar, Azzedine Hani and Abdelkader Younsi. Assessing Long-term Water Demand of Constantine Province in Kébir-Rhumel Mediterranean Catchment (details, ) Abstract. By mid-century, in the southern Mediterranean countries, levies probably reach the limit level of renewable water resources. Algeria is one of the poorest countries in renewable water resources, with an annual storage capacity of 14.6 million m³ 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 Constantine province. 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 Constantine province. A business as usual and five scenarii of «water demand " were calculated by WEAP model to simulate the uncertainties over the period of 20 years (2008-2027) : (1) Population growth, (2) increase in irrigated crop lands, (3) decrease in basic drinking water consumption, (4) decrease in basic irrigation water consumption and (5) increase in basic industrial water consumption. The results showed that scenario 3 is the best alternative scenario and the most efficient by reducing drinking water demand for about 12 Mm³ in 20 years, and thus preserve reaching the limits of water resources potentialities.</p>
96	<p>Younes El Khchine. Design and optimization the horizontal axis wind turbine blades (HAWTS using blade element momentum theory BEM)(details, ) Abstract. The horizontal axis wind turbine (HAWT) blade geometry with the diameter of 10.054 m using the S809 airfoil profile have been investigated</p>

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	<p>numerically. The optimum blade shape, obtained using improved blade element momentum (BEM) theory. The main objectives are to predict the aerodynamic performances such as forces and torque imposed on the rotor blades which are essential to its structure or design. This approach requires much less computing time and memory than three-dimensional simulation flow around the wind turbine rotor with simple CFD method. The flow is assumed unsteady, incompressible and fully turbulent.</p>
97	<p>Reda Tahtah, Ali Bouchoucha, Cherfia Abid and Mounir Tichouchai. Experimental study of heat transfer in parabolic trough solar receiver: using two different heat transfer fluids (details, ) Abstract. The sun provides the earth with huge amounts of energy that can be exploited in various forms. Its exploitation can be done by using a parabolic through solar concentrator integrated with thermal storage tank, that we already made, and it is our main study. This study obviously requires special attention to the effect of the parameters of the fluids, in addition to thermal performances of this system. To do this, we studied the thermal behavior of this concentrator, and by choosing the summer period because of its stable illumination (clear sky). Before starting the test, it is necessary to check the flow circuit and the storage tank which completely filled with fluid, started the measures on the morning, the concentrator directed towards the sun until the sunset, we record the variation of different temperatures such as Tin, Tout, Tsur, Tfluid and Tamb. We have compared the evaluation of temperatures between water and thermal oil in order to determine the best thermal behavior and the importance of the specific heat of each fluid.</p>
98	<p>Belarbi Lakhdar, Sahnoune Tayeb and Boudersa Ghani. The Level of Flood Risk between Topography and Urban Morphology Case of Ghardaia(details, ) Abstract. In this paper, we will discuss the behavior of the urban morphology in relation with the risk of flooding, taking as varied site's topography and the two types of urban plot in the case of this study, Ghardaia city. The flood risk management has been dominated by logic of protection which is the guard against catastrophic events by building defenses against floods. However, this centralizing management mainly based on the use of the structural measures will show its limitations facing the emergence of new risk areas due to urbanization in flood zones and highlight the impossibility to completely eliminate the risks.</p>
99	<p>Ghani Boudersa, Tayeb Sahnoune and Lakhdar Belarbi. Evaluation of the urban vulnerability of cities exposed to the industrial risks. Study case: the city of Skikda (details, ) Abstract. The impacts of urban form of the increase or decrease industrial risks are important and have a direct bearing on the vulnerability of the city. The city of tomorrow will surely be the sustainable city that will minimize environmental constraints. Our case study of the city of Skikda, which is characterized by an unstable position juxtaposed petrochemical industrial area, plus the lack of adequate protection and wind that brings death was case of an accident. That's why we can say that the city is exposed to a major industrial risk not mean high risk, especially the southern part of the city. Many studies are made on the reports of the city with the surrounding industrial risks, but few studies are made about the behavior of the city facing the industrial risk. In this study we will try to verify the</p>

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	behavior of the city in case of industrial risks; and especially the relationship between urban form, space configuration and industrial risk.
100	<p>Babak Soltan and Brian Robyns. Building Energy Systems Operation Optimization with Ice Storage – A Real Time Approach (details, )</p> <p>Abstract. Energy consumption in building energy systems with ice storage is in tight relationship with the operation logic of the associated HVAC system. Furthermore, engineering calculation norms describe design conditions as the best operating mode for ice storage air conditioning. Since performance of ice storage air conditioning sub-systems are susceptible to environmental variations as well as operational priorities, dynamic operation optimization of these systems with proper controllers is desirable from both sustainability and business perspective. This in turn leads to an increment in heat transfer rate and ultimately, to an overall improvement in the efficiency of the building energy system. In this article the dynamic behavior of energy system with ice storage in a typical building under certain optimization strategies has been assessed. The BEMWIS (Building Energy Management with Ice Storage System) has been fitted to analyze automatically collected data during daily operation of the energy system and load balancing via stored energy as ice, and to properly respond to the variable inputs. The knowledge based control system, uses data bases containing equipment operation data, as well as corresponding mathematical models for the overall energy consumption. The optimization methodology development has been based on empirical experiences gained while running ice storage air conditioning. The optimization methodology applies load prediction according to the calculations made by decision making system, which records, shifts, and crosses out unnecessary energy consumption.</p>
101	<p>Paul Bouteiller, Marie France Terrier and Pascal Tobaly. Experimental Study of Heat Pump Thermodynamic Cycles Using CO2 Based Mixtures - Methodology and First Results (details, )</p> <p>Abstract. The aim of this work is to study heat pump cycles, using CO2 based mixtures as working fluids. Since adding other chemicals to CO2 moves the critical point and generally equilibrium lines, it is expected that lower operating pressures as well as higher global efficiencies may be reached. A simple stage pure CO2 cycle is used as reference, with fixed external conditions. Two scenarios are considered: water is heated from 10 °C to 65 °C for Domestic Hot Water scenario and from 30 °C to 35 °C for Central Heating scenario. In both cases, water at the evaporator inlet is set at 7 °C to account for such outdoor temperature conditions. In order to understand the dynamic behavior of thermodynamic cycles with mixtures, it is essential to measure the fluid circulating composition. To this end, we have developed a non intrusive method. Online optical flow cells allow the recording of infrared spectra by means of a Fourier Transform Infra Red spectrometer. A careful calibration is performed by measuring a statistically significant number of spectra for samples of known composition. Then, a statistical model is constructed to relate spectra to compositions. After calibration, compositions are obtained by recording the spectrum in few seconds, thus allowing for a dynamic analysis. This article will describe the experimental setup and the composition measurement techniques. Then a first account of results with pure CO2, and with the addition of propane or R-1234yf will be given.</p>

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102	<p>Soumia Mounir. Contribution of sustainable development on building by using Ecological Insulation Cork on the Unfired clays Blocks. (details, )</p> <p>Abstract. Developing insulation building materials with low energy consumption becomes a necessity in Morocco so as to reduce the energy bill of houses. For this purpose, a series of experimental studies were performed on a two types of clays samples, the first is taken from Ben Smim near Ifrane mountainous zone and the second one from Rabat coastal zone. The first step in this study is the chemical characterization of the Ben Smim clay by means of X-ray diffraction. Or the composition of Rabat clay is taken from the brickyard. The results show that the clay sample for Ben Smim region is mainly made up of Illite / muscovite which is a non-swelling clay. The second step is the comparison of the thermal characterization of clays embedded in cork in order to show the effect of cork on the thermal properties of both clays. Hot plate method and Flash methods were carried out on samples of clays and clays with Cork. Finally a comparison is conducted between the two clays of the thermal transmittance to show the effect of cork on insulating clay.</p>
103	<p>Najoua Mekaddem, Samia Ben Ali, Atef Mazioud and Ahmed Hannachi. Prediction of the Thermal Behavior of a Paraffin Composite for Thermal Energy Storage (details, )</p> <p>Abstract. Thermal energy storage is a useful tool to reduce energy consumption in building. In the current study, the melting phase change heat transfer in a phase change material composite structure was numerically studied. The composite was a paraffin wax saturated in an expanded perlite and surrounded by aluminum sheets. A 3D numerical model was adopted to solve the heat transfer through this configuration exposed to a regular heat flux. Ansys Fluent software was used for simulating the phase change process. The effects on the temperature evolution, the heat flux density and the PCM active liquid fraction were analysed. Adding aluminum particles to enhance the heat transfer rate was also investigated.</p>
104	<p>Kerkoub Youcef, Benzaoui Ahmed, Ziari Yasmina and Haddad Fadila. Channel Geometric Scales Effect on Performance and Optimization for Serpentine Proton Exchange Membrane Fuel Cell (PEMFC) (details, )</p> <p>Abstract. A three dimensional computational fluid dynamics model is proposed in this paper to investigate the effect of flow field design and dimensions of bipolar plates on performance of serpentine proton exchange membrane fuel cell (PEMFC). A complete fuel cell of 25 cm² with 25 channels have been used. The aim of the work is to investigate the effect of flow channels and ribs scales on overall performance of PEM fuel cell. Therefore, geometric aspect ratio parameter defined as (width of flow channel/width of rib) is used. Influences of the ribs and openings current collector scales have been studied and analyzed in order to find the optimum ratio between them to enhance the production of courant density of PEM fuel cell. Six kind of serpentine designs have been used in this paper included different aspect ratio varying from 0.25 to 2.33 while the active surface area and number of channels are keeping constant. Aspect ratio 0.25 corresponding of (0.4 mm channel width/ 1.6mm ribs width), and Aspect ratio 2.33 corresponding of (0.6 mm channel width/ 1.4mm ribs width). The results show that the best flow field designs (giving the maximum density of current) are which there dimensions of channels width is minimal and ribs width is maximal ($\Gamma \approx 0.25$). Also decreasing width of channels</p>

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	enhance the pressure drop inside the PEM fuel cell, this causes an increase of gases velocity and enhance convection process, therefore more power generation.
105	<p>Khadri Samira, Laraba Abd El Aziz and Haied Nadjib. Physico-Chemical Composition Of Urban Wet Weather Discharges In Seybous Watershed (North Eastern Algeria) (details, )</p> <p>Abstract. Seybous Watershed is one of the largest basins in Algeria. It is characterized by a large urban and industrial activity presented on both banks of the river and tributaries Seybous. It daily receives discharged without treatment This work provides an overview of the quality of urban wet weather discharges; this study is based on several morphological parameters Hydrometeorological basin. During the year 2012, two samples were performed (in August and September). These have worn on urban waste and the waters of Seybous Wadi The analysis results indicate that urban waste are characterized by high pollutant load varies with the rain and the influence of these releases is visually along the rivers and waters of the different stations are between the classes of poor quality very bad.</p>
106	<p>Youssef Maaloufa, Soumia Mounir, Abdelhamid Khabbazi, Yassine Elhamdouni and Jalal Kettar. Effect of Ecological Insulating Fiber on the Thermal and Mechanical Properties of plaster. (details, )</p> <p>Abstract. This paper study the effect of the ecological insulating material fiber on the thermal and mechanical properties of composites based on plaster and to determine the best proportion of insulating material which assure an adequate thermal and mechanical parameter. In order to realize this work, an identification of densities of composites was determined so as to specify the lightness of each one .Also, the thermal and mechanical properties characterization was done using the asymmetrical hot plate, the flash and three points flexure methods for different percentage of additives fiber alpha in order to choose the optimum proportion which assure the best composite in term of thermal and mechanical properties.</p>
107	<p>Meriem Chadel, Mohammed Moustafa Bouzaki, Asma Chadel, Pierre Petit, Jean-Paul Sawicki, Michel Aillerie and Boumediene Benyoucef. Influence of the spectral distribution of light on the characteristics of photovoltaic panel.</p> <p>Comparison between simulation and experimental. (details, )</p> <p>Abstract. We present and analyze experimental results obtained with a laboratory setup based on a hardware and smart instrumentation for the complete study of performance of PV panels using for illumination an artificial radiation source (Halogen lamps). Associated to an accurate analysis, this global experimental procedure allows the determination of effective performance under standard conditions thanks to a simulation process originally developed under Matlab software environment. The uniformity of the irradiated surface was checked by simulation of the light field. We studied the response of standard commercial photovoltaic panels under enlightenment measured by a spectrometer with different spectra for two sources, halogen lamps and sunlight. Then, we bring a special attention to the influence of the spectral distribution of light on the characteristics of photovoltaic panel, that we have performed as a function of temperature and for different illuminations with dedicated measurements and studies of the open circuit voltage and short-circuit current.</p>

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108	<p>Jean Zaraket, Takla Salame and Michel Aillerie. Parameters and characteristics of PV solar modules under the influence of thermal stresses (details, )</p> <p>Abstract. The effect of thermal stress on the performance of PV solar modules under dark and illuminated conditions was evaluated. The (I-V) characteristics and parameters for the PV modules have been measured, in dark and illuminated conditions, after each period of thermal stress. A digital double exponential model was used to analyze the experimental measurements. The changes in characteristics, which are caused from the effect of heat introduced for different stress levels, simulated the effect of accumulated extreme temperature that can occur in the solar cells and modules as the result of shading and other different reasons. The modification for normal operation of PV cells and modules exposed to shadow effects can be deduced from the present study.</p>
109	<p>David Merlaut, Jean-François Hetet, David Chalet and André Sobczak. A territorial diagnostic of the French region Pays de la Loire through the prism of energy metabolism (details, )</p> <p>Abstract. The central focus of the research is on conducting a societal metabolism approach to the region of Pays de la Loire in France. For doing so, the Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism (MuSIASEM) methodology is used where fund variables such as human activity and land use are correlated over flow variables, such as energy and gross added value following the theoretical framework of Georgescu-Roegen. Thereafter the feasibility, viability and desirability of current development patterns for the region are questioned to be able to transition into alternative scenarios.</p>
110	<p>Naima Messaoui, Amaria Matallah-Boutiba and Zitouni Boutiba. The prevalence and distribution of indicators of fecal contamination in the sand from the beaches of Oran coast (details, )</p> <p>Abstract. The beaches are a major vector of attraction, highly frequented sites, in summer many visitors, hikers and boaters go there only with a view to enjoy the long sandy beaches. Following the large attendance, possible contamination of the sand by bacterial communities could be a source of transmission of certain pathogenic bacteria. A count of the different bacterial flora that exists in this environment could give an estimate of the state of contamination. As part of this work we want to show the presence of certain bacteria that can cause illness to swimmers and compare the different levels of contamination on the four beaches. Sandy beach from four sites along the Oranian coast was analyzed during the dry and rainy season from December 2010 to June 2015.</p>
111	<p>Rubal Kaur Sambhi and Abdul Ghani Olabi. Modelling and optimization of stand-alone renewable energy systems with hydrogen storage (details, )</p> <p>Abstract. In this paper modelling and optimization of stand-alone renewable energy system with hydrogen storage is carried out for a small housing community in Glasgow. The proposed renewable system is based on wind - solar power plant to fulfil the power demand of community. In time of low power demand, energy will be converted to hydrogen by using an electrolyzer, which then can be used either as a fuel for gas turbine or sold as a fuel in cylinders. The economic and technical feasibility analysis were performed on annual wind and solar radiation data of proposed site near Glasgow which suggest that proposed hybrid system is the most</p>

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	suitable system that suits the weather swings of Scotland. The optimization procedure is based on the hybrid system modelling by using MATLAB software and experimental work. The results show that costs and land usage are minimized and power output is maximized by using stand-alone renewable energy systems.
112	<p>Mohamed Lasheen, Ali Kamel, Mazen Abd Elsalam and S. Ookawara. ANFIS based Maximum Power Point Tracking Controller for PV Systems Using Direct Control Method (details,  1)</p> <p>Abstract. The development of maximum power point tracking (MPPT) is continuing in order to increase the utilization efficiency of the photovoltaic (PV) systems. Due to the nonlinearity of the tracker mechanism and nature of photovoltaic generator, the artificial intelligence based techniques, especially adaptive neuro-fuzzy inference system (ANFIS) is used in this work. This paper is aimed at proposing a different method for using ANFIS based MPPT for PV systems. The proposed method uses the climatic variants (solar radiation and operating temperature) as inputs for the ANFIS controller that provides the regulated duty ratio for a boost DC-DC converter. The main difference of the proposed method to existing ANFIS based MPPT methods includes elimination of the proportional integral (PI) control loop. Moreover, the proposed ANFIS model increases the reliability and reduces the cost of the tracking system by eliminating the need for PI controller that its gains are in need for accurate tuning method. The proposed method has been evaluated by numerical simulation using MATLAB under different atmospheric conditions. For evaluation and comparison analysis, the perturb and observe (P&O) based MPPT have been presented due to its popularity. Performance assessment covers time response, tracking accuracy, oscillation and stability. The results present performance improvement by fast time response, more stable operation with no oscillation and high tracking accuracy as compared to the P&O technique.</p>
113	<p>Mahmoud Khaled, Khaled Chahine and Mohamad Ramadan. New concept of power generation from TEG using the exhaust airflow of All-Air HVAC systems and the condenser hot air (details,  1)</p> <p>Abstract. The present work proposes a new design for electric power generation using a thermoelectric power generator (TEG). It recovers waste energy of the HVAC condenser and reuses the exhaust air flow for thermo-electric power generation. The air of the condenser is considered as heat source, whereas the exhaust air flow is utilized as cooler. The advantage of this concept is that it allows recovering waste energy of HVAC systems to produce green energy through TEG. To proceed, a mathematical model is first developed and a parametric analysis is then conducted to evaluate the power generated with the new concept when the air velocity of the exhaust airflow and that of the condenser vary. It is shown that for a space cooling load of 100 kW, a 40x40 cm² flat plate is capable to generate 90 W of electrical power.</p>
114	<p>The Vinh Nguyen, Michel Aillerie, Pierre Petit, Hong Thang Pham and Thành Vinh Vo. Push-Pull with Recovery Stage High-Voltage DC Converter for PV Solar (details,  1)</p> <p>Abstract. A lot of systems are basically developed on DC-DC or DC-AC converters including electronic switches such as MOS or bipolar transistors. The limits of efficiency are quickly reached when high output voltages and high input currents</p>

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	<p>are needed. This work presents a new high-efficiency-high-step-up based on push-pull DC-DC converter integrating recovery stages dedicated to smart HVDC distributed architecture in PV solar energy production systems. Appropriate duty cycle ratio assumes that the recovery stage work with parallel charge and discharge to achieve high step-up voltage gain. Besides, the voltage stress on the main switch is reduced with a passive clamp circuit and thus, low on-state resistance R_{dson} of the main switch can be adopted to reduce conduction losses. Thus, the efficiency of a basic DC-HVDC converter dedicated to renewable energy production can be further improved with such topology. A prototype converter is developed, and experimentally tested for validation.</p>