

International Association of Researchers
In Mechanics and Energy

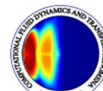


The 9th International Conference on Mechanics and Energy



ICME'2024 Conference Program

December 22-24, 2024, Sousse, TUNISIA



www.icme.aicme.net

ICME' 2024 Conference Program

Time	Sunday/ December 22, 2024	Monday/ December 23, 2024		Tuesday/ December 24, 2024
08:00	Welcome and registration			
08:30		Keynote 3 / Keynote 4		Keynote 5 / Keynote 6
09:30		Oral session 2	Workshop session I (AI)	Oral session 5
10:30		Coffee break / Poster session		
11:00		Oral session 3	Workshop session II (AI)	Coffee break
12:00			Closing Ceremony / Attestation Distribution	
12:30	Lunch	Lunch		
14:00	Official Opening Ceremony	Oral session 4	Workshop session III (AI)	
15:00	Keynote 1 / Keynote 2			
15:30	Coffee break / Poster session	Social visit		
16:00	Oral session 1			
19:00	Dinner	Dinner		

WELCOME TO ICME'2024



REGISTRATION

08H00-12H00



LUNCH TIME

12H15-14H00



OFFICIAL OPENING CEREMONY

14H00-14H30



Chair: **Pr. Mondher Wali & Pr. Mohamed Bouaziz**

(Room 1)

Keynote 1

14H30-15H00

Biomass Valorization with a Focus on Lignin: Challenges and Opportunities in Advanced Biorefineries

Engineering, Institute of Forestry and Engineering, Estonian University of Life

Speaker: **Pr. Timo Kikas**

Estonia

Keynote 2

15H00-15H30

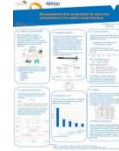
3D printing and tribological friction behaviour of Ti6Al4V implants

Yildiz Technical University, Faculty of Mechanical Engineering, Mechanical Engineering Department Beşiktaş-Yıldız-Istanbul

Speaker: **Pr. E. Hakan KALELİ**

Turkey

COFFEE BREAK & POSTER SESSION



15H30-16H00

ORAL SESSION N°1

16H00-19H00

SS _ Energy and Smart Engineering

Chair: **Pr. Mohamed Bouaziz & Pr. Zidani Mosbah**

(Room 1)

1. **ICME2024-039:** Energy Consumption and Emissions Reduction: A Fuzzy Logic and V2I Eco-Driving Approach for Conventional Buses.
Samia Boubaker, Tarek Othmani, Ferid Rehimi, Souheil El alimi
2. **ICME2024-048:** Sliding Mode Control of a Five-Phase Series- Connected Two-Motor Drive
Omar Zouaid, Lazhari Nezli
3. **ICME2024-057:** Numerical analysis of Hydrogen Enrichment in ammonia/heptane combustion in Internal Combustion Engines
Fathi Hamdi, Wassim Harizi, Mouldi Chrigui
4. **ICME2024-115:** CFD simulation of Solar Air Heater equipped with a curved restriction zone in turbulent flow
Amin Ben mabrouk, Hassene Djemel, Moez Hammami, Mounir Baccar
5. **ICME2024-123:** Statistical Modeling of Combined Electrical Energy Consumption for Fully Electric Vehicles via the Kolmogorov-Arnold Network
Najah Kechiche, Abdessalem Jbara, Hana Mosbahi, Habib Ben aissia
6. **ICME2024-124:** Evaluating the Efficiency of Double Finned Trombe Wall Through Transient 3D CFD Simulations
Nessrine Essid, Zouhayar Al adel
7. **ICME2024-004:** Machine learning-based Meteorological data (solar irradiation and wind speed) forecasting for PV-Wind systems.

Wissem Zghal, Boutheina Ben Fraj, Hamdi Hentati

8. **ICME2024-133:** CFD study of roughened curved restriction zone used in a solar air heater under turbulent flow
Amin Ben mabrouk, Hassene Djemel, Moez Hammami, Mounir Baccar
9. **ICME2024-145:** Innovative thermal regulating materials and systems for energy-efficient and comfortable buildings: A comparative analysis
Nessrine Essid
10. **ICME2024-138:** Comparison of impact responses of 3D printed polymeric sandwich structures: PLA and PETG
Hanen Mallek, Hana Mellouli, Marwa Allouch, Mondher Wali, Fakhreddine Dammak
11. **ICME2024-149:** Parameter identification of a visco-hyperelastic constitutive model for 3D printed PETG components
Marwa Allouch, Ines Zarrad, Hana Mellouli, Hanen Mallek, Mondher Wali, Mohamed Bouaziz

SS _ Innovative Materials

**Chair: Pr. Mounir Baccar & Pr. Mondher Wali
(Room 2)**

1. **ICME2024-015:** Influence Of The Length And Openings Of Cellular Beams On Their Behavior.
Mohamed Lyes Kamel Khouadjia, Oussama Temami, Cherif Belebchouche, Salim Hamlaoui, Sara Bensalem, Bariza Boukni
2. **ICME2024-017:** Use of the response surface method for the best recovery of polystyrene waste in construction mortars.
Assia Aidoud, Messaouda Bencheikh, Salima Boukour
3. **ICME2024-040:** Investigation of the structural and magnetic studies of ball milled asprepared Fe75Ni25 alloys at different time of milling.
Lotfi Faghi, Fatiha Siahmed
4. **ICME2024-112 :** Shape Optimization and Control of Fluid Flow in Porous Media: A Brinkman Approach with Topological Sensitivity
Fatma Boumiza
5. **ICME2024-056:** Hybrid Composite Behaviour Analysis in Hygrothermal Environment
Billel Boukert, Mohamed Khodjet kesba, Amina Benkhedda, El-Abbes Adda bedia
6. **ICME2024-062:** Study and implementation of a compression molding device in the production of thermoplastic test specimens
Ilyes Agengui, Ihssen Jabri
7. **ICME2024-067:** Effect of surface roughness of steel on structural and mechanical properties of galvanization coatings
Younès Benarioua
8. **ICME2024-156 :** Rehabilitation of RC Structures
Rafik Madi, Moufida Gherdaoui, Marwa Bakhouché
9. **ICME2024-068:** Hard Chromium Films Produced by Electrolytic Process on Low Steel Substrates
Younes Benarioua, Younes Kermiche, Selma Baali
10. **ICME2024-070:** Inhibitory effect of a new Schiff base As an effective inhibitor for aluminum corrosion in 0.5 m H2SO4
Sihem Boufas, Laila Lamia Allouche
11. **ICME2024-087:** Comparative study of the water uptake of two bio-composites PLA-DPFs and PLA-PO
Ines Ghanmi, Faouzi Slimani, Samir Ghanmi, Mohamed Guedri
12. **ICME2024-092:** Electrochemical behavior of AISI1080 steel in marine environment applications
Djamel Berdjane, Ali Hafs, Sihem Achouri, Amel Bendjama, Badreddine Maalem

SS _ Smart innovative engineering

**Chair: Pr. Sarhan Karray & Pr. Mohamed Guedri
(Room 3)**

1. **ICME2024-151:** Numerical analysis of the improvement of the performance of the heat sink
Noureddine Bouhamri, Mohammed Bouhafs, Belkacem Belkacem, Ikram Djellid
2. **ICME2024-176:** Design and Construction of a Savonius-type Wind Turbine
Ahlam Djait, Rabab Zaoui, Naima Touati
3. **ICME2024-144:** Comparative study of the hydric ageing of the two bio-composites PLADPFs and PLA-PO
Ines Ghanmi, Faouzi Slimani, Samir Ghanmi, Mohamed Guedri
4. **ICME2024-152:** Tailoring the Mechanical and Thermal Properties of PEEK with Hydroxyapatite Addition for Enhanced Orthopedic Performance
Mohamed Timoumi, Najoua Barhoumi, Amna Znaidi, Abderrahim Maazouz, Khalid lamnawar
5. **ICME2024-163:** Simulation of electronic, elastic and structural properties of semiconductor materials I-Cu₂WSe₄ and I-Cu₂MoSe₄
Oum Keltoum Nebeg, Mohamede Bouchenafa, Abde El Nour Benmakhlouf
6. **ICME2024-162:** Enhancing the Aging Resistance of Reinforced Concrete with Hybrid Fiber Composites: Numerical Analysis
Sofiene Helaili, Roua Knani
7. **ICME2024-164:** Evaluating the Long-Term Effects of Maintenance Mortars on Concrete Aging and Structural Integrity
Sofiene Helaili, Roua Knani
8. **ICME2024-177:** Kitagawa diagram of defective A357-T6 cast aluminium under torsion tension loading based on affected depth
Nesrine Majed, Anouar Nasr, Marwa Youssef
9. **ICME2024-178:** Fatigue strength analysis of EN3B material with hole defects under tensile loading using the affected depth approach
Marwa Youssef, Anouar Nasr, Nesrine Majed
10. **ICME2024-050:** Exploration of the Response Surface Method for Numerical Modeling and Optimization of Retaining Walls in Deep Excavations.
Bencheikh Messaouda, Aidoud Assia, Boukour Salima, Benamara Fatima zohra

DINNER TIME**19H00**

Chair: **Pr. Zidani Mosbah & Pr. Fakhreddine Dammak**
(Room 1)

Keynote 3
08H30-09H00

Surface Treatments of Materials: Classification and Use (Case of Boriding Treatment)

Process Engineering Laboratory, Laghouat University, Laghouat, Algeria

Speaker: **Pr. Allaoui Omar**

Algeria

Keynote 4
09H00-09H30

Advanced Cutting Technologies for Diverse Materials: Comparative Study and Development of Hydrogen-Based Solution

Higher Institute of Technological Studies of Sfax, Tunisia

Speaker: **Pr. Mounir Trabelsia**

Tunisia

ORAL SESSION N° 2

09H30-10H30

SS _ Applied mechanics & physics

Chair: **Pr. Aref Maalej & Pr. Allaoui Omar**
(Room 1)

- ICME2024-051:** Analysis of Turbulent Methane Combustion Behavior in Aeronautical Can Combustors.
Rachid Renane, Rachid Allouche, Ahmed Neche, Hamama Remmal, Maamar Bouziane
- ICME2024-078:** Modeling of Magnetic, Magnetocaloric and electrical properties of $\text{La}_{0.67}\text{xPrxBa}_{0.33}\text{MnO}_3$ ($x=0.1$ and $x=0.2$) Manganite Oxide prepared by sol-gel process
Ameni Hidri, Jaber Khelifi, Omar rejaiba
- ICME2024-141:** Experimental characterization of PETG material reinforced with carbon nanotubes
Imen Messaoudi, Hana Mellouli, Hanen Mallek, Mondher Wali, Fakhreddine Dammak
- ICME2024-165:** A Comprehensive investigation of structural, dielectric, and optical properties of $\text{Pr}_{0.5}\text{Ce}_{0.5}\text{FeO}_3$ perovskite for high frequency and optoelectronic applications
Fakher Hcini, Jaber Khelifi, Kamel Khirouni
- ICME2024-175:** Optical properties of liquid phase CVD deposit-ed oxides thin films doped lanthanide ions
Ridha Elleuch, Marwa Ben chobba, Maryam Mallek, Ramzi Maalej

SS _ Applied mechanics & physics

Chair: **Pr. Mohamed Kaffel & Pr. Sarhan Karray**
(Room 3)

- ICME2024-008:** Analytical and Numerical Analysis of helical Gear of Gearbox in Tramway of Constantine Algeria.
Redouane Zellagui, Leila Khammar, Ahmed Bellaour
- ICME2024-020:** Optimization of waterjet-peening process parameters using finite element simulations.
Rihem Amri, Adnen Laamour, Raouf Fathallah
- ICME2024-054:** Material model validation for waterjet peening process simulation.
Rihem Amri, Adnen Laamour, Raouf Fathallah
- ICME2024-063:** Simulation of multiple crack growth by XFEM
El Hassan Boudaia
- ICME2024-193:** Exploring the Strength of Flexible-Bladed Rotors Using the Fluid-Structure Interaction Approach
Marwa Fakhfekh, Wael Ben amira, Malek Abid , Aref Maalej

Workshop session I “Artificial Intelligence in Engineering Applications”
09H00-10H30
Room 2

Pr. Rahma Boujelben **Tunisia**

COFFEE BREAK & POSTER SESSION


10H30-10H50



ORAL SESSION N° 3
10H50-12H30

SS _ Technologies, Manufacturing, Product and Management

Chair: Pr. Mounir Trabelsi & Pr. Timo Kikas
(Room 1)

1. **ICME2024-003:** Route Planning for multi-truck and multi-drone delivery problem using simulated annealing.
Raida Hantati, Manel Hantati
2. **ICME2024-007:** Mechanical properties and Morphology of ATIG welded ferritic stainlesssteel via binary fluxes.
Abdejlil Chihaoui Hedhibi
3. **ICME2024-011:** Effect of oxide on morphology and mechanical properties of ATIG on SS 316L austenitic stainless-steel welds.
Jamel Chakhari, Abdejlil Chihaoui Hedhibi
4. **ICME2024-041:** Kinematic modeling and analysis of positioning errors of the Print Head in FDM 3D Printers.
Youssef Chouaibi, Faouzi Slimani, Elouni Chebbi, Zouhaier Affi, Lotfi Romdhane
5. **ICME2024-058:** Active Flutter Suppression for a Nonlinear Flexible Flying-Wing Drone using Adaptive Sliding Mode Controller via RBF Neural Network.
Smain Dilmi, Zahra Ragoub
6. **ICME2024-107:** Multi-objective optimization of surface quality and productivity in turning Stellite 6 cobalt al-loy using a hybrid SVR-GRA approach
Riadh Saidi, Tarek Mabrouki, Salim Belhadi, Mohamed Athmane Yallese
7. **ICME2024-108:** Prediction of surface roughness and tool flank wear,nduring the turning process of Stellite 6 based on artificial neural networks
Riadh Saidi, Tarek Mabrouki, Salim Belhadi, Mohamed Athmane Yallese

SS _ Technologies, Manufacturing, Product and Management

Chair: **Pr. Fakhreddine Dammak & Pr. Mohamed Ali Jemni**
(Room 3)

1. **ICME2024-065** : Point Interpolation Meshless Method Analysis of Stress Concentration
El Hassan Boudaia
2. **ICME2024-135**: Models Correlation of Inconel 718 Dry Cutting Parameters Using RSM and ANN Approaches
Hanane Boumaza, Abdelkrim Haddad, Salim Belhadi, Mouhamed Athmane Yaltese, Khaoula Safi
3. **ICME2024-137**: Experimental investigation of flexural strength and stiffness of honeycombsandwich structures produced by FDM
Hana Mellouli, Hanen Mallek, Marwa Allouch, Mondher Wali, Fakhreddine Dammak
4. **ICME2024-140**: An Integrated Approach to Mechatronic Sys-tem, Production System, and Manufacturing Proce Design: Optimizing Solutions Using SBCE Principles and MBSE model
Randa Ammar, Moncef Hammadi, Maher Barkallah, Jean-Yves Choley, Jamel Louati, Mohamed Haddar
5. **ICME2024-182**: Multi-axis machining process of a gas turbine blade
Khadidja Bouhadja, Fethi Remli, Ilyes Hassaid
6. **ICME2024-075**: Path Planning in 3D Static Environments Using ACO, GA, Potential Fields and RRT-Connect Integrated in FreeCAD
Ahmed Nhouchi, Salma Ben said, Mohamed Amine Ben abdallah, Nizar Aifaoui

Workshop session II "Artificial Intelligence in Engineering Applications"**10H50-12H30****Room 2****Pr. Rahma Boujelben****Tunisia****LUNCH TIME****12H30-14H00**

ORAL SESSION N° 4**14H00-15H45****SS _ Fluids & Structure****Chair: Pr. Mohamed Salah Abid & Pr. Mohamed Kaffel
(Room 1)**

1. **ICME2024-010:** Seismic isolation systems for box girder bridges.
Ouanani Mouloud, Sandjak Khaled, Khelafi Mourad abdelouahab, Tiliouine Boualem, Tamahloolt Mohamed
2. **ICME2024-018:** Parametric study of the cylindrical shell structures.
Oussama Temami, Mohamed Lyes Kamel Khouadjia, Cherif Belebchouche
3. **ICME2024-033:** Deposition of Successive Metal Droplets onto Tilted Substrate.
Amel Hadjeri, Mounir Zirari, Mouhamed Kezrane
4. **ICME2024-072:** Flow Topology Utilizing Suction and Blowing from Two Symmetrical Slots Downstream of the Square Cylinder
Lotfi Bouazizi, Said Turki
5. **ICME2024-076:** Numerical modeling of water distillation process
Sobhi Frikha, Mounir Baccar
6. **ICME2024-102:** Numerical study of cooling process of gas turbine blade for several turbulent models.
Youcef Kouzou, Abderrahmane Horimek, Cheikh Kezrane
7. **ICME2024-188:** Study of parameters influencing macro-instabilities
Mariem Ammar, Bilel Ben amira, Zied Driss, Mohamed Salah Abid

SS _ Smart mechanics and fluid engineering**Chair: Pr. Mohamed Guedri & Pr. Hassen Djmal
(Room 3)**

1. **ICME2024-131:** Effect of LPG and hydrogen as alternative fuels on spark-ignition engine performance and emissions; thermodynamic analysis
Mohamed Ali Jemni, Ali Barraji, Mariem Ammar, Mohamed Brayek, Mohamed Salah Abid
2. **ICME2024-170:** Thermal Buckling Analysis for FG Porous Shells Using a 3D IFSDT-Based Solid-Shell Element
Mariem Sahbi, Safieddine Kalleli, Abdessalem Hajlaoui, Fakhreddine Dammak
3. **ICME2024-111:** Hydrodynamic characteristics of a new design for fixed OWC wave energy conversion device using spherical shapes
Mohamed Amine Samet, Mohamed Ali Jemni, Majdi Abid
4. **ICME2024-172:** Pressure-dependent constitutive model for sed-iment-organic matrix composites
Ines Zarrad, Marwa Allouch, Fakhreddine Dammak
5. **ICME2024-190:** 2D numerical modeling of Mass and Heat Transfer in Solid Oxide Fuel Cells Fueled by Biohydrogen
Fatma Mejdoub, Leila Khalfa, M. Bagane.
6. **ICME2024-121:** Exploring the Kolmogorov-Arnold Network for Modeling Carbon Dioxide Emissions from Internal Combustion Engine Vehicles
Abdessalem Jbara, Ahmed Komti, Khalifa Slimi
7. **ICME2024-098:** Prediction of Water Quality Index Using Machine Learning Models
Rania Jradi

Workshop session III "Artificial Intelligence in Engineering Applications"

14H00-16H00

**Chair: Pr. Marwa Allouch & Pr. Hanen Mallek
(Room 2)**

1. **ICME2024-055:** Comparative Analysis of Linear and Non-Linear Machine Learning Models for Predicting Mechanical Properties of PLA-SCRF
Manel Dhouioui, Boutheina Ben fraj, Wissem Zghal, Hamdi Hentati, Mohamed Haddar
2. **ICME2024-079:** Deep learning algorithms for predicting deformation and stress values developed in the micro wind turbine blade manufactured by the 3D printed process
Lachhel Belhassen, Mondher Wali, Fakhreddine Dammak
3. **ICME2024-100:** Application of Stacked Autoencoder approach in SPIF process for springback prediction
Sofien Akrichi, Noureddine Ben yahia
4. **ICME2024-101:** Prediction of Solar insolation and optimization of Photovoltaic systems using machine learning.
Amel Chebbi, Wissem Zghal, Mounir Benaissa
5. **ICME2024-103:** Prediction of thickness variation in SPIF using Deep learning approach
Sofien Akrichi, Noureddine Ben yahia
6. **ICME2024-125:** Modeling and Control of a Grid-Connected Photovoltaic System
Ali Akka, Oussama Moussa, Ali Bouzidi, Allouani Hellali
7. **ICME2024-126:** PI Controller Optimization Based on PSO and BBO for Quadruple Tank System
Ali Akka, Oussama Moussa, Ali Bouzidi, Allouani Hellali
8. **ICME2024-161:** Predictive Design and Analysis of Concrete Slabs Doubly Reinforced with Carbon Composite Plates Using Artificial Intelligence
Sofiene Helaili, Taysir Rezgui
9. **ICME2024-169:** Early Diagnosis of High Fall-Risk Elderly Populations based on Machine Learning approaches
Taysir Rezgui, Haythem Draoui, Sofiene Helaili
10. **ICME2024-191:** Investigating Surface Roughness in EDM: Experimental Observations from C45 Steel
Ikram Messaoudi, Amal Anizi , Boutheina Ben Fraj , Taoufik Kamound , Walid Meslamenid , Hamdi Hentati, Mohamed Haddar
11. **ICME2024-192:** From Sensors to Insights: Revolutionizing Medical Instrumentation with Artificial Intelligence
Omaima Masmoudi, Hamdi Hentati

Social visit



15H30 - 18H30

**DINNER
19H00**



Chair: **Pr. Mounir Baccar & Pr. Samir Ghanmi**
(Room 1)

Keynote 5

08H30-09H00

Experimental expertise of industrial metals using advanced analysis and characterization techniques

*Laboratory (LGEM), U. Biskra
Faculty of Technology, Batna 2 University*

Speaker: **Pr. ZIDANI Mosbah**

Algeria

Keynote 6

09H00-09H30

Valorization of Cellulosic Waste for Bioenergy Production

*Laboratoire d'Electrochimie et Environnement, Ecole Nationale d'Ingénieurs de Sfax, Université de Sfax,
Institut Supérieur de Biotechnologie de Sfax, Université de Sfax, BP 1175, 3038 Sfax, Tunisie*

Speaker: **Pr. Mohamed BOUAZIZ**

Tunisia

ORAL SESSION N° 5

09H30-11H15

SS _ Advanced mechanics

Chair: **Pr. Mounir Baccar & Pr. Mounir Trabelsia**
(Room 1)

1. **ICME2024-117** : A new hybrid model for assessing the reliability of periodic structures
Neji Rabhi, Wafa Azri, Mohamed Guedri, Samir Ghanmi
2. **ICME2024-118** : Comparative Analysis of the Impact of Cast Brass Quantity on the Thermal Fatigue of Shot Sleeves in High-Pressure Casting
Dorra Abid, Ahmed Ktari, Nader Haddar
3. **ICME2024-122** : Impact of heat treatments on the mechanical properties of 6061 T4 and T6 alloys
Dorra Abid, Nader Haddar
4. **ICME2024-127**: Characterization and FEM-SPG Modeling of Bonded Composite Assemblies
Seddik Shiri, Khaled Boulahem
5. **ICME2024-150**: Study and expertise of the properties of industrial metals using advanced and modern analysis and characterization techniques
Mosbah Zidani, Toufik Djimaoui, Amina Ourabi, Thierry Baudin
6. **ICME2024-047**: Non-linear analysis of cold-formed steel double-sigma profile columns under compression loading.
Nadia Gouider, Mohammed Benzerara, Souad Menadi, S.m Anas, Yazid Hadidane
7. **ICME2024-174**: Thermal Performance Analysis of a Parabolic Lens Solar Cooker Based on Key Parameters
Abdelmoumen Hidouri, Kamel Rabhi, Slimen Attyaoui
8. **ICME2024-159**: Copper- oxide coating to combat viral infection surfaces: Antiviral and mechanical efficacy
Kaouther Khelifi, Zied Mannai, W. Bouslama, L. Bouslama, F. Noura Noura, A. Samet

SS _ Fluids & Structure

Chair: **Pr Sana Koubaa & Pr. El Béchir Msaddek**
(Room 2)

1. **ICME2024-106** : Turbine blades cooling improvement by protuberances implementation along air circulating passages
Youcef Kouzou, Abderrahmane Horimek, Cheikh Kouzou

2. **ICME2024-128** : Exploring Ovalbumin-PSSMA Complex Formation via IDLS
Mohamed Rjili, Adel Aschi
3. **ICME2024-013**: CFD Investigation of a Plate Heat Exchanger PHE with Capsule-Inspired Bionic Ribbed Labyrinth Patterns.
Sirine Chtourou, Mounir Baccar
4. **ICME2024-130** : An Assessment of Irrigation Water Quality, Southern Tunisia
Rania Jradi
5. **ICME2024-136** : Computational analysis of a fluid–structure interaction for a flapping flexible plate (FFP)
Sarhan Karray, Mohamed Ali Jemni, Mohamed Salah Abid
6. **ICME2024-139** : Analysis of the Effects of Physical Parameters in Internal Flow using the Highly Stable Lattice Boltzmann Method and MRT Lattice Boltzmann Method
Abdelhak Bahlouli, Adel Lalaoua, Idir Lasloudji
7. **ICME2024-143** : Lattice Boltzmann approach for magnetohydrodynamic Thermosolutal mixed convection in presence of Soret and Dufour effects
Bouthayna Mhamdi, Soufiene Bettaibi, Moez Chafra

SS _ Fluids & Structure / Smart energy

**Chair: Pr. Fakhreddine Dammak & Pr. Hassen Djmal
(Room 3)**

1. **ICME2024-154** : CFD Investigation of Heat Transfer Enhancement Using Phase Material Change PCM Filled Between Double Walls
Fatma Kria, Sirine Chtourou, Jaweher Hamden, Mounir Baccar
2. **ICME2024-155** : CFD Analysis of Heat Transfer Improvement in Double Brick Wall Design Filled with PCM
Jaweher Hamden, Fatma Kria, Sirine Chtourou, Mounir Baccar
3. **ICME2024-049**: Thermal Performance of an Evacuated Tube Heat Pipe Solar Collector.
Rania Ramzi, Imène Saad, Samah Maalej, Mohamed Chaker Zaghdoudi
4. **ICME2024-160** : Comparison between the turbulent models for instantaneous study
Bilel Ben amira, Mariem Ammar, Makram Maaloul, Zied Driss, Mohamed Salah abid
5. **ICME2024-166** : Predictive Design and Analysis of Concrete Slabs Doubly Reinforced with Carbon Composite Plates Using Artificial Intelligence
Sofiène Helaili, Taysir Rezgui
6. **ICME2024-173** : Numerical simulation of a lubrication system using non Newtonian fluid Boubendir Sid ali,
Malki Maamar, Larbi Salah
7. **ICME2024-184** : MIs investigation in the stirred vessel by means of URANS model
Mariem Ammar, Bilel Ben amira, Zied Driss, Mohamed Salah Abid

COFFEE BREAK



11H15-11H45

CLOSURE CEREMONY

11H45-12H15



Poster Session

(This session is taking place on **Sunday & Monday / December 22 & 23, 2024** with the coffee break)

Chair: **Pr. Wissem Zghal & Pr. Mariem Ammar**

1. **ICME2024-001:** Fluid structure interaction modelling of a new configuration of the blades of horizontal-axis wind turbine horizontal axis wind turbine.
Sarhan Karray, Wissem Zghal, Hamdi Hentati, Mohamed Salah Abid
2. **ICME2024-006:** Reduction in stiffness of cracked metal/ceramic sandwich plates under hygro-thermo-mechanical conditions.
Mohamed Khodjet kesba, Zineb Mouloudj, Billel Boukert, Amina Benkhedda
3. **ICME2024-009:** Synthesis and Charge Transport Properties of, Emeraldine Base Poly (omethoxyaniline).
Mahdi Mansour, Nadia Saidi-amroun
4. **ICME2024-012:** Analyzing the acoustic properties of AlxIn1-xP
Ibtissem Touati, Assia Khoualdia, Abir Louiza
5. **ICME2024-014:** Characterization of swirling flow using Artificial Intelligence.
Djemoui Lalmi, Abdessalam Kifouche, Kamel Bouaraour, Abdelmadjid Kaddour, Redjem Hadeif
6. **ICME2024-023:** Rotor unbalance default analysis through Daubechies discrete wavelet and Morlet continuous wavelets.
Abdelkader Djilali Hammou, Ibrahim Abdelhak Briki, Ali Haroun Benarous
7. **ICME2024-029:** Mechanical properties of hybrid composites reinforced with plant fibers.
Rabah Boubaaya, Mokhtar Djendel, Samir Benaniba, Omar Allaoui, Sami Zidelmel
8. **ICME2024-030:** Microstructural and Mechanical Effects of TIG Welding Parameters on Austenitic Stainless Steel Joints.
Mokhtar Djendel, Ayman Khaled, Rabah boubaaya, Samir Benaniba, Mourad maazouz
9. **ICME2024-031:** The pressure influence on structural parameters and mechanical properties of GaAs compound.
Rabah Boubaaya, Abdelghani Khaldi, Mokhtar Djendel, Samir Benaniba, Oualid Naoui, Mounir Rouabah
10. **ICME2024-034:** Enhancing Surface Quality of AISI 1035 Steel Through Optimized Burnishing Parameters.
Ayman Khaled, Mokhtar Djendel, Rabah Boubaaya, Samir Benaniba, Mourad Maazouz
11. **ICME2024-035:** The reliability of temperature measurements in natural gas pipelines
Hanine Hadfani, Nafissa Khennafi-benghalem
12. **ICME2024-037:** Mixed convection study of hybrid nanofluid flow in a trapezoidal cavity with a hot cylinder inside.
Kamel Bouaraour, Amel Trabelsi, Djemoui Lalmi, Mohamed Salem Sidi mohamed
13. **ICME2024-038:** Numerical Modeling of Thermal Distribution of Metallic Powders during Plasma Projection.
Fathi Boukhazani, Redha Rebhi, Mohamed Kezrane
14. **ICME2024-042:** QSPR and MLP-ANN Methods to Predict Boiling Point and Compressibility Factor (Zc) of Pure Hydrocarbon Compounds.
Rayane Boutoutane, Yasmina Lahiouel
15. **ICME2024-044:** Numerical investigation of heat transfer enhancement by the (Al₂O₃-Cu) - H₂O Hybrid Nanofluid traversing a Heated Shallow Cavity.
Chahra Abdellahoum, Amina Mataoui
16. **ICME2024-045:** Experimental indentation analysis to examine the hardness of ceramic materials intended for dental implants.
Hassen Merzouk, Samir Habibi, Benali Boutabout, Amar Abboub
17. **ICME2024-046:** Inverse Problem Using PINNs for Determining Diffusion Coefficients of Boron in Austenitic Stainless Steel 316 L
Messaoudi Nassereddine, Bendeb Asma, Rayane Karim, Allaoui Omar
18. **ICME2024-052:** Experimental and numerical analysis of solar water heater with and without Phase Change Materials.
Sami Missaoui, Eya Missaoui, Zied Driss
19. **ICME2024-053:** Flux decline in ultrafiltration: numerical study and modeling of membrane fouling.
Fahima Lazghad
20. **ICME2024-059:** Green formulation of Water-Based drilling Mud (WBM) with low cost: Substitution of polymers by agricultural wastes Locust Bean Gum LBG

- Malek Bendjaballah, Hacina Saidi
21. **ICME2024-060:** Energy production from the brown Tunisian seaweed *Halopteris scoparia*
Farah Hadjkacem, Jihen Elleuch, Guillaume Pierre, Imen Fendri, Slim Abdelkafi
 22. **ICME2024-061:** Synthesis and Characterizations of Copper modified bentonite nanocomposites as a dependable Substitute for the Catalytic Degradation of Dyes
Oumayma Ghariani, Jihen Elleuch, Imen Fendri, Slim Abdelkafi
 23. **ICME2024-064:** Studies on the structure and properties of unsaturated Epoxy/Luffa fiber composites
Fatiha Siahmed, Lotfi Faghi, Ahmed Belgacem
 24. **ICME2024-066:** Optimization of Dissimilar Welding of CopperStainless Steel using CCDRSM Methodology
Mohamed Farid Benlamnouar, Nabil Bensaid
 25. **ICME2024-071:** Archive CAD models of complex products through MBSE for improved traceability
Imen Belhadj, Mohamed Amine Ben abdallah, Nizar Aifaoui
 26. **ICME2024-073:** Computational Study of Reactive Hypersonic Flow Around Blunt Bodies for Aerospace Engines Including Radiative Heat Transfer
Rachid Allouche, Rachid Renane, Ahmed Neche, Ferial Zekri, Hala Boukhit
 27. **ICME2024-074:** Effect of martensite morphologies of X70 Dual Phase Steel on Corrosion resistance in 5% H₂SO₄ solution
Sami Zidelmel, Laid Abdelkarim Allaoui, Omar Allaoui
 28. **ICME2024-081:** Photocatalytic activity under sunlight by Copper Oxide Thin Films
Nour Elhouda Redjough, Nedjette Belhamra, Lynda Djoudi, Ranida Bourhefir, Houda Hella
 29. **ICME2024-082:** Analysis of the Bolt Inclination Angle during Tensile Testing Using Digital Image Correlation (new optical Method)
Youcef Faci, Allou Djillali, Ahmed Mebtouche
 30. **ICME2024-083:** Effect of precursor concentration on the photocatalytic activities of hydrophilic bi₂O₃ thin films prepared by dip-coating technique
Houda hella, Elhachemi Guettaf
 31. **ICME2024-084:** The impact of lithium incorporation on the properties of the In₂O₃ thin films prepared by ultrasonic spray deposition
Ranida Bourhefir , Hanane Saidi , Nadjette Hamani , Abdellah Attaf , Okba Benkhetta, Amina Youcef, Nour Elhouda Redjough
 32. **ICME2024-085:** Ovalization behavior the shell of a cement rotary kiln - numerical analysis
Mohammed Bouhafs, Nouredine Bouhamri, Ikram Djellid
 33. **ICME2024-086:** Hydrodynamic Modelling of a pendulum wave energy converter
Mariem Ammar, Bilel Ben amira, Mohamed Ali Jemni
 34. **ICME2024-088:** Utilization of date waste as biomass for the production of bioethanol and polyhydroxyalkanoates
Ridha Hachicha, Fathia Madi, Mohamed Hajji
 35. **ICME2024-090:** Fractional-order PID Controller based on Immune Feedback Law in a Smith Predictor Structure
Badredine Boudjehem, Adel Makhbouche
 36. **ICME2024-091:** Effect of Doping with Various Elements on the Physical Properties of Gallium Oxide Thin Films
Fatma Amraoui, Nouredine Sengouga
 37. **ICME2024-093:** Influence of the preparation conditions on the copper oxide thin films via solgel (sping coating)
Imane Ouamane, Abdelghani Lakel
 38. **ICME2024-094:** Artificial intelligence approach to extract I-V-T parameters of NiO/Ga₂O₃ heterojunction diode
Yasmine Senouci, Nouredine Sengouga, Elyes Garoudja
 39. **ICME2024-097:** Effects of gravity on transient evolution of gas-liquid interface in capillary tube
Imen Bahrini, Faycel Khemili, Mustapha Najjari, Samia Abdi ben nasrallah, Abdelmajid Jemni
 40. **ICME2024-099:** Intelligent control of a hybrid production system for electrical energy
Belkacem Belkacem, Nouredine Bouhamri, Mohamed Bouhafs, Said Azzi
 41. **ICME2024-104:** Mechanical Properties of Compressed Earth Blocks with Wood Chip Additions
Tej El Moulouk Zayed, Aya Zoghalmi, Brahim Mazian, Nihel Grich, Walid foudhil, Belgacem Dhifaoui, Sadok Ben jabrallah, Salah Mezlini, Pedro Augusto, Patrick Perre

- 42. ICME2024-105:** Structural and optical characterization of beta-gallium oxide for solar-blind ultraviolet photodetectors.
Lobna Messeddek, Louiza Arab, Nouredine Sengouga, Fatma Amraoui
- 43. ICME2024-109:** Evaluation of Machinability in Hard Turning of AISI 52100 Steel Using Statistical Techniques
Bouchelaghem Hadjira, Yallese Mohamed atheman
- 44. ICME2024-110:** Optimization of welding process parameters for pulsed GTA welding of stainless steel sheets
Nabil Bensaid, Mohamed Farid Benlamnouar, Riad Badji
- 45. ICME2024-113:** Thermal study of a car brake disc
Mohamed Kaffel, Mounir Baccar
- 46. ICME2024-116:** Predictive model for evaluating and optimizing the performance of a Solar Panel using machine learning
Eya Toumi, Wissem Zghal, Hamdi Hentati
- 47. ICME2024-134:** Impact of Physical Parameters on Poiseuille Flow: A Comparative Study Using Finite Differences, Finite Volumes, and Lattice Boltzmann Methods
Abdelhak Bahlouli
- 48. ICME2024-142:** Study of the Machinability of a Developed Composite
Habiba Lekmine, Nabil Kribes, Abderrezak Bezazi
- 49. ICME2024-146:** First-principles study of the structural, electronic and magnetic properties of diluted magnetic semiconductors $(\text{Ba}_{1-y}\text{Ky})\text{F}(\text{Zn}_{1-x}\text{Mnx})\text{As}$
Yasmina Azouz, Kamel Zanat, Badredine Boudjehem
- 50. ICME2024-147:** Raman characterization of amorphous silicon thin films induced by aluminum deposited on glass
Amirouche Hammouda, Nacer Boucherou, Aicha Ziouche, Hayet Boudjellal
- 51. ICME2024-148:** Enhancing PA66-GF30% Machining Efficiency Using OFAT and WASPAS Optimization
Sabrina Haoues, Mohamed Athmane Yallese, Salim Belhadi, Alper Uysal
- 52. ICME2024-158:** Surface Hole Defect Detection of rolled Sheets Based on Pixel Classification Approach
Samira Taleb, Sakina Aoun, Slimane Ziani, Zoheir Mentouri, Adel Boudiaf
- 53. ICME2024-167:** Flexural properties prediction of plant biomass waste biochar reinforced mortar
Messaouda Boumaaza, Ahmed Belaadi
- 54. ICME2024-179:** Hygrothermal Performance of Composites for Biobased Applications
Sana Koubaa, Manel Haddar
- 55. ICME2024-180:** Double half-Heusler Compounds: Novel High Efficiency Optoelectronic Materials for Energy Applications
Mohamed Diaf, Haroun Righi
- 56. ICME2024-181:** The impact of different process parameters on the tensile properties of PLA produced by Fused Filament Fabrication (FFF).
Alia Khanfir chabchoub, Wissem Zghal
- 57. ICME2024-183:** Machining evaluation of Complex surfaces
Mouna Hajltaief, El Béchir Msaddek
- 58. ICME2024-187:** Assessment of Global Solar radiation estimates from Satellite data in Algeria: A Case Study of the Adrar Region
Abdellali Fekih, Mohammed Atoui, Mohammed Elbar Soudani, Lazhar Benmebrouk
- 59. ICME2024-189:** Energetic analysis of bio refinery processes for biofuels obtaining
Leila Khalfa, Ma Bagane

ICMF' 2024 Conference Program

Time	Sunday/ December 22, 2024	Monday/ December 23, 2024	Tuesday/ December 24, 2024		
08:00	Welcome and registration	Keynote 3 / Keynote 4	Keynote 5 / Keynote 6		
08:30					
09:30				Oral session 2	Workshop session I (AI)
10:30				Coffee break / Poster session	Coffee break
11:00				Oral session 3	Workshop session II (AI)
12:00					Closing Ceremony / Attestation Distribution
12:30	Lunch	Lunch			
14:00	Official Opening Ceremony	Oral session 4	Workshop session III (AI)		
15:00	Keynote 1 / Keynote 2	Social visit			
15:30	Coffee break / Poster session				
16:00	Oral session 1				
19:00	Dinner	Dinner			