



2nd INTERNATIONAL CONFERENCE

ON RENEWABLE ENERGY APPLICATIONS AND MATERIALS

**JUNE 22-24, 2022
CASABLANCA, MOROCCO**



**ECOLE NORMALE SUPERIEURE DE CASABLANCA
MOROCCO**



<https://icream-22.sciencesconf.org/>
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Cérémonie d'Hommage aux Enseignants chercheurs retraités fondateurs de la Société Marocaine de Physique Statistique et du Pôle MACOMS

Chères et Chers collègues,

J'ai l'honneur et le plaisir de vous inviter à la cérémonie d'hommage aux Enseignants chercheurs retraités fondateurs de la Société Marocaine de Physique Statistique et du Pôle Matière Condensée et Modélisation des Systèmes MACOMS. Cette cérémonie aura lieu lors de la séance d'ouverture de la Conférence Internationale sur les énergies renouvelables, matériaux et applications " ICREAM'22, à l'ENS de Casablanca le mercredi 22 juin 2022 à 9h.

Pr. Dennoun SAIFAOU

22 juin 2022

8:30 – 9:30	Registration and Welcome Reception (Hall)
9:30 – 10:30	Chairman: Pr. BIMAGHRA Itto (Amphitheater II) Oepning cerimony
	Chairman: Pr. BOUGHALEB Yahia (Amphitheater II) Hommage aux retraités
10:30 – 11:00	Coffee Break (Hall) + (Poster session)
11:00 – 12:00	Chairman: Pr. El BOUARI Abdeslam (Amphitheater II)
	Pr. TRAN Quoc Tuan
	Pr. NUNZI Jean-Michel
12:00 – 13:00	Chairman : Pr. SAIFAOUI Dennoun (Amphitheater II)
	Pr. TARFAOUI Mostapha
	Dr. ALOUANI Abdelkader

13:00 – 14:30	Lunch break (Hall)					
14:30 – 15:00	Chairman : Pr. FARAJI Mustapha (Amphitheater II)					
	Pr. BENNOUNA Amin					
15:00 – 16:15	Session 1: Chairman: Pr. TARFAOUI Mostapha (Amphitheater I) (Composite Materials)			Session 2: Chairman: Pr. NUNZI Jean-Michel (Amphitheater II) (Materials for RES)		
	ID	Full name	Title	ID	Full name	Title
	405522	Azouz Anas	Correlation between nuclear quality detection and contacts structure for a pixelized monolithic matrix CdTe	407820	Ait Said Lyazid	Kinetic Resolution of diastereomeric mixture cis- and trans-Limonene Epoxide by (R)-N-methyl-($\hat{I}\pm$ -methyl-benzyl) amine and (R)-N-($\hat{I}\pm$ -methylbenzyl) ethyl carbamate
	407079	Belhaouzi Abdessamad	Numerical modelling of the effective thermal conductivity of composite material reinforced by plastic waste.	408021	Assal Mohamed	TITANATE XEROGELS-COTTON MATERIALS AS THERMAL INSULATOR
	406127	Boutaib Firdaous	Production of valuable energy carriers by the electrocatalytic reduction of CO2 using Cu@GO composite	407603	Bahar Jihane	Characterization of p-type semiconductor Cu2CoO3 layers elaborated by electrodeposition for solar cells
	405290	El Bahi	Influence of void presence on the elastic	406964	Bouiri El	Incorporation of inorganic nanofillers into the

	Amine	behavior of carbon nanotube reinforced polymer bio composites		Mahdi	PVDF-HFP matrix to improve their piezoelectric properties	
	406227 El Fadlaoui Dounia	A Finite Element Model of Multifunctional Composites for Energy Harvesting		407808 El Ghadoui Mohamed	A hybrid of back propagation neural network and genetic algorithm for optimization the energy consumption in injection molding process	
16:15 – 16:30	Coffee break (Hall)					
16:30 – 18:00	Session1 : Chairman: Pr. EL MOUDEN Mahmoud (Amphitheater I) (Materials for RES)		Session 2: Chairman: Pr. BOULEZHAR Abdelkader (Amphitheater II) (Optics and Plasma)			
	ID	Full name	Title	ID	Full name	Title
	407035	El Haimer Chaïmaa	Elaboration and characterization of Bismuth selenide Bi2Se3 layer for capacitors application	406969	Abdelmoumen Souad	Alteration of dioptric environments under the influence heat in highly sunny region
	407019	Ennabely Mohamed	Comparative study of methyl orange dye removal by three types of biological activated carbons	406940	El Mechate Bouchaib	Effect of the angular spectrum rotation repetitions of nondiffracting beams propagating through turbulent atmosphere
	418336	Fakhreddine Rachid	Structure infrared and Raman spectroscopic studies of the new Ba(Sb0.5M0.5)(PO4)2 (M= Sc, In and Yb) yavapaiite compounds series	407014	Elmouaddine Manal	A theoretical model of double-cladding erbium-doped fiber amplifier

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408026	Hinna Maha	Taguchi method application to optimize elaboration parameters of tin dioxide thin films using spray pyrolysis in gas sensor applications	408922	Grari Meryem	The effect of the pressure, the voltage and the frequency on the evolution of the plasma discharge for Photovoltaic application: A two-dimensional simulation study
407539	Moujoud Zineb	Characterization of untreated and treated natural fibers as reinforcement additives for thermal insulating building materials	406961	Jelloul Fatiha	The impact of the environnement on myopic evolution and brake tools
407012	Ouedrhiri Abdessamad	Characterization of porous activated carbon elaborated from Argan nut shells by the thermal decomposition method	407819	Lazrek Mohamed	Propagation properties of partially coherent vortex Hermite-cosine-hyperbolic-Gaussian beams in turbulent atmosphere

23 June 2022

9:00 – 9:30	Registration (Hall)	
9:00 – 10:00	Chairman: Pr. TAQI Mohamed	
	(Amphitheater II)	
	Pr. NAIMI Youssef	
	Pr. SAIFAOUI Dennoun	
10:00 -- 10:15	Coffee Break (Hall)	
10:15 -- 10:55	Session1 :	Session 2:
	Chairman: Pr. NAIMI Youssef	Chairman: Pr. BIMAGHRA Itto

(Amphitheater I)			(Amphitheater II)		
Pr. FARAJI Mustapha			Pr. BOULEZHAR Abdelkader		
Pr. NACHTANE Mourad			Pr. EL MOZNINE Reddad		
Session1 : Chairman: Pr. ELGHAZI Youssef (Amphitheater I) (Hydrogen & Fuel Cells, Li-ion Batteries)			Session 2: Chairman: Pr. LAKRAD Faouzi (Amphitheater II) (Renewable Energy Systems)		
ID	Full name	Title	ID	Full name	Title
408006	Abdelrhafor Imane	First principles study of the electronic properties and diffusion mechanism of Li ions in LiCoO ₂	406960	Essaket Soukaina	Numerical Simulation of Piezoelectric Magnetostrictive Smart Composite for Energy Harvesting
406872	Adeli Khaoula	Stress and deformation effects in a green ammonia production Reactor	418407	Hasnaa Jenkal	The Improvement of Doubly Fed Induction Generator controlling by the Backstepping based on Wind Energy Conversion System
405967	Ait Laasri Imad	Investigation of the impact of phase change materials at different building volumes in a semi-arid climate	407016	Jbilou Safia	Modelling and simulation of a hybrid dryer (solar energy and biomass) for peppers
405840	Ait Ousaleh Hanane	Experimental investigation of new potential mixed oxides for green hydrogen production via thermochemical water-splitting cycle	407688	Kasseh Youssef	The energy management system according to ISO 50001:2018 a performance lever for an efficient and sustainable management

					of public lighting in Moroccan cities
	405014	Jaouide Essaid	Dynamic modeling and control of Quasi-Z-Source Inverter for photovoltaic power system	417405	Laabid Abdelkrim Techno-economic evaluation of PV/diesel/battery hybrid system supply Mobil health clinic units.
	406950	Nachit Ibrahim	NUMERICAL SIMULATION OF THE PROTON EXCHANGE MEMBRANE FUEL CELL	406628	Mahir Maha An investigation of a Hybrid Building-integrated Anaerobic Digestion/PV and wind System towards 100% renewable energy microgrid in Morocco: cases study
13:00 – 14:30	Lunch break (Hall)				
14:30 – 15:30	Chairman : Pr. TRAN Quoc Tuan (Amphitheater II)				
	Dr. ECH-CHARQAOUY Sidi Salah				
15:30 – 16:30	Session1 : Chairman: Pr. TANAN Omar (Amphitheater I) (Renewable Energy Systems)			Session 2: Chairman: Pr. FARAJI Mustapha (Amphitheater II) (Thermal Energy)	
	ID	Full name	Title	ID	Full name Title
	407965	Bellar Dounia	Coupling of Distillation and Reverse Osmosis for seawater Desalination using Renewable Energy in Casablanca	407949	Amlal Wadi ADI method for solving convective flow in a square cavity: review of different empirical models

	406449	Aboudaoud Souad	CFD-simulation of gas-solid fluidized bed reactor hydrodynamics	406933	Berra El Mehdi	Numerical simulation of natural convection in a cavity heated by a heat source using the Lattice Boltzmann Method
	400249	Benzohra Omar	Forecasting electricity demand in Morocco in 2040: Scenario and fallout	404065	Chakir Asmae	A three-dimensional steady-state numerical model of thermoelectric cooler between two plates
	406195	Bourzgui Omama	CNTs a new technology in water desalination process	407950	ELÔRCH Mohamed	The Effect of Coupling Radiation-Natural Convection Inside Square Cavity Filled With Nanofluid: Fins Effect
16:30 – 16:45	Coffee break (Hall)					
16:45 – 18:30	Session1 : Chairman: Pr. EL MOZNINE Reddad (Amphitheater I) (Desalination and Advanced Water Treatment)			Session 2: Chairman: Pr. MONKADE Mohammed (Amphitheater II) (Energy Storage)		
	ID	Full name	Title	ID	Full name	Title
	403818	Ait Lahcen Jaouad	Impact of nanoparticles on the desalination phenomena by using Langevin dynamics model	418078	Elmostafa Achbab	Application of GIS and virtual reality tools to locate, size, design and evaluate a "Wind-Solar photovoltaic" Hybrid System with a power of 20 MW: Case of Dakhla city –Morocco-
	406203	Bouhaj	An easy and inexpensive process to elaborate	406938	Emrani Anisa	Deployment of Gravity Energy Storage

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	Youness	cellulosic aerogel from cotton waste			System in Abandoned Mine Shafts: A Case Study in Morocco
403438	El Hana Ahmed	The permeability effect on the diffusion and correlation process of fluid flow in porous media	404082	Jamoudi Sbai Sara	Synthesis of CuZnO nanoparticles: electrical properties and application
403960	Ezaier Yassine	Significance of deposition and diffusion retention on the performance of the composite membrane	404719	Meliani Meryem	Energy Storage of a Microgrid Modelisation on MATLAB
406881	Lakouairi Jihad	Numerical simulation of electrostatic separation of heavy metal ions from aqueous solution	415401	Oudaoui Kenza	Thermal discharging performance of heat exchanger filled with multiple phase change material
406228	Taroual Khadija	Nanofiltration using graphene	404066	Saissi Hassani Meriem	Heat transfer and fluid flow characteristics in a heat exchanger tube with twisted inserts
407271	Zbaidi Mourad	Prototype to preheat the water used by traditional hammams	403452	Elghandouri Ihssane	Computational study of a heat sink with curved fins in natural and forced convection.

24 juin 2022

9:00 – 10:00	Chairman: Pr. BIMAGHRA Itto (Amphitheater II)				
	Pr. BENYOUSSEF Abdelilah				

	Pr. TAHIRI Mohamed				
10:00 – 10:15	Coffee Break (Hall)				
	Session1 : Chairman: Pr. EL MOUDEN Mahmoud (Amphitheater I) (Materials for RES)			Session2 : Chairman: Pr. TAHIRI Mohamed (Amphitheater II) (Materials for RES & Renewable Energy)	
	ID	Full name	Title	ID	Full name Title
	407716	Sahlaoui Ahmed	Comparative study of nucleation and growth mechanism of nickel electrodeposited on ITO substrate in nitrate and chloride electrolytes	405596	Benali Hajar Computational analysis of CH ₃ NH ₃ PbI ₃ Perovskite Solar Cells by using Magnesium Doped ZnO as an Electron transport layer
10:15 – 11:45	407125	Zniker Houcine	Comparative study of quasi-static indentation (QSI) behavior of GFRP laminated and PVC-foam sandwich composites.	405245	Najim Abdessamad Experimental investigation of zinc concentration on structural, morphological, and optical properties of ZnS thin films using the spray pyrolysis technique
	407426	Aynaou Aziz	Effect of counter-ion on electrochemical performances of polyaniline electrodeposited on ITO substrate	406932	Nouri Youssef Theoretical and experimental study of sprayed SnS absorber material for solar cells applications
	405631	Said Elouahbi	Magneto-caloric properties of Fe ₂₈ Y ₅₂ B ₂₀ alloy	407875	Youbi Boubaker Electrodeposition of binary semiconductor ZnTe thin films for photovoltaic applications

	406211	Amallah Layla	Numerical Study of Fluid intrusion and Extrusion Process in Porous Materials	408059	Moussaoui Mohammed Amine	Modeling shallow turbulent flows: Towards a new subgrid-scale model using a transport equation of subgrid kinetic energy of the 2D fluctuations
	407209	Boudounit Hicham	Structural Analysis of Offshore Wind Turbine under Impact using Smoothed Particle Hydrodynamic	405696	Elidrysy Anouar	Thermodynamic properties and magnetocaloric effect of ferrimagnetic mixed Ising model (7/2, 3/2) with Monte Carlo simulation
11:45 – 13:30	Session1 : Chairman:Pr. SAIFAoui Dennoun (Amphitheater I) (Artificial Intelligence and Machine Learning)			Session2 : Chairman: Pr. FARAJI Mustapha (Amphitheater II) (Renewable Energy Systems et Thermal Energy)		
	ID	Full name	Title	ID	Full name	Title
	406210	Akroud Touria	A comparative study of quantum entanglement and quantum Fisher information in transverse field XY model	408007	Harchaoui Mohamed	Study Of PCM Foam Composite Behaviour : Numerical Modeling
	407660	El Ghadouï Mohamed	A hybrid of back propagation neural network and genetic algorithm for optimization the energy consumption in injection molding process	404237	Jbira Najwa	A state-of-the art review on industrial process simulation software
	418149	Essakhi Abdelaziz	Image recognition by using contour and region shape descriptors	406936	Nouri Redouane	Numerical study of natural convection in square cavities filled with power-law non-

				Newtonian thermo-dependent fluids and subjected to localized heat source	
407659	Fatima Ched	A Deep Learning-based Approach for Regeneration a GUI of simulations in Virtual Electronics Laboratories	404139	Sakkay Mosab	CFD analysis of humid air cooling outside horizontal tube under free convection conditions
408028	Herbaz Nourdine	Real-Time Recognition for interpretation of Moroccan Sign Language in Deaf-Mutes using Convolutional Neural Network	406771	Tizakast Youssef	Analytical and Numerical Study of Natural, Mixed, and Forced Convective Heat and Mass Transfer in a Lid-Driven Rectangular Cavity Filled with Newtonian Fluid: Effect of Lewis Number
404117	Toumzine Ibtissam	The internet of things Smart management and control system for monitoring energy microgrids: Casablanca-Morocco	405292	Aissi Tarik	Evaluation of losses of DC/DC converter in wind energy conversion system using MPPT control strategy
407687	El Majaty Salma	What Results of the application of an energy management system based on iso 50001:2008 in a Water Station Pre-Treatment - case of Morocco	406951	Ech-Charqaouy Amjad	Prediction of the production of a photovoltaic solar power plant by the BIG data tool

Session3 :**Chairman:Pr. El BOUARI Abdeslam****(Amphitheater III) (Renewable Energy Systems)**

10:15 – 11:45

ID**Full name****Title**

	406057	Hariti Yassine	Scaling Law of Permeability and Porosity for Fluid Transport Phenomena in Porous materials
	405311	Abdelfettah Lahbib	Critical transitions of spin - 1/2 four-leg nanotube Ising Model with Monte Carlo Simulation
	408053	Nefraoui Amal	Energy management strategy of an electric vehicle charging station powered by photovoltaic power
	406946	Salhane Ilham	Ambient energy recovery for the optimization of the autonomy of wireless communicating objects
	406949	Salhi Ouassila	Solar flux mitigation due to aerosols Â« fine and coarse mode Â» in Barcelona of the 2007-2020 period
	408391	Souktani Mohamed Amine	Realization of a tidal turbine prototype for the purpose of supplying a fishing district with electricity
	Session3 : Chairman:Pr. El BOUARI Abdeslam (Amphitheater III) (Renewable Energy Systems)		
	ID	Full name	Title
11:45—13:30	407788	Youssef Lghazi	Optical and structural properties of ZnO-Bi codeposited on ITO substrat
	403560	Latif Abdelaziz	Morphological properties of the retentate deposit particles on membrane desalination
	405859	Louardi Chaymae	Transparent conducting properties of Ni doped SnO2 thin films prepared by spray pyrolysis technique.
	406365	Sallam Sara	Feasibility of the direct steam generation in parabolic trough solar collectors under climatic conditions of Ouarzazate region
	408047	Ettami Said	Potential of Moroccan renewable energy
		ELGHAOUTI Chahid	Dielectric and electric properties as a tool to detecting heavy metal contamination in wastewater and soils

407803	halima benzehoua	The fiber coupling efficiency of Gaussian Schell-model beams through maritime environment
	Saida Zouhair	Mean-field approximation investigation of semi-infinite mixed spins
	NAIMA Nossir	Propagation of Whittaker-Gaussian beams in a gradient-index medium
419165	ANAS EL KASSIMY	Hydrogen Fuel Cell Vehicles

13:30 – 15:30

Lunch break (Hall)

Poster Participant : June, 22- 2022

406962	Abouelaoualim Driss	Structural, electronic and optical properties of SrZrS ₃ perovskite: a first-principles investigation
407809	Ahmidi Abdelali	Scattering of Hermite-Gaussian beams by spherical particle in the generalized Lorenz-Mie theory through the Laguerre-Gaussian expansion and angular spectrum decomposition method
405908	Ait Ousaleh Hanane	Exploring Iron-Based Spinel materials for high-temperature thermochemical energy storage
406617	Aqdim Sara	Structural and dissolution investigations of boro-phosphate glass
406745	Arkame Youssef	Potential use of dark clay-rich materials in ceramics: Elaboration, classification and physicochemical characterization study

406204	Bakassi Imane	Effect of impurity on optical properties of core/shell CdS/CdSe type-II quantum dot for photovoltaic application
418735	Boudounit Hicham	NUMERICAL SIMULATION OF THE MECHANICAL PERFORMANCES OF A COMPOSITE WIND TURBINE BLADE
407635	Boulahia Chaimae	Development Methodology of Semantic ETL for Scientific Data Analysis with Machine Learning and Big Data
406945	Chaimae Hamdouchi	Towards the exploration of a Nasicon-Type anode material for Lithium-Ion-Batteries
406620	Chakir Adil	Structural investigation and dielectric properties
418698	Eddahar Manal	Offsetting natural gas used to make bricks with renewable energy
407976	El Ghazi Asmae	Toward a Smart Mobile WSN using Machine Learning
406732	Harrati Achraf	Effect of slag addition and sintering temperature on the technological properties of basic ceramics made from Moroccan dolomite
403454	Moushi Salma	Correlation process of fluid intrusion in porous media: Langevin Dynamics
406417	Nabil Hassan	Effect of a Turbulent Jet Engine Exhaust on Some Laser Beams
419169	Rkia Zari	Characterization and treatment of tannery wastewater by infiltration percolation process using coal fly ash and bottom ash.
405309	Sougrati Mustapha	Next-Nearest Neighbor Interactions Effect In Spins - $\hat{A}^{1/2}$ Square Lattice

418146	Zari Rkia	valorization of sludge residue from tannery wastewater treatment into cement industry
406954	Zahot Omar	A systematic investigation of mechanical properties and deformation in ferroelectric ceramics of Lithium-Tantalate materials
407013	Ali NASSIRI	Analysis and design of different architectures for Erbium and Erbium-Ytterbium co-doped Seven-core fiber Amplifier

