

The Polydisciplinary Faculty of Nador organises the First International Conference on Plasmas, Materials, and Energy (ICPME'25)

Conference Program Schedule



Thursday-Friday
22nd - 23rd May, 2025



CMC - Nador, Morocco



For more information, please visit
icpme.sciencesconf.org



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1st International Conference on Plasmas, Materials and Energy (ICPME'2025)
Program Overview

Day 1 : May 22, 2025		
08:30 - 09:30	Reception of participants and Registration	
09:30 - 10:00	Openning Ceremony	
10:00 - 10:30	Coffee Break	
Speaker Session 1		
Chairs : Pr. Hassan Chatei & Pr. Ismael Driouch		
10:30 - 11:15	Speaker 1 : Pr. Nofel Merbahi " Low-Temperature Plasma Technology For Biomedical Application " LAPLACE, Paul Sabatier University, Toulouse, France.	
11:15 - 12:00	Speaker 2 : Pr. Mustapha Karkri " Innovations In the Thermal Management of Electric Vehicle Batteries: Paving the Way for New Autonomy " CERTES, Paris-Est Créteil University, Paris, France.	
Chairs : Pr. Abdelkader Doudou & Pr. Karim Oukouiss		
12:00 - 12:45	Speaker 3 : Pr. Mahamadou Abdou Tankari " Evaluation of Building Energy Efficiency Based on an IOT Sensor Network " CERTES, Paris-Est Créteil University, Paris, France.	
13:00 - 15:00	LUNCH	
Communication Session		
Session 1 : Plasma and applications (Room 1)		
Chairs : Pr. Nofel Merbahi, Pr. Youssef Ait Yassine, Pr. Moussa EL Yahyaoui, Pr. Omar EL Ghani		
15:00 - 15:15	“Comparative study between static and dynamic air and the effect of humidity on corona discharge efficiency at atmospheric pressure” <u>Abahazem Alyen</u> , Saber Karim, Achraf Hani, Nofel Merbahi	ID : 630675
15:15 - 15:30	“Les phénomènes radiatifs dans les plasmas induits par laser” <u>Jalloul Trabelsi</u>	ID : 648667

15:30 - 15:45	“Effects of Cold Atmospheric Plasma Treatment on Black Tea Kombucha Fermentation” <u>Nahed Yousfi</u>, Nofel Merbahi, Jalloul Bouajila, Djakaou Iya-Sou, Patricia Taillandier, Mohamed Debouba, LAPLACE, Université Toulouse III, Paul Sabatier, Toulouse, France.	ID : 620618
15:45 - 16:00	“Plasmonic-Enhanced ZnO/ZnS/GaP Solar Cells: Harnessing Surface Plasmon Polaritons for Superior Light Absorption and Energy Conversion:A Numerical Analysis” <u>Younes Azouz</u>, Ossama El Abouti	ID : 630594
16:00 - 16:15	“Impact of Negative Ions on the Magnetized Complex Plasma Sheath with Superextensive Electrons” <u>Zakariae ELjabiri</u>, Omar EL Ghani, Ismail Driouch	ID : 630979
16:15 - 16:30	“Electrically Tunable Plasma-Based Reflective Surfaces for 5G and 6G Applications” <u>Ayoub EL Jaouhari</u>, Moussa EL Yahyaoui, Majid Rochdi, Morad EL Kaouini	ID : 637800
16:30 - 16:45	“Theoretical and Numerical Study of the Sheath in a Non-Extensive Electropositive Plasma with Secondary Electron Emission and Thermal Ions” <u>Zakariyae El Ankouri</u>, Mohamed El Bojaddaini, Morad El Kaouini, Hassan Chatei	ID : 647328
16:45 - 17:00	“Characteristics of a Magnetized Radio Frequency Sheath with Super-Extensive Electrons” <u>Mohamed Bouzraa</u>, Morad El Kaouini, Abdelhak Missaoui, Mohamed El Bojaddaini, Hassan Chatei	ID : 646814
17:00 - 17:15	“Influence of Ionization Frequency and Thermal Ions on Bohm Velocity in a Magnetized Plasma with Two-Temperature Nonextensive Electrons” <u>Oussama Jdaini</u>, Abdelhak Missaoui, Mohamed El Bojaddaini, Morad El Kaouini, Hassan Chatei	ID : 647409
Session 2 : Material Science (Room 2)		
Chairs : Pr. Farid Falyouni, Pr. Ossama EL Abouti, Pr. Amine EL FATHI, Jamal Barkani		
15:00 - 15:15	“Angle-dependent topological interface states in one-dimensional photonic crystal” <u>Afaf Bouzidi</u>, Mohamed Elaoui, Soufyane Khattou, Madiha Amrani, El Houssaine El Boudouti	ID : 631018

15:15 - 15:30	“Ab-initio investigation of isomeric structures of B₂O₃. Kinetic and thermodynamic study of the transformation of boric oxide to metaboric acid HBO₂. Complexation of HBO₂: from dimer to hexamer” <u>Neila Terzi</u>	ID : 648668
15:30 - 15:45	“Enhanced Dielectric and Nonlinear Properties of Doped CaCu₃Ti₄O₁₂ Ceramics for High-Efficiency Energy Storage Applications” <u>Ilyas Jalafi</u>, Fatima Chaou, Mohamed Chokri, karim Chourti, El Hassan Yahakoub, Amine Bendahhou, Soufian El Barkany, Mohamed Abou-Salama	ID : 621229
15:45 - 16:00	“Plasmon-Enhanced Electrocatalysis in Nanohole Grating Arrays of Copper” <u>Madiha Amrani</u>, Mohamed El Ghafiani, Gaëtan Lévêque, Adnane Noual, yan pennec, El Houssaine El Boudouti, Rabah Boukherroub, Bahram Djafari-Rouhani	ID : 631021
16:00 - 16:15	“Multiple Fano resonances based on metal-insulator-metal (MIM) waveguide coupled with a triangular-like cavity and stub” <u>Reda Er-roukhou</u>, Ossama El Abouti, El Houssaine El Boudouti	ID : 629043
16:15 - 16:30	“Engineering Robust Topological phononic Interface States via Quarter-Wave Condition” <u>Mohammed Elaouni</u>, Soufyane Khattou, Madiha Amrani, Afaf Bouzidi, El Houssaine El Boudouti	ID : 631015
16:30 - 16:45	“Theoretical Analysis of Lithium Self-Diffusion in Lithium Niobate Single Crystals via a Mixed Vacancy Model” <u>Hamza Hboub</u>, Nouredine Masaif	ID : 633518
16:45 - 17:00	“Innovative Arginine-Polyaniline/SiO₂ Composites: A Promising Solution for Cr(VI) Removal from Water” <u>Zitouni Ennajih</u>, Karim Tanji, Abdelghani Hsini, Abdelillah SHAIM	ID : 613530
17:00 - 17:15	“Improvement of the performance of biosensors based on Bloch surface waves in a hybrid one-dimensional photonic crystal” <u>Ahmed El Kouka</u>, Ossama El Abouti, El Houssaine El Boudouti	ID : 630934
Session 3 : Renewable Energy (Room 3)		
Chairs : Pr. Salah DAOUDI, Pr. Abdelilah MOUSSA, Pr. Dris BAHIA, Pr. El Yamani DIAF		

15:00 - 15:15	“First-Principles DFT Investigation of the Electronic Properties and Band Gap Accuracy of NaGeCl₃ Halide Perovskite as a Solar Cell Absorber” <u>Hamza Bochaoui</u>, Mohamed El Bouabdellati	ID : 630276
15:15 - 15:30	“DC Microgrid Topologies and Challenges: A Comprehensive Review ” <u>Yassine Ait Jillali</u>, Hassan EL Fadil, Abdellah Lassioui	ID : 631022
15:30 - 15:45	“Impact of Particle Size on Sediment Transport, Bed Changes, and Flow Structure” <u>Mohammed Frihessane</u>, Ouafae Boulterhcha, Salah Daoudi	ID : 630567
15:45 - 16:00	“Study of the Aging and Overaging of Alloy Pb2%Cd0.08%Sr1%Sn0.15%Ag for Battery Grids” <u>Youssef Ait Yassine</u>, Mustapha Maarouf Mustapha, Benataya Karim, M'ghari Oumayma, Saissi Soukaina, Ben Lenda Omar, Saad Elmadani, Sannad Mohamed	ID : 630956
16:00 - 16:15	“Numerical analysis of the effect of rectangular baffles on heat transfer and flow in a turbulent forced convection channel” <u>Ikrame Jamal</u>, Fatima-zahra Barhdadi, Ilham Lahlal, Salma Bendaouad, Salah Daoudi	ID : 633607
16:15 - 16:30	“Comparative performance analysis of PCM in latent thermal energy storage design for CSP applications” <u>Soumia Chatioui</u>, Moussa Aadmi, Morad EL Kaouini	ID : 628084
16:30 - 16:45	“Numerical study of heat transfer enhancement in corrugated channels with a hybrid nanofluid” <u>Fatima-zahra Barhdadi</u>, Ikrame Jamal, Ilham Lahlal, Salma Bendaouad, Salah Daoudi	ID : 633606
16:45 - 17:00	“Influence of solution acidity on the growth, structural and optical properties of co-electrodeposited Cu₂SnS₃ thin films: Experimental and DFT discussions” <u>Khalid Fareh</u>, Mohamed Oubakalla, Nejmi Nejmi, Mustapha Beraich, Mohcine Bouachri, Fayçal Bennani, mounir fahoume	ID : 630124
17:00 - 17:15	“Phase diagram of electron-doped cuprates” <u>Mohammed EL Ouali</u>, Mohamed Azzouz, Saïd Ouannasser	ID : 647334

Day 2 : May 23, 2025		
08:30 - 09:00	Reception of participants and Registration	
Speaker Session 1		
Chairs : Pr. Said Ouannasser & Pr. Samir Didi		
09:00 - 09:45	Speaker 1 : Pr. Abdelkrim Talbi “Integrated Multi-Parameter MEMS Sensor Technologies: Advancing Energy Efficiency in Transportation and Energy Conversion Systems” IEMN, Centrale Lille, Lille, France.	
09:45 - 10:30	Speaker 2 : Pr. El Houssaine EL Boudouti “One-Dimensional Plasmonic and Photonic Waveguides: Fundamentals and Applications” LPMR, FSO, Mohamed First University, Oujda, Morocco	
10:30 - 11:30	Coffee Break & Poster Session	
Speaker Session 2		
Chairs : Pr. El Houssaine EL Boudouti & Pr. Mohamed EL Bouabdellati		
11:30 - 12:15	Speaker 3 : Pr. Mohamed Azzouz “38 Years of High -Tc Cuprates; What we Don't Know and what we Know About Them” School of Science and Engineering at Al Akhawayn University, Ifran, Morocco.	
14:30 - 15:30	LUNCH	
Communication Session		
Session 1 : Plasma and applications (Room 1)		
Chairs : Pr. Alyen Abahazem, Pr. Rochdi RAIS, Ibrahim El Aouadi, Pr. Abdelhak Missaoui		
15:30 - 15:45	“A novel approach for degrading pharmaceutical contaminated wastewater using a pulsed corona discharge reactor” Djakaou Iya-sou, Nofel Merbahi, Jalloul Bouajila, Mohammed Yousfi	ID : 620746
15:45 - 16:00	“Proton Therapy in Morocco: Dream or Achievable Project? The Key Role of Medical Physicists” Soufian Audia	ID : 648672
16:00 - 16:15	“Dusty plasma sheath with non-extensive electrons and an inhomogeneous magnetic field” Zakariae ELJABIRI, Omar EL Ghani, Ismael Driouch	ID : 635650
16:15 - 16:30	“Propagation of electromagnetic surface waves along the glass–plasma transition layer under the effect of plasma parameters” Ayoub El Jaouhari, Maryame Chaou, Majid Rochdi, Morad El Kaouini.	ID : 637568

16:30 - 16:45	“Permittivity and Conductivity Behavior in Plasma: A Comparative Study of the Kinetic and Drude Models” <u>Maryame Chaou</u>, Ayoub EL Jaouhari, Majid Rochdi, Morad EL Kaouini	ID : 647489
16:45 - 17:00	“Slow-Roll Inflation with a Mechanism of Super-Planck Initial Scalar Fields Oscillating in f(R,T) Gravity” <u>EL Yamani Diaf</u>, Bachir Lharouid	ID : 638212
17:00 - 17:15	“Holographic cosmology and its implications for modified gravity inflation” <u>Aatifa Bargach</u>, Farida Bargach, Ahmed Errahmani, Taoufik Ouali	ID : 620094
17:15 - 17:30	“Monte Carlo Modeling of Electron Contamination Sources on Synergy Linac Under the effect of a Uniform Planar Magnetic Field” <u>Yassir EL Ghazi</u>, Samir Didi, Karim Bahhous, Dikra Bakari, Abdeslem Rrhious, Mustapha Zerfaoui	ID : 647518
17:30 - 17:45	“Sensor based on topological edge states in one-dimensional photonic crystal” <u>Soukaina Sabsi</u>, Fatima Zohra Harroui, M Elaoui, Ossama El Abouti, Tarik Mrabti, Madiha Amrani, Soufyane Khattou, Afaf Bouzidi, El Houssaine El Boudouti	ID : 631017
Session 2 : Material Science (Room 2)		
Chairman : Pr. Neila Terzi, Pr. Jalloul Trabelsi, Pr. Soufian Talbi, Pr. Aatifa Bargach		
15:30 - 15:45	“Study DFT and thermoelectric and dynamics molecular: β-Cu₂Se” <u>Faiza Baghida</u>, Mourad Boughrara	ID : 620340
15:45 - 16:00	“Impact of rapid cooling near 80K on critical transition temperature and superconducting fraction in deuterated organic superconductor κ-(BEDTTTF)₂Cu[N(CN)₂]Br” <u>Omar Sliman</u>, Ahmed Tirbiyine, Jamal EL Qars, Hassan Elouaddi, Youssef Ait Ahmed, Mohammed Bellioua, Mohammed Khenfouch, Abdelaziz Labrag, Mohammed Idelamel	ID : 620312
16:00 - 16:15	“Effect of Nickel Concentration on Vacancy Migration Enthalpy in Fe-Cr-Ni Stainless Steels: A Monte Carlo Study” <u>Meryem Benkaddour</u>	ID : 630553

16:15 - 16:30	“Inverse Design of Localized Surface Plasmon Resonances in Gold Nano-Ridge Dimers Using Deep Learning” <u>Mohamed El Ghafiani</u>, Adnane Noual, Madiha Amrani, Mohammed Moutaouekkil, El Houssaine El Boudouti	ID : 631002
16:30 - 16:45	“Quantum Correlations and Coherence in a Two-Dimensional Electron Gas” <u>Chaïmae Banouni</u>, Mostafa Mansour, Mohamed Ouchrif	ID : 630125
16:45 - 17:00	“Quantum Correlations and Metrological Coherence in a Hybrid System” <u>Abdessamie Chhieb</u>, Mostafa Mansour, Mohamed Ouchrif	ID : 630122
17:00 - 17:15	“Analysis of the Sr₂GdTi₂Nb₃O₁₅ ceramic: Investigation into its structural properties and complex impedance spectroscopy” <u>Karim Chourti</u>, Ilyas Jalafi, Fatima Chaou, Amine Bendahhou, Soufian El Barkany, Mohamed Abou-Salama	ID : 630762
17:15 - 17:30	“Innovative Photocatalyst based on Modified TiO₂ Designed for Water Purification under Sun Light” <u>Mohamed Chokri</u>, Ilyas Jalafi, omar Azougagh, Amine Bendahhou, Youssef EL Ouardi, Mohamed Abou-Salama, Soufian El Barkany	ID : 622109
17:30 - 17:45	“Effect of Ca, Nd, and Mn substitution on the microstructural, optical, and dielectric properties of lead-free Na_{0.5}Bi_{0.5}TiO₃ ceramics” <u>Fatima Chaou</u>, Ilyas Jalafi, Fatima Arhmir, Karim Chourti, El Hassan YAhakoub, Amine Bendahhou, Soufian EL Barkany, Mohamed Abou-Salama	ID : 630542
Session 3 : Renewable Energy (Room 3)		
Chairman : Pr. Mustapha Karkri, Pr. Moussa Aadmi, Pr. Imad EL Bojaddaini		
15:30 - 15:45	“Investigation of thermophysical characteristics of cement-based concrete incorporating date pit aggregates” <u>Mohamed Kichouhi</u>, Rachid Elalajji, Mohammed Amine Moussaoui, Soufiane Derfoufi	ID : 643494
15:45 - 16:00	“Mixed Convection of Alumina Nanofluid in a Lid-Driven Partially Porous Annular Space with Discrete Heating” <u>Youness Foukhari</u>, Hafsa Akkaoui, Issa El glili, Mohamed Sammouda, Mohamed Driouich	ID : 620602

16:00 - 16:15	“Synthesis, Characterization, and Study of the Electrical and Dielectric Properties of Dicalcium Phosphate Dihydrate doped” <u>Noureddine Zelmimi</u>, Souhail Jerdioui	ID : 635728
16:15 - 16:30	“Numerical Investigation of Forced Convection Heat Transfer Enhancement in a Corrugated Channel Integrating Nanofluids” <u>Salma Bendaouad</u>, Fatima-zahra Barhdadi, Ikrame Jamal, Ilham Lahlal, Salah Daoudi	ID : 633669
16:30 - 16:45	“Artificial Intelligence-Enhanced Comparative Analysis of Turbulence Models for Predicting Fluid Flow Phenomena: Insights from Von Kármán Vortex Streets and Bluff Body Pressure Distributions” <u>Mouhsine Ibrahim</u>, Dris Bahia, Zouhair Meghari	ID : 647003
16:45 - 17:00	“Experimental study on rock thermophysical properties for high temperature thermal storage and building applications” <u>Rachid Tiskatine</u>, Abdelouahab Amahmouj, Achraf Wahid	ID : 630410
17:00 - 17:15	“Pulsatile blood flow of Casson nanofluid through stenosed artery with hematocrit dependent viscosity” <u>Issa EL Glili</u>, Hafsa Akkaoui, Youness Foukhari, Abdelmajid Saidi, Mohamed Driouich, Mohamed Sammouda	ID : 625583
17:15 - 17:30	“The impact assessment of a magnetic field dedicated to MRI during a carbon-therapy on treatment efficiency” <u>Ayoub Marhou</u>, Mohammed Hamal, Mustapha Zerfaoui, Abdelkarim Bazza	ID : 630891
17:30 - 17:45	“Comparative Study of Public Lighting Technologies: Towards Sustainable Urban Illumination” <u>Abdelmohaimine Oudad</u>, Rachid El Gouri	ID : 617545
17:45 - 19:00	Closing Ceremony	

Poster session

“Industrial by-products recycling as potential precursors for the formulation of alkali-activated materials: Microstructure, Mechanical performance and Dielectrical behavior evaluation” <u>Assia Azouaghe</u>, Dounia Ahoudi, Hanane EL Harouachi, Abdelmalik El Aatiaoui, Mohamed Loutou	ID : 631019
“Influence of composite materials on the dynamic behavior of structures” <u>Samir EL Marzguioui</u>, Abdelouafi El Ghoulbzouri	ID : 630112
“Dynamical Behavior of Nonminimal Tachyon Field in Holographic Cosmology” <u>Farida Bargach</u>, Aatifa Bargach, Taoufik Ouali	ID : 620126
“Modeling of NaI:Tl detector efficiency using TOPAS MC and MCNPX codes, and Comparison with Experimental Results” <u>EL Mahdi Moustaid</u>	ID : 629768
“Optoelectronic Properties and Multiscale Numerical Optimization of $\text{CuIn}_{1-x}\text{Ga}_x\text{Se}_2$ Chalcopyrite Thin-Film Photovoltaics: Bridging DFT+U Insights and SCAPS-1D Device Performance” <u>Mustapha BRYK</u>, Moloudi Dardouri, Hasnaoui Abdellatif, Khalid Sbiaii	ID : 633240
“Power Optimization and Fast Prototyping of a Low-Cost Educational Robot” <u>Mohammed EL Miri</u>, Said El Khaldi, Ismael Driouch, Loukmane Elkhaldi	ID : 631023
“1D Single-Layer PMMA for Gigahertz Band Gap Tuning” <u>Imane Maajem</u>, Ossama EL Abouti, El Houssaine El Boudouti	ID : 631016
“Bound states in the continuum and magnetic induced transparency in a quantum ring with multiple arms” <u>Fatima zohra Harroui</u>, Khalid Lamayny, Soukaina Sabsi, Tarik Mrabti, Ossama El Abouti, Madiha Amrani, Soufyane Khattou, El Houssaine El Boudouti	ID : 631025