



*National Conference on Material  
Physics and Fluids (CPMF-2022)  
In the prestigious city of Oran  
(Algeria), Les Andalouses on December 18-  
19, 2022, Oran, Algeria*



## Conference Program

**Sunday, December 18, 2022**

**09h30mn-10h Opening Ceremony**

**Plenary Session :**

**Chairman: Pr H.ALLA**

<b>01</b>	<b>10h-10h30'</b>	<b>Pr. Hafid Aourag</b>	<b>Université de Tlemcen</b>
<b>02</b>	<b>10h30'-11h</b>	<b>Pr. Zheyu Lieu</b>	<b>College of Petroleum Engineering, China University of Petroleum, Beijing, China.</b>

**11h-11h30mn Coffee Break**

**Chairman : Pr H.Aourag**

<b>03</b>	<b>11h30'-12h'</b>	<b>Dr. Thibault Roques-Carmes</b>	<b>LRGP – ENSIC – University of Lorraine, Nancy, France</b>
<b>04</b>	<b>12h-12h30'</b>	<b>Dr. Mohamed Khodja</b>	<b>Head of Research – SONATRACH/IAP Boumerdes, Algeria.</b>
<b>05</b>	<b>12h30'-13h</b>	<b>Pr. Bachir Bouhafs</b>	<b>Physic's Department, Sidi Bel-Abbes, Algeria.</b>

**13h-14h Lunch Break**

**Oral Session**

	<b>EOR-RS Chairman : Dr M. Khodja</b>	<b>NME Chairman : Pr B.Bouhafs</b>	<b>NSN Chairman : Pr N.Adnane</b>	<b>CE Chairman : Dr Khellil</b>
<b>14h-14h20'</b>	Farouk Selmi	Wassila Sekkal	Lounis Belhimer	Fatéma Ammour
<b>14h20'-14h40'</b>	Abdallah Sokhal	Hakima Boublenza	Nadia Hourri	Bachir Nail
<b>14h40'-15h</b>	Sabeur Amine	Mohamed Abdelilah Fadla	Siham Djoumi	Ali Reguieg
<b>15h-15h20'</b>	Miloudi Hafida	<i>Samir Meziani</i>	Tahir Ghazoul	<b>RM Chairman : Pr N.Belkaid</b>





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				Amirouche Bouremani
15h20'-15h40'	Laroussi Kada	<i>Hadj Moulay Ahmed Mazouz</i>	Cheikh Imene	
15h40'-16h		Yazid Zakaria Hamri	L. Asma Kawther	

**16h-16h30mn      Coffee Break      Poster Session**

**Chairman : Pr. M. Messad**

	<b>FM Chairman : Dr.S. A.Sabeur</b>	<b>NME Chairman : Pr. D. Madouri</b>	<b>NMM Chairman : Pr M. Elchikh</b>	<b>NMM Chairman : Pr S.Hiadi</b>
16h30'-16h50'	Kouadria Amar	Oussama Bachir Bouiadjira	Aida Benmalek	A.Hireche Baghdad
16h50'-17h10'	Oussama Mebarki	Yazid Zakaria Hamri	M.H.M. Belhachemi	Asma Kadri
17h10'-17h30'	Abderezak Bennia	Nasreddine Bouziane	F.D.Benyahlou	
17h30'-17h50'	Tarek Sriba	Mahdjouba Khatiri		





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**Monday, December 19, 2022**

**Plenary Session : Chairman : Pr. M. Abdelouahab**

01	09h30'-10h	Pr. Hossein Hidjazi	University of Calgary, CANADA
02	10h-10h30'	Dr. Wörner Martin	Karlsruhe Institute of Technology, Germany
03	10h30'-11h'	Pr. Alla Hocine	Université des Sciences et Technologies USTO-MB

**11h-11h30mn Coffee Break**

**Chairman : Pr. M. Elchikh**

04	11h30'-12h	Pr. Marco Marengo	Director of the Advanced Engineering Centre, University of Brighton, UK
05	12h-12h30'	Pr. Yacine Salhi	Université sciences et technologie Bab Ezzouar USTHB

**12h30-13h30 Lunch Break**

**Oral Session**

	<b>EOR-RS Chairman : Dr. A. Deghmoum</b>	<b>NME Chairman : Dr H.Boublenza</b>	<b>PCE Chairman : Pr S.Bendella</b>	<b>FM Chairman : Dr. O. Bentata</b>
13h30-13h50'	<i>Karima Hammadi</i>	Loubna Benhabib	Soumia Bendella	Sara Yousfi
13h50-14h10'	<i>Farouk Selmi</i>	M.A.Charef	Aicha Djaraba	Samira Bekhadra
14h10-14h30'	Yacine Salhi	Khadraoui Zakaria	Fatiha Ghaleb	<b>NSN Chairman : Pr N.Adnane</b> Mohamed Amine Bouacheria
14h30-14h50	Noujoud Meskoud	Azzi Saliha	Khadidja Khodja	
15h10-15h30	Abdellah Sokhal			





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**15h30-16h00**

**Coffee Break**

**Poster Session**

**Chairman : Pr. H. Ait Kaci**

**Liste des plénières :**

N°	Noms Prénoms	Titre de la communication
1	<b><u>Pr Hafid Aourag</u></b>	How New advanced ultra hard materials have reshaped the industries of oil and gaz.
2	<b>Pr Bachir Bouhafis</b>	Cu-based Half-Heusler alloys for spintronic device: ab-initio prediction of new stable phases.
3	<b>Dr Thibault Roques-Carnes</b>	Chemical Product Design Methodology applied to Formulated Products and Enhanced Oil recovery EOR
4	<b>Pr. Zheyu Liu</b>	Insights into the role of in-situ emulsification in a surfactant/polymer-light oil system with ultra-low interface tension on enhanced oil recovery
5	<b>Dr. Mohamed Khodja</b>	Fluides de forage, EOR et Laitiers de ciments.
6	<b>Pr. Hossein Hidjazi</b>	<b>EOR</b>
7	<b>Dr. Wörner Martin</b>	An energy balance model for the maximum spread diameter upon droplet impact on surfaces of arbitrary wettability
8	<b>Hocine Alla</b>	Design of the chemical EOR by numerical solutions adapted difficult conditions of the reservoir in Algeria
9	<b>Pr. Marco Marengo</b>	Simulating vapour nucleation at nanoscale through diffuse interface modeling.
10	<b>Pr. Yacine Salhi</b>	Two-phase flow in macro and microchannels

**Liste globale des communications orales**

EOR-RS	Nom	Titre
1	Farouk Selmi	Evaluation of the effect of Polymer Flooding on Increasing Oil Recovery and Reducing Barrel Cost.
2	Farouk Selmi	Sensitivity Study of SCAL Parameters on the Performance of WAG Injection Process on Hassi Messaoud Field





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3	Abdallah Sokhal	Rock Type Classification Using, vMachine Learning Algorithms with vPython in Algerian Triassic Sandstone Reservoir
4	Sabeur Amine	Molecular Dynamics simulation of the injection of polymer chains into a nanopore for enhanced oil recovery operations
5	Miloudi Hafida	Microemulsion in EOR
6	Laroussi Kada	pilot design for a test bench pour l'EOR
7	Karima Hammadi	Simulation of injection gas miscible CO <sub>2</sub> and alternative injection of water and gas miscible CO <sub>2</sub> in oil reservoir- case study from Algerian
8	Farouk Selmi	Sensitivity Study of SCAL Parameters on the Performance of WAG Injection Process on Hassi Messaoud Field
9	Yacine Salhi	Numerical simulation of CEOR processes - case studies.
10	Noujoud Meskoud	Performances & uncertainties of the chemical EOR process on Algerian field
<b>NME</b>	<b>Nom</b>	<b>Titre</b>
1	Wassila Sekkal	Advanced green building material for a promising environmental sustainability
2	Hakima Boublenza	First-principles study of optoelectronic properties of Cu-based chalcogenides
3	Mohamed Abdelilah Fadla	Mixed halide perovskite for solar energy conversion, Alloys and their effect on material stability
4	<i>Samir Meziani</i>	Development of selective emitter solar cells with laser doping
5	<i>Hadj Moulay Ahmed Mazouz</i>	Electronic structure, Magnetic and dynamical properties of RbS and CsS : ab initio insight
6	Yazid Zakaria Hamri	Simulation of thin film solar cells of CIGS with AMPS-1D software
7	Oussama Bachir Bouiadjira	Organic MA cation A-site doping in CsPbI <sub>3</sub> perovskite by first principle calculations.
8	Yazid Zakaria Hamri	Numerical modeling of ultra thin Cu(In, Ga)Se <sub>2</sub> solar cells
9	Nasreddine Bouziane	Defect density influence of the crystalline silicon for the structure ITO/a : Si-H/c-Si/Al in the dark and under illumination
10	Mahdjouba Khatiri	First-principles study of the Heusler superconductors Ni <sub>2</sub> ZrX (X= Ga and Al)
11	Loubna Benhabib	Optimization of the photovoltaic efficiency of a cell based on GaAs
12	M.A.Charef	Les biopiles a compbustible biologiques une application pretinante des energies renouvelable





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13	Khadraoui Zakaria	DFT study of the structural, electronic and optical properties of the CoFeRuSn Quaternary Heusler compound.
14	Saliha Azzi	Ab-initio study of the electronic structure of Barium Oxide BaO and the NaBa <sub>3</sub> O <sub>4</sub> alloy
<b>NSN</b>		
1	Lounis Belhimer	The effet of carbon nanotube on microelectronic
2	Nadia Hourri	Porous Carbon as low cost Pt-free counter electrode for dye-sensitised solar cell
3	Siham Djoumi	Tin and Indium promoted Silicon Nanowires growth via plasma assisted vapor liquid solid process
4	Tahir Ghazoul	Nano-reinforced composite structures on elastic foundation: free vibration analysis
5	Chikh Imene	Elaboration and Characterization of a New PVA-CMC/Fe <sub>2</sub> O <sub>3</sub> Semiconductor Composite Biomaterial
6	Asma Kawther Lachachi	Electrical properties and affinity towards hydrogen to the nanoparticuls Cu 0 -loaded SBA-15@ZnO
7	Mohamed Amine Bouacheria	Effect of aluminum doping on electrical properties of ZnO:Al/p-Si heterojunction
<b>FM</b>		
1	Kouadria Amar	Performance hydrodynamiques de mélange des fluids non-Newtoniens dans des dispositifs microfluidiques passifs
2	Oussama Mebarki	Numerical study of the motion of a solid particle carried by a gas in a micrometric system
3	Abderezak Bennis	Cooling of electronic components using convective fluids
4	Tarek Sriba	Numerical simulation of the creation and diffusion of a vortex ring in a non-Newtonian fluid.
5	Sarra Youcefi	Numerical simulation of newtonian and non-newtonian fluid flow in a singularity
6	Samira Bekhadra	Numerical simulation of blood flow in the bifurcation of the carotid artery
<b>CE</b>		
1	Ali Reguieg	Experience of the CHUO neonatology service during the COVID 19 pandemic
2	Bachir Nail	Controlling COVID-19 outbreak in Algeria using metaheuristic optimization algorithm.
<b>NMM</b>		
1	Aida BENMALEK	Doping and co-Doping Impact on the Structural, Electronic and Magnetic properties of CeO <sub>2</sub> : based on first principle calculation
2	Mohammed Hadj Mortada	Homo-lumo, global chemical reactivity descriptors and nonlinear optical properties of 1-benzyl-5-methylindoline-2,3-dione





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BELHACHEMI		
3	Zohra Douaa Benyahlou	Theoretical study of charge transfer, chemical reactivity and nonlinear optics application for a new organic molecule
4	A.Hireche Baghdad	Theoretical investigations study of structural, mechanical and Optoelectronic Applications of ternary semiconductors YAgTe <sub>2</sub> under high pressure.
5	Asma Kadri	Investigation of Various Properties of Anti-perovskite Based Rare Earth AlNSc <sub>3</sub> .
PCE		
1	Soumia BENDELLA	The influence of ammonia on a discharge dbd of ar
2	Aicha DJERABA	Study of measuring bone mass density by dual x-rays absorptiometry
3	Fatiha Ghaleb	The role of silane reactions kinetics on the density distribution in plasma discharges for silicon deposit
4	Khadidja Khodja	Enhanced hydrogen generation by converting pure methane using DBD
RM		
1	Amirouche BOUREMANI	Mathematical modeling of the thermoluminescence (I-TL) in SrY <sub>2</sub> O <sub>4</sub> :Eu <sup>3+</sup>

**Liste des communications poster :**

***Sunday, December 18, 2022***

Nom et Prénoms	Session Poster EOR-RS
Hasnia Benmoussa	Green and rapid extraction of essential oil from Algerian Origanum majorana
Fatima Bekkar	Amélioration de la récupération assistée du pétrole par injection de Surfactants-Polymères
Hanene Zahaf	Design of the chemical EOR by numerical solution adapted difficult conditions of the reservoir in Algeria.

Nom et Prénoms	Session Poster NME New materials for renewable energies (Photovoltaic, thermoelectricity, energy storage (battery))
Adel Allal	Oxygen-functionalized W <sub>2</sub> C MXene as anode material for Na-ion battery: A first-principles study





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Ouafaa Sadouki	The theoretical prediction of cumg 2 als 4 quaternary chalcogenide
Mama Hamlat	Enhancement of the magneto-electronic properties by GGA and TB-mBJ approaches for KBeO <sub>3</sub> perovskite oxide”
Ouafa Hamidane	The investigation on structural, electronic, magnetic and thermodynamic properties of half-metallic materials via first-principles calculations based on density functional theory”
Nezha Benyahia	Comparative study of optoelectronics, mechanical, dynamic properties of GaAs, GaP, and GaAsP Compounds
El Habib Abbes	Investigation of structural, electronic, magnetic and half-metallic properties in ternary Half-Heusler alloy FeVGe : FP-LAPW calculations
Imene Bouhamou	Ab-initio investigation of structural, electronic and elastic properties of Ru <sub>2</sub> CuGe full-Heusler alloy
Mohamed Lamine Belkhir	ab-initio study on the structural, electronic, magnetic, elastic, dynamical stability of quaternary heusler alloys rhcovsi rhcovge and rhcovsn
Nesrine Hamidane	Ab initio calculations of the fundamental properties of half-metallic materials : Possible Candidates for modern spintronics devices
Asma allouche	“Structural,electronic, optical and thermoelectric properties of halide double perovskite Cs <sub>2</sub> AgBiX <sub>6</sub> (X= F ,Br ) : DFT study”
N. E. A. Doghmane	Approximations choice and adequate conditions for the investigation of ZnO properties”
Bourahla Asma	First Principle calculations of structural, elastic, electronic and magnetic properties of Ag <sub>2</sub> BSm full Heusler alloy compounds using GGA and GGA+U: FP-LMTO calculations
Youcef Guermit	Investigation théorique des propriétés structurales électroniques et thermodynamiques de l’alliage Mn <sub>2</sub> ScSi.
Nassima Hammou	Relativistic effects on the structural, electronic and dynamic properties of new hypothetical III-V compounds formed by the group III elements and superheavy element of group V
Souheil Belbachir	First-principle study of Physical properties of new half-metallic quaternary Heusler alloys: CoZrYP (Y=Mn and Fe).
Lilia Beldi	Ab-initio study of electronic structure and magnetism in the rare-earth-based half-Heusler GdPdBi alloy.
Zohra Choualhi	Etude ab-initio de la structure électronique de l’élément Ag
Belmiloud Nawal	Electronic, elastic and lattice dynamical properties of the half Heusler alloys KMgX (X =P, As)

Nom et Prénoms	Session Poster : PCE Plasma and conductive energy
Halima LOUKIL	Experimental study of the electrical and optical characteristics of plasma controlled by a dielectric discharge barriers for UV light emission
Sara Saidi	Analyse électrique et cinétique d'une source plasma de photon dans le mélange Ne/Xe







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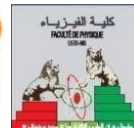
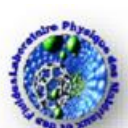
N.Ait Hammouda	Development and study of UV lamps in the 207 nm for biomedical applications
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Nom et Prénoms	Session Poster (CE)
Tekkouk Yamina	Numerical model of two-phase flow in the pulmonary bronchi for the treatment of the covid -19 pandemic

Nom et Prénoms	Session Poster (NSN) Nanostructures and Nanomaterials
Djamel Ould Youcef	Stability of nanostructures 1 D materials
Merkoune Hizia	The electrodeposition of materials in the synthesis of nanostructures
Megherbi Radja	Synthesis and Characterization of CMC-g-PMMA Graft Copolymers and CMC-g-PMMA/TiO <sub>2</sub> ; Fe <sub>2</sub> O <sub>3</sub> Nanocomposites
Rachida Tayeb	Fe(0)-SBA-15 nanoparticles as potential hydrogen adsorbents and sensors

**Monday, December 19, 2022**

Nom et Prénoms	Session Poster NME New materials for renewable energies (Photovoltaic, thermoelectricity, energy storage (battery))
Samira Touat	Ab-initio study of structural, elastic, electronic, and magnetic properties of Mn <sub>2</sub> FeAl full-Heusler alloy.
Khadidja Fatima Zohra NAIR	Prediction of the structural, mechanical and thermodynamic stability of the half-Heusler NiMnAs alloy.
Hamri Asma	First-principles study of the half-metallic behavior in the full-Heusler Co <sub>2</sub> MnV alloy.
Hamri Imène	Stability and magnetism in the quaternary Co <sub>2</sub> CrTixV1-x full-Heusler alloy.
Hamida Heddar	Magnetic properties of GaN/(MnN) <sub>n</sub> /AlN/((CrN) <sub>n</sub> , aN/(MnN) <sub>n</sub> /AlN/((VN) <sub>n</sub> , GaN/(CrN) <sub>n</sub> /AlN/((VN) <sub>n</sub> superlattices (n= 1, 2 )
Fadila Belkharroubi	Investigation of Structural, Elastic, Magnetic and Electronic proprieties for Co <sub>2</sub> LuAs Full-Heusler Alloys
Hocine Kamel	The Structural, Electronic, Optical properties of Oxynitride Perovskite CaTaO <sub>2</sub> N
Djazia Nasri	Ab initio study of structural, electronic and magnetic properties of V-doped ZnS
M. Lebaad Benhafsa	First-principles calculations of structural, elastic, dynamic, electronic, and magnetic properties of Co <sub>2</sub> FeSi full-Heusler alloy.





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HAMRI Bouabdallah	Theoretical investigation of structural, electronic and magnetic properties of Ti-based full-Heusler alloy.
Kara Ilham	Theoretical study of the structural electronic properties of half-Heusler KInSn alloy
Rahmani Rabea	First principles calculations of structural and optoelectronic properties of $\text{XF}_3$ (X= La, Al)
Fatima Zohra Maroc	Study of the physical characteristics of sodium halides in interaction with X-rays
Hayet Sediki	First principles calculations of electronic and magnetic properties of Perovskite $\text{NdGdO}_3$ : a theoretical study
Djezzar Nor El Houda	Investigating new stable phases for the ternary alloy II-VI of $\text{Sr}_x \text{Ca}_{1-x} \text{O}$ : DFT study
Mebtouche Hanane	First-principles calculations of the structural, electronic, mechanical and thermodynamic properties of MAX Phase $\text{Mo}_{n+1} \text{GeC}_n$ ( $n = 1, 2, \text{ and } 3$ ) compounds
Halles El Ajal	First-principles study of structural, electronic, magnetic properties and elastic anisotropy of $\text{Sr}_{1-x} \text{TM}_x \text{S}$ (TM = Fe, Co)
Mazouz Moulay	Electronic structure, Magnetic and dynamical properties of RbS and CsS : ab initio insight
<b>Nom et Prénoms</b>	<b>Session Poster FM Fluid Mechanics : Two-phase flows</b>
Douroum Embarek	Parametric study of the effect of the crossing elongation on the mixing performances of a compact microfluidic system
BENALI AEK	Numerical investigation of the hydrodynamic aspect of a liquid-liquid extraction column at various stirring speeds
<b>Nom et Prénoms</b>	<b>Session Poster RM Modeling and simulation of radiation-matter interaction</b>
Rachid Djeflal	Energy efficiency issues for the development of different climate sites
Maroc Fatima Zohra	Study of the physical characteristics of sodium halides in interaction with X-rays
<b>Nom et Prénoms</b>	<b>Session Poster NMM New magnetic materials &amp; Optoelectronic materials</b>
Mardhi Lina	Numerical simulation of the effect of temperature on the performance of a GaSb-based TPV cell
Arbia Cheriet	Effect of defects on the performances of a TPV cell using InAsSb as active material
Imene Aouad	Electrical and optical behavior of an InAsSb based nBn structure for infrared conversion

**16h00-16h30**

**Work Meeting & Closing Ceremony**





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Responsible (Pr)	Research areas	Code
H.Alla	<u>Enhanced Oil Recovery (EOR) and Reservoir Simulation</u>	EOR-RS
M.Abdelouahab	<u>Fluid Mechanics : Two-phase flows</u>	FM
M.Ferhat & B.Bouhafs	<u>New materials for renewable energies (Photovoltaic, thermoelectricity, energy storage (battery), ...): Modeling (First principle study) and Design.</u>	NME
M.Adnane	<u>Nanostructures and Nanomaterials</u>	NNM
M.Elchikh	<u>New magnetic materials</u>	NMM
S.Hiadi	<u>Optoelectronic materials</u>	OM
S. Bendella	<u>Plasma and energy conversion</u>	PEC
N.Belkaid	<u>Modeling and simulation of radiation-matter interaction</u>	RM
A.L.Khelil	<u>Modeling and analysis of COVID-19 epidemics with treatment</u>	CE

