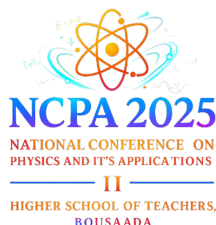


# Conference Program

## Second National Conference on Physics and its Applications



### General Schedule

Time	Activity
08:30–09:00	Registration of Participants
09:00–09:30	Opening Ceremony
09:30–10:00	First Plenary Lecture
10:00–10:30	Second Plenary Lecture
10:30–11:30	Group Photo, Poster Exhibition and Coffee Break
11:30–14:00	Parallel Technical Sessions
14:00–14:30	Closing Ceremony and Awards
14:30	End of Conference

### Parallel Technical Sessions (11:30–14:00)

#### Session 1: Materials Science

(Chairperson: Toufik SAHRAOUI, Amphi 3)

Time	Author	Title	Co-Author(s)	Type
11:30–11:40	Abdelkader KHAL-FALLAH	Cinétique des transformations de phase dans l'alliage d'Aluminium étudiée par DSC	Fahd ARBAOUI, Sid Ahmed AMZERT	Oral
11:40–11:50	Abdelkader KHAL-FALLAH	Kinetics of Phase Transformations in Al–Zn–Mg Alloy Investigated by DSC	Fahd ARBAOUI, Sid Ahmed AMZERT	Oral
11:50–12:00	Afaf Mokhtari	Phase transformation and kinetics of primary mullite via reaction sintering of algeria kaolin	H. Belhouchet	Oral
12:00–12:10	Aicha Mohadi	DFT Study of Doped Porous Silicon	Riadh Bourzami, Oualid Chinoune	Oral
12:10–12:20	Fateh CHOUIA	Synthesis and microstructural properties of solid-state sintered Kaolin DD3 and Natural phosphate refractories based materials	Yousf Islem BOUREZG, Djallel KHERIFI, Toufik SAHRAOUI	Oral
12:20–12:30	Fateh Chouia	Determination of activation energy for anorthite formation in kaolin DD3–natural phosphate mixtures	Yousf Islem Bourezg, Toufik Sahraoui	Oral
12:30–12:40	Kamel DJEBLI	Synthèse par radiolyse gamma de nanocomposites ZnS/Zeolite Y et évaluation de leur activité photocatalytique	Houda TABANI, Nassira KEGHOUCHE	Oral

Time	Author	Title	Co-Author(s)	Type
12:40–12:50	Kamel DJEBLI	Etude de la composition élémentaire de deux types de marbre prélevés dans la région FIL-FILA en Algérie orientale par la technique k0-NAA	Hamidatou AL-GHEM	Oral
12:50–13:00	Toufik SAHRAOUI	Effects of mechanical activation on the kinetics of mullite synthesis from kaolin-metal ceramic	Fateh CHOUIA, Hocine BEL-HOUCHET, Yousf Islem BOUREZG	Oral
13:00–13:10	Yousf Islem BOUREZG	Experimental investigation of nucleation and growth kinetics of lanthanum-based perovskite Material	Sofiane MAKHLOUFI, Foudil SAHNOUNE, Toufik SAHRAOUI, Fateh CHOUIA, Amar DJEMLI	Oral
13:10–13:20	Yousf Islem BOUREZG	Nano-Sized Sodium Zinc Phosphate Glasses Doped with Cobalt Oxide: Structural and Dielectric Properties	Mohamed KHARROUBI, Halima RAMDANI, Foudil SAHNOUNE, Sofiane MAKHLOUFI, Toufik SAHRAOUI, Fateh CHOUIA	Oral

## Session 2: Applied Physics

(Chairperson: Rabeh Belouadeh, Amphi 2)

Time	Author	Title	Co-Author(s)	Type
11:30–11:40	Abderrahmane Tabakh	Coupled Magnetolectric Behavior in Bilayer Polyurethane–Magnetic Particle /Piezoelectric Ceramic Composites: Experimental Study and Modelling	Rabah Belouadah	Oral
11:40–11:50	HADJADJI Nari-man	A Machine Learning Framework for Enhancing Energy Efficiency in Non-linear Optical Fiber Systems	BENGUESMIA Hani	Oral
12:00–12:10	Mohamed LAID YAHIAOUI	Brain Tumor Classification from MRI Images Using VGG16 Fine-Tuning	kamel DJEBLI	Oral
12:10–12:20	Mohamed LATRACHE	Numerical Simulation of Piezoelectric Energy Harvesting from Vibrating Structures	Mourad CHALANE	Oral
12:20–12:30	Mourad CHALANE	Heat Transfer in Composite Materials: A Physical and Numerical Approach	Mohamed LATRACHE, Bachir LABIODH	Oral
12:30–12:40	Oussama GHERMOUL	A 3D Analysis of Electric Field and Potential Distributions For A Broken Insulator String Using COMSOL Multiphysics	Hani BENGUESMIA, Badis BAKRI	Oral
12:40–12:50	Salheddine RAHMANI BOUZINA	Thermal Performance of Inconel 617 Alloy in the Steam Generator of a High-Temperature Gas-Cooled Reactor for Clean Energy Applications	Djemai MERROUICHE, Yasmina KERBOUA ZIARI	Oral

## Session 3: Condensed Matter Physics

(Chairperson: Messaoud Caid, S19)

Time	Author	Title	Co-Author(s)	Type
11:30–11:40	Djamel ALLALI	Structural, elastic and thermodynamic characteristics of trigonal-type Zintl phases $XZn_2Sb_2$ ( $X = Ca$ or $Sr$ ) under hydrostatic pressure: Prospects for Advanced Materials in High-Pressure and Thermoelectric Devices	Fares ZERARGA, Abdelhak BED-JAOUI, Elhadj BENREZGUA, Missoum RADJAI, Rabie AMARI, Saber SAAD ESSAOUD, Ammar BOUKHARI	Oral
11:40–11:50	Houda Mansour	DFT-based investigation of Cs-based double perovskite hydrides for efficient hydrogen storage and energy harvesting applications	/	Oral

## Session 4: Atomic, Molecular and Optical Physics

(Chairperson: Mehamdi abdelkader, S 20)

Time	Author	Title	Co-Author(s)	Type
11:30–11:40	Houda MANSOUR	The Role of Particles and Modified Gravity in the Structure of Charged Compact Stars	/	Oral
11:40–11:50	Imane HAMIED	Empirical Determination of the L3 Subshell Jump Ratio ( $r_{L3}$ ) for Elements with Atomic Numbers 71–77	Abdelhalim KA-HOUL, Salim DAOUDI	Oral
11:50–12:00	Meddah Samia	Measurement of atomic L shell Auger yields for elements from 80Hg to 88Ra by photon	Kahoul Abdelhalim, Daoudi Salim	Oral
12:00–12:10	HADJADJI Nari-mane	A Physics-Based Digital Signal Processing Approach for Nonlinearity Compensation in Optical Fibers	BENGUESMIA Hani	Oral

## Session 5: Renewable Energy

(Chairperson: Hani Benguesmia, Amphi 1)

Time	Author	Title	Co-Author(s)	Type
11:30–11:40	Adel DAOUD	Modeling and Analysis of Electrical Performance in CBTS Thin-Film Solar Cells under Doping and Band Gap Modulation	Ali CHEKNANE	Oral
11:40–11:50	Akka ali	sliding mode control for inverted pendulum	Akka abderrachid	Oral
11:50–12:00	Amar GUICHI	Parameter Estimation of Photovoltaic Models Using an Optimization Algorithm Inspired by Plant Water Uptake and Transport Mechanisms	Ahmed Bendib	Oral
12:00–12:10	BOUZIDI ALI	Modeling and control of a Three-Level Modular Multilevel Converter (MMC)	AKKA ALI	Oral
12:10–12:20	Hana MERAH	An Improved Slime Mould Algorithm with Mutated Chaotic Local Search for Optimal Power Flow in Renewable-Integrated Systems	Ikram BOUCETTA	Oral
12:20–12:30	HELLALI LAL-LOUANI	Modeling and control of a wind turbine using type-1 fuzzy logic	OUSSAMA MOUSSA, AKKA ALI, MAZOUZ Aboubaker Essadiq, BOUZIDI ALI, SAAD BELHAMDI	Oral
12:30–12:40	Ikram BOUCETTA	Analysis of FACTS Devices Impact on Power System Stability under Solar Photovoltaic Integration	Hana MERAH	Oral

Time	Author	Title	Co-Author(s)	Type
12:40–12:50	Nassima BEKHOUCHA	Experimental Validation of Advanced MPPT Algorithms for Photovoltaic Systems Under Variable Conditions	/	Oral
12:50–13:00	OUSSAMA MOUSSA	Improving PV system power using four-leg interleaved boost converter and MPPT based on robust integral linear quadratic control	HELLALI LAL-LOUANI, AKKA ALI	Oral
13:00–13:10	OUSSAMA MOUSSA	Design and PIL implementation of a new robust backstepping based low-complexity voltage-oriented control method for four-leg rectifiers	HELLALI LAL-LOUANI, AKKA ALI, Slma BAALI	Oral
13:10–13:20	REGUIG BERRA Ahmed	Aggregate Offshore Wind Farm	/	Oral
13:20–13:30	REGUIG BERRA Ahmed	Multilevel Point-to-Point VSC-HVDC Transmission System	/	Oral
13:30–13:40	Aboubaker Essaddiq MAZOUZ	MATRIX CONVERTERS FOR NEXT-GENERATION WIND ENERGY SYSTEMS	Said HASSAINE, Hamid BOUMEDIENE	Oral
13:40–13:50	Nacira Tkouti	MPPT Control of a Stand-Alone Photovoltaic System Using the Grey Wolf Meta-heuristic Optimization Algorithm (GWO)	Raihane Mechougou, Hani Benguesmia	Oral

## Poster Session (10:30–11:30)

Venue: Main Hall All poster presenters must be at their posters from 10:30 to 11:30

### Applied Physics Posters

Author	Title	Co-Author(s)
Aldjia HADROUG	Computational identification of HMG-CoA reductase inhibitors using molecular docking for cardiovascular risk prevention: A physics based approach	/
Halima Saadia KIDAR	Medical Physics: Extending the Application of Physics to Medicine	Asma BENAIDJA, Hacene AZIZI
Hani BENGUESMIA	Analysis of Mesh Density on Electric Field Distribution in XLPE Power Cables using COMSOL	Hassen REGHIOUI, Mohammed BENGUESMIA
Mohammed Lakhdar NEBBAR	Critical depth calculation in triangular shaped-channel depends on flow viscosity and surface roughness	/

### Atomic, Molecular & Optical Physics Posters

Author	Title	Co-Author(s)
ABASSI ABDELKADER	L-Shell Ionization Cross Sections for Protons: Theoretical Calculation Using the ECPSSR Model and Comparison with Experimental Data	HASSANI Mohamed
Asma BENAIDJA	Ionising Radiation Processing of Food Preservation	Fayçal KHARFI
Ferdjaoui Mostapha	Analytical Study of Combined Potentials for Selected Diatomic Molecules Using the Path Integral Formalism.	Bahia SI LAKHAL, Abdelkader YANALLAH
Ferdjaoui Mostapha	Approximate Analytical Solutions of Klein-Gordon equation for q-deformed Hulthen-quadratic exponential-type potential	/

Author	Title	Co-Author(s)
Lamine ELAIHAR	Quantum Control of Atomic Coherence for Enhanced Light-Matter Interaction	/
Leila Driai	Analysis of the impacts of gamma irradiation on polyethylene naphthalate using the photoluminescence method	Fatma Saad Saoud, Fatima Zohra Sedrati
Riadh MOKHTARI	Development of high-sensitive sensor in 2D photonic crystal	Abdesselam HOCINI, Djamel KHE-DROUCHE
Saadi DJIDEL	Design and analysis of microstrip filter for 5G Applications	Djamel KHEDROUCHE
Souheyla Chetioui	Theoretical Mechanistic and Kinetic Investigation of the Diazotization-Coupling Reaction Between 4-Fluoroaniline and 2-Naphthol: Comparison with Experimental Findings	Sihem Menassel, Nabila Benabila, Ilhem Bensehil

## Condensed Matter Physics Posters

Author	Title	Co-Author(s)
Abdelhak BEDJAOU	Investigation of Structural, elastic and thermodynamic Properties of trigonal $\text{XCd}_2\text{Sb}_2$ ( $X = \text{Ca}, \text{Ba}$ ) Zintl phases under hydrostatic pressure for Advanced Materials and Thermoelectric Applications	Djamel ALLALI, Fares ZERARGA
Allal Adel	Ab initio study of structural, mechanical, and electronic properties of zinc-blende $\text{Hg}_x\text{Cd}_{1-x}\text{Se}$ alloys	/
Amari Fouzi	Structural, electronic, and elastic properties of $\text{HgSe}$ in the zinc-blende phase under hydrostatic pressure	Salima Saib
Amari Fouzi	Structural and electronic properties of ferromagnetic $\text{MnSe}$ in rocksalt () and zinc-blende () structures	Salima Saib
Djalel Mebarki	First-principles calculations of the physical properties of superconducting materials	Salima Saib
Djemaa Guendouz	Theoretical prediction of structural, electronic, and mechanical properties of $\text{CrX}$ ( $X=\text{Se}, \text{Te}$ ) compounds	Zoulikha CHARIFI, Hakim Baaziz
Djihad MOKHTARI	Study of the Structural and electronic properties of $\text{GaSb}$ compound: A first principle study	/
Fares ZERARGA	First principles studies of pressure dependence of structural, elastic and thermodynamic properties of trigonal-type Zintl phases $\text{SrCd}_2\text{Sb}_2$ and $\text{BaZn}_2\text{Sb}_2$	Djamel ALLALI, Abdelhak BEDJAOU
Faycel HEBAL	Ab initio study of phase stability in the $\text{Cu-Cr-Zr}$ system	D. BRADAI
Herzi Abdelkarim	Study of structural, electronic and optical properties of $\text{ZnO}$	Djalel Mebarki
Houria Mekki	A DFT insight into the physical properties of the semiconductor half Heusler alloy	H. Baaziz, Z. Charifi, T. Ghellab
Khadidja Berarma	Structural and electronic study of cubic perovskite $\text{CsSnI}_3$ : a promising lead-free semiconductor	Amina Raghdi, Samia Yousfi
Lamouri REFICE	Theoretical study of metal hydrides for sustainable hydrogen storage of the form $\text{ABH}_3$ ( $A=\text{Mg}, \text{Sr}$ )	Ali BENAMER
Messaoud CAID	Exploring the structural, elastic, magneto-electronic, and thermoelectric characteristics of Sc-based full-Heusler alloy using DFT+U approach	/

Author	Title	Co-Author(s)
Nabila BENABILA	Computational Characterization of Phthalimide Derivatives: A DFT Study of Electronic Properties and Reactivity	Hamza SERRAR, Khadidja BERRARMA
Nadia HETACHE	Structural, electronic and magnetic properties of CoFe <sub>2</sub> O <sub>4</sub>	Zolikha CHARIFI, Torkia GHELLAB
Raghdi Amina	A DFT Study of the Physical Properties of Half-Heusler NiScBi Ternary Transition Metal Alloy	Mohadi Aicha, Menedjhi Adel
Said CHAHLAT	Ab initio investigation of the structural stability, elastic behavior, and electronic structure of the ZrNiC Half-Heusler compound	Sabrina BOUNAB
Sara Abbassi	Structural and Electronic Properties of Tungsten Diselenide (WSe): A Density Functional Theory Study.	Salima Saib
Soumia BENLECHHEB	Elastic and Mechanical Properties of Zinc-Blende AlGaAs Alloys: A First-Principles Study	/

## Materials Science Posters

Author	Title	Co-Author(s)
Abdelhakim DJALAB	Experimental evaluation of the effect of operating parameters on fatigue of materials subjected to mechanical stress	Khatir KHETTAB
Amira MOKRANE	Effect of temperature on hydroxyapatite prepared by the sol-gel technique for Ca/P ratio = 1.67	Menad HERAIZ, Fatima-Zohra MEZAHI
ATTOUI Warda	Experimental Study on the Mechanical Properties of a Composite Material	Debih ELHADI, Melouki AZZEDINE, Benyahia AZZEDINE
Dounia Ikram SENGRA	Simulation Study of Double Perovskite Solar Cells Using SCAPS	Adel DAOUD
Ibtissam SEBAI	Preparation and physicochemical characterization of a new heteropoly salt photocatalyst (NH)ZnP <sub>2</sub> O <sub>7</sub>	Dahbia AMITOUCHE
LADJAL Naziha	Élimination du violet de cristal par biosorption sur coques de noyaux d'abricot	/
Lamouri REFICE	Cinétique de transformations de phases dans l'alliage Al-Ag	Azzeddine RAHO, Ali BENAMER
Leila Latreche	ETUDE D'UN BIOMATERIAU COMPOSITE: POLYPROPYLENE (RECYCLE)/ POLYETHYLENE BASSE DENSITE (RECYCLE) /POUDRE DE FARINE DE BOIS/POUDRE D'ALFA	Lokmane-Taha Abdi
Lokmane-Taha Abdi	ETUDE DES PROPRIETES D'UN MATERIAU COMPOSITE: LE POLYOXYMETHYLENE POM (recyclé)/CaCO <sub>3</sub> /FARINE DE BOIS	Leila Latreche
M. Belouadah	Innovative Cement Composites with Recycled Glass Powder and Industrial Waste Materials for Sustainable Construction	Z. Rahmouni, N. Tebbal
Mohamed MAALMI	Effect of Temperature on the Formation of Wollastonite Compositions in Sol-Gel Synthesis Processes	Fatima Zohra MEZAHI
Seghiri Wessal	A comparative study of the Mechanical properties of photopolymer and FDM 3D printing materials	Mohamed El Amine Moussa, Debbouci Nour El Hoda, Mefedjeh Amar
Tahir HABILA	Green and Efficient Catalysis of the Hantzsch Reaction Using a Calcined Eggshell/Kaolin System	Mohamed-Zakaria STITI, Ammar KHALED, Mourad BOUHEDJA, Smail KHELILI

Author	Title	Co-Author(s)
Zainate KOADRI	Optimisation physico-chimique des composites à matrice therm durcissable par des fibres: Vers des matériaux renouvelables de haute performance.	//

## Renewable Energy Posters

Author	Title	Co-Author(s)
Abdelkader MO-HAMMEDI	Investigation of Current Behavior in BiTe Thermoelectric Generators toward AI-Oriented Energy Harvesting	Miloud IBRIR
Ahmed ABBASSI	Quelle synergie les mathématiques offrent-elles à la physique dans la construction de la pensée scientifique	/
Aya ATTRI	An Arduino-Based Dual-Diode Pyranometer for Application in PV Power Stations	Sara SEGHIR BIREM, Fella BENDIFALLAH, Hani BENGUESMIA
Badis BAKRI	Machine Learning-Based Prediction of Solar Irradiation Using a Response Surface Model	Oussama GHERMOUL, Hani BENGUESMIA
Ghania Azzouzi	Bifacial solar cells based on perovskites: a Numerical study	bendjedi chayma
Habiba BECHA	Enhancing Power Quality with Solar Integration	Hani BENGUESMIA, Yasmine MEKKAS, Mohammed BENGUESMIA
Hassen REGHIOUI	Performance Analysis of a 20 MW Grid-Connected PV Plant in Ain El-Melh, Algeria	Hani BENGUESMIA, Mohammed BENGUESMIA
Mohammed SAOUDI	Performance Analysis of Sliding Mode and PI Control for a Single-Phase Inverter	Hani BENGUESMIA
Naima RAHOUA	Photovoltaic-Integrated Active Power Filter for Three-Phase Four-Wire System Harmonics Mitigation	Hani BENGUESMIA, Abir BETKA
Oussama GHERMOUL	An Artificial Neural Network Model for Solar Radiation Prediction	Badis BAKRI, Hani BENGUESMIA
Sara SEGHIR BIREM	An Integrated Renewable Energy Approach: Developing a Precision Solar Irradiance Meter Using Arduino	Aya ATTRI, Fella BENDIFALLAH, Hani BENGUESMIA
Sihem Menassel	Theoretical study of the mechanism of the cycloaddition of 2-Chloroquinoline-3-carbaldehyde with o-aminophenol, o-aminothiophenol and o-phenylenediamine	Nabila Benabila, Souheyla Chetioui
Yasmine MEKKAS	Metrics and Viability Assessment of Large-Scale PV Power Stations	Hani BENGUESMIA, Mohammed BENGUESMIA
BOUZIDI ALI	Control and Integration of Modular Multilevel Converters in Grid-Tied PV Applications	/
Abir BETKA	Intelligent Optimization Technique for Photovoltaic Model Parameterization	Samia NOUREDDINE, Naima RAHOUA, Hani BENGUESMIA, Abida TOUMI
Raouia MAMINE	Modeling and Simulation of a Grid-Connected Hybrid Energy System using HOMER	Yasmine MEKKAS, Hani BENGUESMIA