Program of Algerian Symposium on Renewable Energy and Materials

ASREM2022

16-17 March 2022

University of Medea, Medea

16/03/2022			
9h00-9h30	Opening ceremony Prof. Djaafar BOUAROURI, Rector of Medea University Prof. Abdelouahab MEKHALDI, Director of ENP- Algiers Dr. Mohamed ABBAS, Director of UDES Prof. Elhadj AILAM, Rector of Djelfa University Dr. Mourad BACHENE, Dean of Faculty of Technology Dr. Younes CHIBA, Chair of ASREM2022 Prof. Abdelhalim TLEMÇANI, Co-Chair of ASREM2022		
9h30-10h00	**Plenary session1** **HOW TO PROMOTE LOCAL CONTENT & EMPLOYMENT IN THE ALGERIAN RENEWABLE ENERGY PROGRAM? THE CASE OF SOLAR 1000 MW** **Mr. Boukhalfa YAÏCI** Chair: Prof. Abdelhalim TLEMÇANI, Dr Mohamed ABBAS.		
10h30-10h45	Coffee break		
	Oral Sessions (Video)		
11h00-13h00	Session 1	Session 2	Session 3
13h00-14h00	Lunch		
14h00-14h30	**Plenary session2** **A LIFE EXPERIENCE OF A SOLAR CUSTOMER** **Prof. Belgacem HABA** Chair: Prof. Abdellah KOUZOU, Prof. Mouloud GUEMANA		
Oral Sessions (Video)			
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9h00-9h30	**Plenary session3** **SHALLOW GEOTHERMAL ENERGY SOURCE FOR EFFICIENT AIR COOLING/HEATING IN BUILDINGS** **Prof. Mohamed OUZZANE** Chair: Prof. Arezki SMAILI, Dr. Mustapha HATTI		
10h00-10h30	**Plenary session 4** **RENEWABLE ENERGIES: CURRENT STATUS, FUTURE PROSPECTIVES, AND ENABLING TECHNOLOGY** **Prof. Haitham ABU-RUB** Chair: Prof. Abdellah KOUZOU, Prof. Ahmed HAFAIFA		
Oral Sessions (Video)			
10h30-11h30	Session1	Session2	Session3
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11h30-13h00	Session 1	Session 2	Session 3
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14h00-14h30	**Plenary session 5** **HEAT PUMPS UNLOCK THE PATH FOR DECARBONISATION OF LOW-GRADE HEATING PROCESSES** **Prof. Hakim NESREDDINE** Chair: Prof. Mounir AKSAS, Prof. Mounir BOUHEDDA		
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List of plenaries

Plenary (1): 16/03/2022 at 9h30

How to promote Local Content & employment in the Algerian Renewable Energy Program?
The case of Solar 1000 MW

Boukhalfa Yaïci[1]

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Biography For more than 30 years, he was involved in all segments of solar industry. He started his career in 1987 as a researcher for CDER (Centre de Développement des Energies Renouvelables). During a decade, he developed and installed different off-grid systems. From 1999, he joined different companies (local and international) installing thousands of off-grid systems. In 2008, he joined Cevital Group with the aim to develop industrial projects in CSP and PV technologies. During this period, he participated to set up DII (Desertec Industrial Initiative) with European companies in Berlin in 2009. From industry to consulting services, he set up his own consulting company providing technical advisory to national and international companies and World Bank.
With Algerian industrial companies, he founded the Cluster Energie Solaire[1] (CES) in June 2017.
He holds an Engineering Degree from Hydrocarbons and Chemical National Institute (1984, INHC, Boumerdes, Algeria) and Magister in Renewable Energy at HCR (1987, Haut Commissariat à la Recherche, Algiers).

Abstract
Since 2011, Algeria is searching a best way to set up an energy transition passing from a 98% fossil energy to a mix based on Renewable Energy + Energy Efficiency + Fossil Fuels (30% of RE by 2035).
For more than a decade, few results were obtained for different reasons (lack of a strong political will, heavy weight of an energy public sector, absence of a precise deployment program, lack of expertise, etc.). A perceptible change is occurring since June 2020 with a new ministry dedicated to energy Transition and Renewable Energies (MTEER), a dedicated program for Renewable Energy and Energy Efficiency was announced in 2021. An important axis will be dedicated to Green Hydrogen.
In December 2021, a ''Solar 1000 MW'' program was launched and a great interest was manifested by local and international players. It's a first step to deploy 15000 MW by 2035.
As an organisation interested to participate actively in this challenge, Green Energy Cluster Algeria proposed in many occasions thoughts and ideas to develop RE program dedicated to Agriculture sector, self-consumption, etc. The side of local industrial and services capabilities were highlighted and we proposed a way to develop a Local Content starting from what it's available and going far in this direction in order to promote an industry dedicated to RE generating employment for young people.
The ''Solar 1000 MW'' program is a new opportunity for local and international players to develop local expertise in industry and services. In this presentation, we will focus on different phases to build a solar PV power plants, expertise needed, equipment, systems etc. where companies, consulting firms and R&D institutions can emerge.

Key words: *Renewable Energy, Solar, Local Content.*

[1] An organisation dedicated to promote synergies between members and positioning itself as a partner for ministries in charge to promote RE in Algeria

Plenary (2): 16/03/2022 at 14h00

A LIFE EXPERIENCE OF A SOLAR CUSTOMER

Belgacem Haba

Dr. Belgacem Haba was born in 1957 in El-Meghaier, wilaya d'El-Oued, Algeria. Dr. Haba joined Xperi (previously Tessera) in 1996 and is now its Senior Technical Fellow and Vice President. Today he is heading the path finding team in the electronic R&D division. His latest activities include the development of 3D technologies for mobiles and servers alike. Dr. Haba was with Google data center platform division as senior staff and before that he co-founded SiliconPipe Inc. in 2002, a high-speed interconnects Start-up Company based in Silicon Valley that got acquired by Samsung. He also managed the advanced packaging R&D division at Rambus. From 1988 to 1996, he worked for the NEC Central Research Laboratories in Tokyo Japan and for IBM Watson Research Center in New York on the applications of lasers in microelectronics.
In 1990, Dr. Haba was teaching at the University of Biskra. He holds a Ph.D. in materials science and engineering in 1988 from Stanford University, California in the field of solar energy. He also obtained from the same university two master's degrees in applied physics and materials science. He received his Bachelor's degree in physics from the University of Bab-Ezzouar, Algeria in 1980. Dr. Haba holds over 500 U.S. patents, and close to 1500 patents and patent applications worldwide. He is listed among the top 100 most prolific inventors worldwide. In 2017 he opened the Haba Institute in Algeria to help young entrepreneurs. Dr. Haba has authored numerous technical publications, has also participated in many conferences worldwide and was recognized in many occasions. To name a few; Kuwait Informatics Badge of honor in 2019, Wissam-el-3alam aljazairi in 2015, R&D 100 for most prestigious innovation in 2003, and the opening the Nasdaq in 2007.

Abstract
Solar energy field would succeed with the great support of the technical research advances, new technologies discovers, and great improvements in manufacturing. But this is not enough in itself if the customer side and his/her business implications are not taken into considerations. In this talk we would focus on the steps, the needs and the finances of a customer aiming to install his own home solar system. The example of California will be presented as a reference, though that the case takes place in California, but its main implications are the same for Algeria.

Plenary (3): 17/03/2022 at 9h00

Shallow Geothermal Energy Source for Efficient Air Cooling/Heating in Buildings

Mohamed Ouzzane

Department of Mechanical Engineering, Islamic University of Medina, Medina,
mohamed.ouzzane@usherbrooke.ca, Kingdom of Saudi Arabia.

Biography Since 2016, Dr. Mohamed Ouzzane is a Professor in the mechanical department at the Islamic University of Madinah (K.S.A.). He received his PhD from University of Sherbrooke (Quebec, Canada), his Magister from Haut Commissariat a la Recherche (Algiers) and his Bachelor (Engineer) from (Ecole Nationale Polytechnique d'Alger). During 2000-2016 he was a research scientist at CanmetEnergy-Varennes (Natural Resources Canada) and Associate Professor at the University of Sherbrooke. During 1986-1996 he was an Assistant Researcher at CDER, Algiers. His research interests include both experimental and numerical activities. His areas are related to thermo fluid sciences and renewable energy systems. He was a leader of the research program of the development of new technologies and advanced practices for refrigeration and ground source heat pumps. He is an author and co-author of more than 100 scientific papers, 3 patents and book chapter, supervisor of more than 25 students in Master, PhD and Postdoctoral degrees. He is a member of an editorial board of the Islamic University Journal of Applied Sciences and reviewers of many international scientific journals.

Abstract

Geothermal energy is one of the renewable energies that presents an interesting alternative energy source for the conventional energy sources. The proposed talk will start by general introduction related to information about the different forms of geothermal energy sources and their advantages and disadvantages. However, more focus will be on the shallow geothermal energy source where during the next sections, different technologies used to extract/release heat from/into the earth for air cooling/heating in buildings will be outlined. Special attention will be given to the ground source heat pump and earth to air heat exchanger (Canadian well).

Key words: Shallow Geothermal, Ground Source Heat Pump, Canadian Well, Earth to Air Heat Exchanger.

Plenary (4): 17/03/2022 at 10h00

RENEWABLE ENERGIES: CURRENT STATUS, FUTURE PROSPECTIVES, AND ENABLING TECHNOLOGY

Haitham Abu-Rub is a professor at Texas A&M University at Qatar (TAMUQ) and holds two PhDs. Abu-Rub has research and teaching experiences at many universities in many countries including Qatar, Poland, Palestine, USA, and Germany. Abu-Rub has served for five years as the chair of Electrical and Computer Engineering Program at TAMUQ and is serving as the managing director of the Smart Grid Center at the same university. His main research interests include power electronic converters, renewable energy systems, electric drives, and smart grid. Abu-Rub is the recipient of many national and international awards and recognitions. He has published more than 500 journal and conference papers, six books, and six book chapters. Dr. Abu-Rub is a Fellow of the IEEE and Co-Editor in Chief of the IEEE Transactions on Industrial Electronics.

Abstract

Electric energy security is one of the most essential and important needs for humanity. The fluctuating cost and limited sources of fossil fuels, in addition to the need to reduce greenhouse gasses emissions, have made renewable resources very attractive in today's world economy and energy mix. The potential for renewable energy resources is enormous as they can, in principle, continually meet many times the world's energy demand; therefore, they will have a significant share in the future world's energy portfolio, and much of the world is now concentrating on advancing their pool of renewable energy resources. Accordingly, during the seminar it will be presented how renewable energy resources are currently being deployed and their future prospective. Additionally, the challenges of their integration with the electric grid will be highlighted. Finally, the seminar will represent the impact of smart grid paradigm to enable the domination of renewable energy share.

Plenary (5): 17/03/2022 at 14h00

Heat pumps unlock the path for decarbonisation of low-grade heating processes

Hakim Nesreddine[1]

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email : nesreddine.hakim@hydroquebec.com

Biography Hakim Nesreddine is currently an R&D project leader at Hydro-Quebec, a major Canadian electric utility. He is a holder of a BSc in climate control engineering and a PhD in mechanical engineering. He also earned a Master of Business administration (MBA) with a concentration in project management.
Over the course of his career, he has acquired extensive experience in energy industry, both from a technical and business perspective. His expertise includes distributed power generation, waste heat recovery and energy conversion. During the last decade, Dr. Nesreddine led multidisciplinary teams dedicated to developing cutting-edge technologies and applications in partnership with leading companies. His current projects focus on integrating sustainable solutions and implementing advanced control logic for demand flexibility to decarbonise buildings and industrial processes. He has made numerous scientific and technical contributions, including peer-reviewed research papers, chapter books and patents.
During his career, he was appointed adjunct professor at the University of Sherbrooke where he has taught undergraduate courses in science/engineering and acted as an adviser to PhD candidates. He has given several plenary lectures at international conferences and has been a member of expert panels on green energy and energy efficiency. In addition, Dr. Nesreddine has served on the steering Committee of the Canada Green Building Council and has participated in numerous technical committees and working groups of the Canadian Standard Association (CSA).

Abstract
Given the magnitude of climate changes, reduction of GHG emissions and their environmental impacts has raised a global awareness. The strategy developed by many countries is based on the decarbonisation of the most polluting sectors by means of efficient electrification and energy efficiency. This transformation of the energy market can only be achieved with low-carbon sustainable technologies to reduce carbon footprint, particularly in buildings and industrial processes. In this respect, heat pumps are a good candidate to eliminate dependence on fossil fuels for low-grade heat generation.
The speech will provide an overview and a state of the art on heat pumps using natural refrigerants particularly carbon dioxide. An emphasis is put on concepts of integration and methods for improving performance by introducing passive components such as ejectors and vortex tubes.

Key words: *Heat pumps, Transcritical Cycle, Natural refrigerants, Decarbonisation,*

Session 1: Oral Sessions (Video) **16/03/2022 (11h00-12h00)**		
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67	Wake Optimization Using BEM-Jensen Coupled Model For Horizontal Axis Wind Turbines	lamamra, moussa*
73	Numerical Study of the Dynamic and Thermal Field of a Flow in a Shell and Tube Heat Exchanger Equipped with Baffles with Two Cross Sections	youcef, ahmed *
176	Investigation of a swirl stabilized (CH4) air flame with varied hydrogen content by using computational fluid dynamics (CFD) to study temperature field and flame shape	Ali, Bouziane *
197	Fault Diagnosis Structure based on Kalman Filter for the Pitch System of a Wind Turbine Process	Zemali, Z.
212	Aeroacoustic Modeling and Analysis of Isolated Wind turbines-Extension to a Wind Turbine Farm	amoura, abdessabour
224	Une comparaison entre la modélisation mathématique et le réseau de neurones pour la prédiction du comportement thermique d'un bassin solaire peu profond	TERFAI, Abdelkrim*
40	Accuracy study of hybrid renewable energy system for a typical rural community in Algeria	Yahiaoui, Adel
59	A PSO MPPT Controller for Grid Connected PV System under Partial Shading Conditions	Douifi, Nadia*
41	Prediction of polymer permeability to Hydrogen from Quantitative Structure–Activity Relationship Modeling	hasnaoui, hanaa*
47	An MPPT Controller based on Cuckoo Search for Residential Wind Energy Conversion System	abbadi, amel*
5	Effect of Rheological parameters on Double-diffusive Natural Convection in a Square Cavity Saturated by a Non-Newtonian Fluid	Lounis, Selma
43	Analytical and Numerical Study of Thermosolutal Convection in Shallow Porous Enclosure Saturated by a Shear-Thinning Fluid	Bensilakhal, Sara

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15	Assessment of the 2016 thermal regulation for algerian building case study: Impact of window type, orientation and opening ratio on energy load using TRNSYS	Meftah, Nabil*
24	Elaboration and characterization of graphene oxide from recycled graphite of graphitic mold	Makhlouf, Mourad*
25	Synthesis and characterization of graphene by recycling graphite rods from batteries	Makhlouf, Mourad*
164	Influence of metallic fiber on the physical-mechanical	RABEHI, Rachid*

	properties of self-consolidating concrete (SCC) made from recycled gravel	
165	Design, implementation and intelligent control of a renewable energy micro power plant	zouheyr, dekali*
178	Study of the treatment of colored water by electrocoagulation using recycled aluminum and iron waste as electrodes	Elhadeuf, Kenza*
188	Comparative Study of two Back-propagation Algorithms founded on Cascade Forward Neural Network used to simultaneous estimation of armature temperature, resistance and speed of brushed DC machine	Mellah, Hacene*
60	Photovoltaic MPPT control based on Crow Search Algorithm	HAMIDIA, fethia*
75	Metaheuristic control of a series multi-cells inverter for grid connected solar PV system based PSO method	Mohamed Redha, SKENDER*
99	Performance Enhancement of Photovoltaic System by Extraction of Heat using Thermoelectric Cooler Devices	Kherkhar, Abdelkrim*

Session 3: Oral Sessions (Video) **16/03/2022 (11h00-12h00)**		
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3	Numerical Study of the Effect of Rib Shape on the Laminar Heat Transfer and Nanofluid Flow in Microchannels	rebhi, redha*
4	The impact of different parameters on CZTS solar cell simulation by SCAPS-1D	belarbi, faten*
11	Application de la technologie solaire dans le traitement des eaux usées contaminées par des effluents textiles	BOUCHAABA, Hafidha*
18	Influence of, doping rate and the nature of the dopant on the efficiency of a PV panel: using the latent heat of paraffin for solar cooling	Lyes, Maifi*
50	Melting of phase change material inside a porous enclosure	Farida, Iachachene*
97	Tribology performance of Nickel based deposit made by the thermal powder spraying.	sarra, BOUDJIT*
225	Etude de l'effet des nanofluides sur les performances thermiques d'un bassin solaire peu profond fonctionnant en cycle fermé et en extraction continue de chaleur	TERFAI, Abdelkrim*
117	Contribution à l'étude de stockage de l'eau chaude sanitaire produit par un capteur solaire	ZIRARI MOUNIR*
141	Heat and mass transfer of micropolar fluid along a vertical cylinder with a radiation effect	alliche, sidahmed*
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Session 1: Oral Sessions (Video) **16/03/2022 (14h30-16h00)**		
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62	Numerical study of the effect of the turbulator insertion in a tubular space	Merdassi, Mustapha*
90	Hydrodynamics and power consumption by two-bladed impellers in agitated vessels	youcef, kamla*
104	Parameter extraction of proton exchange membrane fuel cell models using an enhanced Lévy flight bat algorithm	AOUFI, Ismail*
105	Numerical Analysis of Natural Convection in a Nanofluid Filled Inclined Square Cavity with Sinusoidal Heating on Sidewall	Abdelghani, laouer*
110	Quantum effect study the adsorption of a pollutant on the octahedral surface of kaolinite clay	mostefa, mohammed moh*
114	Evaluation on the potential of Dimethyl ether (DME) as clean alternative fuel by CFD (Sandia flame burner)	Ali, Bouziane B*
126	Numerical simulation of forced convection in a square cavity with openings.	Ferroudja, Nezlioui*
1	Hysteresis Effect on Hydromagnetic Double-Diffusive Convection with Opposed Buoyancy Forces in a Vertical Porous Layer	rebhi, redha*
228	Investigate the impact of nanofluids on the thermal performance of a shallow solar pond working in open cycle and continuous heat extraction.	TERFAI, Abdelkrim*

Session 2: Oral Sessions (Video) **16/03/2022 (14h30-16h00)**		
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133	Contribution to the study of the production of a biofuel; Part 01: Extraction of oil from solid fish waste	Hamza, BOUSBAA*
136	Simulation of MHD mixed Convection Heat Transfer along a vertical cylinder	Saidoune, Fatma Zohra F.Z*
144	Removal of humic acid byLDH fromseawater: modeling, kinetics, equilibriums, thermodynamic and reusability studies.	Dalila, Badis*
154	Naturel Ventilation by climate well for Thermal Comfort in skid house	khemissat, boualem KB*
156	degradation of the crystal violet (CV) dye by the natural iron oxide (NIO)	chaibeddra, dina*
158	Manufacture of squaric acid-based nanomaterials and their use in water treatment	nourelhouda, babaami*
161	Efficient degradation of methylene blue by the photo-Fenton process	SALHI, Meryem*
172	Cooling of heating porous blocks by a non-Newtonian nanofluid under a transversal uniform magnetic field effect	Ibtissem, Hannachi*

175	2D CFD Investigation in Cooling with Nanofluid in Coaxial Heat Exchanger	BRAHIMI, Amine*
189	Three-dimensional modeling of the dispersion of atmospheric pollutants around four aligned blocks compared to the principal axis of the wind using OpenFOAM®	benramoul, lamia *
208	The effect of the Rayleigh number on natural convection in a porous cavity heated non-uniform in the bottom wall	Lilia, SAIDI*

Session 3: Oral Sessions (Video) **16/03/2022 (14h30-16h00)**		
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74	Effect of industrial drawing process on the behavior of structural, mechanical properties of medium-hard steel wire	Ourabi, Amina*
77	Synthesis and characterization of calcined and uncalcined Cu-layered double hydroxide.	Tabti, Hadja Alia*
79	Effect of martensite Morphologies on corrosion in salt water(3.5% NaCl) of X52 Dual Phase Steel	Gougue, Sliman A*
84	Mechanical characterization of a stainless steel coating produced by the thermal arc spraying.	REDOUANE, Zineddine*
89	Characterization and behavior of clusters: Ge13, BGe12, AsGe12, RuGe12 and RhGe12	Benaida, Meriem L*
91	Elaboration and characterization of PMMA/PCL/TiO2 nanocomposite	djahnit, leila*
92	Elaboration and characterization of PCL/Calamine nanocomposite	djahnit, leila*
93	Numerical analysis on the variation of the adhesive damaged area of a corroded plate for different types of adhesive under mechanical loading	leila, belkaddour
95	Effect of adhesive type on the variation of the damaged area of the adhesive of a corroded plate for different forms of patches under mechanical loading	Hayet, Benzineb*
199	Modeling and simulation of a hybrid system (Photovoltaic - Fuel cell)	sadokbouziane, Yazid
221	Investigation of geometrical Effects on the Performance of Solar Chimney Power Plants Using Numerical and Analytical Models	Hadda, Nouar*
223	Simulation analytique, modélisation de réseaux de neurones et validation expérimentale d'un bassin solaire peu profond avec extraction continue de la chaleur.	TERFAI, Abdelkrim*

Session 1: Oral Sessions (Video) **16/03/2022 (16h10-18h00)**		
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103	Effect of Zinc-Phosphate coating on the corrosion resistance of Pearlitic steel wires	Meriem, meyssoune*
106	Investigation of the effect of pressure on elastic modulus of MgO oxide up to 150 GPa by calculations	Benatallah, Nassiba A*
107	Microwave Sol-gel synthesis of Zinc oxide nanoparticules	djahnit, leila*
112	Laves phase MgCu2 alloy for hydrogen storage by Electrothermal Explosion Synthesis: Structural and Magnetic Properties	Hafs, Ali*
118	Review on Antibacterial activity of some Schiff bases and antibiotics complexes	BEN AZIA, Ghania M*
119	Theoretical investigation of electronic, optical and elastic properties of SrTiO3	ELHAMRA, Fatima*
120	Microstructure and properties of electrodeposited zinc coatings	saida, marmi*
121	Microstructure and properties of electrodeposited zinc coatings.	saida, marmi*
20	Développement d'un système de séchage Intelligent	rebhi, redha*
80	Prediction of permeability and tortuosity of Excess Salt Replication foams with Du Plessis Yang model	Amel Hind HASSEIN-BEY
100	CFD modeling of turbulent forced convective heat transfer for Cu-H2O nanolfuid in different porous media	BENNIA, Ayoub*

Session 2: Oral Sessions (Video) **16/03/2022 (16h10-18h00)**		
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122	PANI-derived polymer@Clay-Co nanocomposites: Synthesis, Characterization, Optical and Electrochemical properties	BOUTALEB, Nadia d*
123	Theoretical study of the phase change of MgO in terms of the change in pressure	Yamina, Benkrima*
124	Physical-mechanical characterizations of self-compacting concrete (SCC) with different additions	RABEHI, Rachid*
125	Study of a heterogeneous ternary composite materials by using the mixing laws	Delfouf, Rabah*
127	USE OF ELECTROCHEMICAL METHODS TO ELABORATE ON TITANIUM SURFACE NANOSTRUTURED LAYER COUPLED WITH A COMPACT OXIDE FILM FOR MEDICAL APPLICATIONS	Abderrazak, Djendel*
130	First Principle Study of Structural Electronic and Magnetic Properties of Vanadium doped MgO Oxide	Wissem, Tayeb Halais*

131	Influence of climatic parameters on the evolution of chemical species of washed and unwashed LDPE films, weathered in Ghardaïa(Algeria).	behissa, souad*
137	Numerical prediction of pressure drop of propane for two-phase flow in a horizontal tube	Ramzi, FENOUCHE*
146	First-principles study of structural, electronic structure and optical properties of Y(1-x)Sc(x)N.	Charrouf, Hadjer*
102	Temperature Efficiency Enhancement Based MPC Control Design of Thermoelectric Vaccination Center	Kherkhar, Abdelkrim*

Session 3: Oral Sessions (Video) **16/03/2022 (16h10-18h00)**		
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147	Chloroferrate porous materials for organic polluante elemination from water	khalida, benouna khalida*
151	structural study of glasses based on antimony oxide	BEGHDADI, lina*
153	Impact of different type of materials on the performance of PV module – different cases	REZKI, Mohamed*
155	Accelerated photooxydation study of polyamide 11/ Palygorskite nanocomposites	benobeidallah, Baya*
157	Sodium Molybdate as a Corrosion Inhibitor for Mild Steel in (0.6MNaCl+ 0.01MNa2SO4) Solution	marmi, hayat*
162	Optical and Physical Characterization of the new glasses of oxide of antimony	baya, melik*
168	Experimental and theoretical structural determination and intermolecular charge transfer for a novel 1,2,4-oxadiazole derivative	ZOHRA DOUAA, BENYAHLOU
169	A Predictive New Ternary Full Heusler Multifunctional Alloy : Co2NiGe.	CHAFIA, METAOUI C.M*
170	SYNTHESIS, THEORETICAL AND EXPERIMENTAL INVESTIGATIONS AND ELECTRONIC STUDY OF O-NITROACETANILIDE (O-NAA)	BELHACHEMI Mohammed Hadj Mortada
183	Numerical study of a turbulent air hydrogen diffusion flame in an transient regime using URANS/pPDF Modeling technique	ALLICHE, DMounir*
186	Étude Numérique de l'Écoulement de Pétrole Brute dans les Tubes Capillaires	soufiane, rahal*

Session 1: Oral Sessions (Video) **17/03/2022 (10h30-11h30)**		
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29	STEAM PRODUCTION IMPROVEMENT IN THE PARABOLIC TROUGH COLLECTOR ABSORBER	SidiAli, Amira*
33	Performance analysis of hybrid photovoltaic-thermal solar collector equipped with a compound parabolic concentrator (CPV/T) for Stand-Alone	MOUAICI, Khaled*
36	Optimization of InGaN-based Schottky solar cells and study the effect of defects.	Benslim, Amina*

37	Feasibility Study of a Hybrid PV/Electrolyzer/FC and PV/Reformer/FC Systems for electrification to a residency in Chlef	Dekkiche, Mohamed*
55	Valuation of solar energy for steam hardening of concrete and its effect on mechanical strength and durability	BEN AMMAR, Ben Khadda babkdeba*
69	Experimental and numerical study of solar still integrated with a condenser chamber	khaled, yahia mahammed *
230	Numerical study of a vertical axis wind turbine with a flapped blade	Alaeddine Zereg
229	DC Capacitor Voltages Balancing in Diode- Clamped Threelevel Inverter-Based DSTATCOM	Foudil Benzerafa
200	Nanoparticle shape effects on a nanofluid in solid-state refrigeration systems	KEHILECHE, BRAHIM*
205	Amélioration de l'échange de chaleur d'un échangeur à faisceau tubulaires avec des chicanes à position verticale / orientée	Hafsi, Khebab

Session 2: Oral Sessions (Video) **17/03/2022 (10h30-11h30)**		
Chair: **Dr. Omar LABBADLIA, Dr. Zakaria MADAOUI, Dr. Adel YAHIAOUI**		
ID	**Paper Title**	**Author Name**
72	Parametric study of Ar-NH3 homogenous DBDs at atmospheric pressure, for photovoltaic cell applications	BENMOUSSA, AMAR*
81	Numerical simulation of a small house under the real climate conditions of southern Algeria	benazzouz, afak*
82	Optoelectronic properties of the MZnSb (M = Rb,Cs) layered Zintl phases	nasrallah, hadjer*
83	Thermal analysis of a parabolic trough solar concentrator	DJENANE, Mohamed Salim*
86	Solar photocatalytic removal of pharmaceuticals pollutants using semi-conductors	Aoudjit, farid M*
88	Studying the effectiveness of using nanofluids as the heat transfer fluid for the Solar Parabolic Trough Collector (PTC) in the Ouargla region	intissar, achouri*
209	Analysis of the operating parameters of an active magnetic refrigeration device working near ambient temperature: A mini review	Doudai, Walid
217	THE IMPACT OF HUMIDITY ON THE EFFICIENCY OF A SPIRAL POROUS FIN.	Daradji, Nadia
222	modèlisation d'une pile a membrane échangeuse de proton (PEMFC)	Antar, Aliouat*
226	Influence des Baffles sur le refroidissement des équipements industriels	CHERIET, N
232	Application of biosurfactant produced by bacteria to the pharmaceutical industry	Saadia Bouchher

Session 3: Oral Sessions (Video) **17/03/2022 (10h30-11h30)**		
Chair: **Dr. Abbadi Amel, Dr. Fathia Hamidia**		
ID	**Paper Title**	**Author Name**
98	Evaluation of the ground temperature in different climate conditions of Algeria	OMAR, KETFI*
108	Using Artificial Neural Networks to predict hourly global Solar Radiation for Biskra City, Algeria	ennasser, DAMANI Abd*
109	The contribution of new materials CCV and Alucobond used in architectural facades on energy saving	Youcef, Kamal*
138	Air mass and ground albedo effects on the performance of Perovskite solar cells	Guechi, abla*
139	Effect of the solar irradiation curve on energy storage in phase change materials.	Mecieb, Fatima Zohra*
142	Numerical Investigation of performances of a Solar Tower Implanted in Ain-Salah.	Tewfik, Leftas*
231	CFD analysis of solar chimney power plant	Hadda Nouar
101	Investigation of Cooling Performance for Thermoelectric Refrigerators With Cooled Water Effects Design	Kherkhar, Abdelkrim*
111	Synthesis of biological material for use in the treatment of wastewater: Application to antibiotics effluent	Asmaa, BOUKHELKHAL*
115	L'effet du champ magnétique sur développement des défauts d'occlusion d'air provoquée par l'injection du métal liquide	ZIRARI MOUNIR,

Session 1: Oral Sessions (Video) **17/03/2022 (11h30-13h00)**		
Chair: **Dr. Hamza Houassine, Dr. Mohamed Rezki**		
ID	**Paper Title**	**Author Name**
149	Effect of the thickness of the window and buffer layer on performance of InGaP single junction solar cell	zidani, ikram H*
152	Experimental investigation of the moisture ratio of the orange slices in the forced indirect solar dryer in the cases of without baffles and with baffles	Mohamed SAlah, Teguia*
159	Prediction of monthly sunshine duration using artificial neu-ral networks and support vector machine: A Case Study	GHERABA, Lamia*
174	Improvement of the maximum operating point performance in PV system using genetic algorithms	NADIA, DRIR*
180	Study of the n+ emitter region effect on defects passivation in polysilicon solar cells submitted to hydrogen plasma	Madi, Djamel*
184	Experimental study of the thermal properties of a solar air collector with a new positioning of baffles	Aouissi, Zouhair*

135	Influence of chemical reaction on mhd nanofluid flow, heat and mass transfer over a stretching surface in porous medium	nassima, mami*
140	Predictive study of new materials for photovoltaic cell	Amari, Malika*
143	Effet du climat aride sur la résistance a l'érosion des peintures des véhicules	ZAKARYA, MADAOUI*
163	First-principals characterization of Co2TiGe and Co2TiSn Heusler and Co2TiGe-Co2TiSn sandwich.	benrekia, ahmed*

Session 2: Oral Sessions (Video) **17/03/2022 (11h30-13h00)**		
Chair: **Prof. Abedhalim Tlemçani, Dr. Noureddine Henini**		
ID	**Paper Title**	**Author Name**
191	The ideal case study for rural electrification for stand-alone hybrid power source	sahraoui, hamza*
192	Annual Simulation of two different Solar Concentrating Technologies Integrated into a Combined Cycle	Amani, Madjid*
203	Experimental and numerical study of the performance of a solar still	Adel, DELIOU
204	Novel High Power Solar Heater	Diaf, Abderrahmane;
206	Maximum Power Point Tracking Using Fuzzy Logic Control for Photovoltaic Systems: Comparative Study	Belaidi, Rachid*
207	Experimental investigation of thermal performances of an integrated storage solar water heater	Hichem, Bendjebbas*
211	Schrödinger equation for a double barriers trapezoidal in potential and mass	Langueur, Omar Omar*
213	Improvement of global maximum operating point performance using genetic algorithms	Drir, Nadia
214	The use of local biomass to develop new insulating composite materials	Almi, Kenza*

Session 3: Oral Sessions (Video) **17/03/2022 (11h30-13h00)**		
Chair: **Dr. Yahia Belaissa, Dr. Sofiane Rehal, Dr. Nasreddine Amoura**		
ID	**Paper Title**	**Author Name**
2	Numerical Study of the Thermosolutal Convection in a 2D Tilted Square Cavity Submitted to Cross Gradients of Temperature and Concentration	rebhi, redha*
7	Numerical Study of Hydrogen Production from Dimethyl Ether Steam Reforming	ABAIDI, Abou houraira*
27	WATER PURIFICATION BY NANOCOMPOSITE PHOTOCATALYZERS	DERKAOUI , Khaled*
45	Parametric Study Of Solid Desiccant Cooling Plant Coupled To Flat Solar Collectors Field	kacimi, yasmine*
46	Extraction of propanol from aqueous solution by 1, 8-cineole at T= 291.15 K: Experiments and NRTL model	mohamed, khechai*
48	Two meta-heuristic approaches for extracting model parameters of PEM fuel cells	ABDI, Hamid*
116	La couche d'oxyde et la morphologie de l'étalement pendant la formation des lamelles lors de l'impact	ZIRARI MOUNIR

	oblique d'une goutte d'aluminium	
134	Effect of MHD on Nanofluid Flow, Heat and Mass Transfer over a Stretching Surface Embedded in a Porous Medium	nassima, mami*

Session 1: Oral Sessions (Video) **17/03/2022 (14h30-16h00)**		
Chair: **Dr. Zineb Fergani, Dr. Samira Ferhat, Dr. Kermet-Said Hadjira**		
ID	**Paper Title**	**Author Name**
10	Etude des caractéristiques physico-chimiques et optiques d'un nanomatériau semi conducteur synthétisé par voie humide, et leur application comme photo-catalyseur dans le traitement des eaux usées	BOUCHAABA, Hafidha*
16	Synthesis and investigation of structural, microstructural and optical properties of Mg diluted ZnO thin films	Roguai, Sabrina*
17	Investigations of Addition of Low Fractions of Nanocomposite Copolymer in Tensile Strength of Mortar	BOUALLA, Nabila*
21	Hydromagnetic Free Convection of a Nanofluid Saturated Square Pourous Medium	Alilat, Djamel
22	In Situ Study of the Reaction Diffusion on Ni-Si System	Gamra, Tellouche M*
26	Effect of milling parameters on crystallite size of Ni/Al2O3 synthesized by mechanical alloying technique.	BERRAMDAN, Nor-El-Houda
167	Nuclear Power for Materials Characterizations of Sustainable Development and Renewable Energies .	CHAFIA, METAOUI C.M*
177	Properties of Self-Compacting Sand Concrete made with Marble Waste	BOUKHELKHAL, Djamila*

Session 2: Oral Sessions (Video) **17/03/2022 (14h30-16h00)**		
Chair: **Dr. Abdelali Boukaoud, Dr. Sebbar Djamel, Dr. Dehbaoui Mourad**		
ID	**Paper Title**	**Author Name**
31	Influence of heat treatments on the mechanical properties of a manganese steel used in the manufacture of grinding jaws.	Salim, KHIMA*
32	Optimisation structurale et l'étude du comportement mécanique de l'acier S355J2+N.	Sarra, ZIOUAL*
38	Modeling of pure iron diffusion phenomena and the thermodynamics of steels	LAID, Sarra*
39	New insights in the copper oxides electrodeposition from Ionic liquids and Deep Eutectic Solvents	ZAIDI, Nadia*
53	Microstructural Characterization of Plasma Sprayed Ni-5wt.%Al coatings	CHOUIT, Fairouz*
54	Crystal and electronic structure properties of double perovskite	wafa, guenez*
185	The influence of low erbium doping concentration on the properties of MgO nanoparticles prepared by sol-gel method	Ameur, Imene*

187	Inhibiting evaluation of poly(acrylamide-co-methyl methacrylate)	Benhachem, Fatima Zahra*
193	Mechanical properties of date leaflets fibers reinforced polystyrene composites	HOUSSAM EDDINE, BENCHOUIA*
210	Instrumental characterization of Construction Sand by XRD, FTIR, Particle Size and SEM	BENCHAA, Sayhia*

Session 3: Oral Sessions (Video) **17/03/2022 (14h30-16h00)**		
Chair: **Dr. Ilyes IRKI, Dr. Lazazi Menaa**		
ID	**Paper Title**	**Author Name**
57	First-principles calculations of electronic and magnetic properties of BeO doped with X (Gd, Tb and Eu)	Guendouz, Atika*
58	The Williamson-Hall analysis was used to estimate lattice strain in nanometer sized ZnO particles.	abdelghani, lakel*
64	Numerical study for characterization of the physical properties of rails / wheels manufactured ER6 and ER7 in railway applications	chiba, el hocine*
65	Study and realization of a supercapacitor based on nanostructures.	Khadidja, Boukhouidem*
70	Probing the structural, electronic and magnetic properties of ternary Heusler alloys Ni2MnZ (Z = Si, Al): DFT calculation	Benichou, Boucif*
71	Design of mesoporous nanoparticles from micellar templates	ZINE EDDINE, DAIKH*
171	Elaboration and characterization of Polyamide 11/graphene oxide nanocomposites	OULMOU, Fadila*
173	Sodium Molybdate as a Corrosion Inhibitor for Mild Steel in (0.6MNaCl+ 0.01MNa2SO4) Solution.	marmi, hayat*
181	Temperature performance of DG-FinFET device by using high-k material gate	Nass, Bourah 08*
182	Optical and electrical characterization of CuO thin films doped Al and developed by the Sol Gel (Spin Coating) method	Radouane, Daira*

Session 1: Oral Sessions (Video) **17/03/2022 (16h30-17h00)**		
Chair: **Dr. Mohamed GUENDOUZ , Dr. BOUKHELKHAL, Djamila**		
ID	**Paper Title**	**Author Name**
179	Study of the physical and mechanical characteristics of fluid sand concrete containing recycled concrete aggregates	BOUKHELKHAL, Djamila*
216	Vibrational response of functionally graded monolayer graphene reinforced nanocomposite laminated plates in thermal environments	chiker, yasser
218	Modelling of the total dissolved solids (TDS) artificial neural networks in Médéa region	Tahraoui, Hicham
219	Schrödinger equation for a double barriers trapezoidal in potential and mass	langueur, Omar
220	Electronic and Magnetocaloric Effect of Ni2MnSb: Monte-Carlo and ab-initio calculations	Abdeldjalil, Ghediri*

227	Arid climate effect on erosion resistance of vehicle painting	ZAKARYA, MADAOUI*
85	Energy levels of heterostructures in electromagnetic fields	Houhou, Oussama*
87	Numerical study EF/VOF of the influence of the substrate oxide layer on the thermal and dynamic behavior of the lamella formation.	Souad TAHAR
14	Valorization of Industrials Waste in Eco-Friendly Concrete	GUENDOUZ, Mohamed
236	Importance des énergies renouvelables en Algérie : Les ressources et efficacités	Mohamed Boukelthoum

Session 2: Oral Sessions (Video) **17/03/2022 (16h30-17h00)**		
Chair: **Dr. Mohamed Ahmed Amamr, Dr. Ahmed Benrekia**		
ID	**Paper Title**	**Author Name**
94	Characterization of a new bio-waste	meriem, turkman*
13	Recycling of Roof Tile Waste Aggregate in Flowable Sand Concrete	GUENDOUZ, Mohamed
42	From the crystal structure to the isolated molecule: structure, intra-molecular proton transfer and spectroscopy of DL-tyrosine	Boukaoud, Abdelali*
56	Semiconductor quantum dots in high magnetic fields: the composite fermion model	mohamed, ahmed ammar*
61	Physical properties of the half- Heusler HfCoSb and ZrCoSb Compounds	Radjai, Missoum*
76	Numerical Investigation of Current Density in GaAs/AlxGa1-xAsDouble Barrier on Resonant Tunneling Superlattices	Sebbar, Djamel
23	Effect of the degree of saturation of recycled sands on the mechanical properties of mortars	Settari, Chafika*
237	Valorisation de biomasse d'origine des déchets des dates dans la production de l'alcool médical	Younes chiba
239	Contribution à l'étude d'un système de stockage avec changement de phase de l'énergie thermique solaire	Ragai soumia
240	Contribution à l'étude d'un système de stockage de l'énergie dans un panneau solaire avec changement de phase	Abdelli meskerrouh

Session 3: Oral Sessions (Video) **17/03/2022 (16h30-17h00)**		
Chair: **Dr Abdelhafid Moualdia, Dr. Abdelkader Morsli, Prof. Karim Sebaa**		
ID	**Paper Title**	**Author Name**
128	Etude des proprietes physico-chimiques d'une huile lubrifiante (naftilia sae 40) d'un moteur a essence	Amina, Halaimi
129	Ethernet Control of an induction motor via a PLC using LabVIEW	farouk, bettache*
132	simulation numerique d'un nano refriferant circulant dans un echangeur de chaleur tubulaire	Omar, labbadlia*

194	Intelligent Household Waste Collection System based on Internet of Things	BENSARI, Lamia
195	Intelligent Drinking Water Meter based on Internet of Things	Bouhedda, Mounir *
198	Adaptive Fuzzy PI Controller based Multilevel DSTATCOM for Voltage Regulation	Benzerafa, Foudil*
201	Low Power Context Selection and Modeling FPGA Implementation in HEVC CABAC Encoder	menasri, ouahiba*
202	A terminal sliding mode for VSC-HVDC system	RANDA, BABOUCHE*
235	Effect of temperature on the characteristics of rectangular patch antennas	Bakhti Mimene
234	Contribution à l'étude d'un échangeur de chaleur géothermique air-sol	Noureddine Benaouda
238	Production de l'alcool chirurgical à partir de la biomasse : cas des dates algériennes	Younes Chiba