

the 4<sup>th</sup> International Conference on  
**Renewable & Sustainable Energies and Green Processes**  
**RSEGP - 2024**

December 22<sup>nd</sup> – 24<sup>th</sup> 2024, Sousse, Tunisia

# Detailed Scientific Program

**Sunday, December 22**



08:30 11:00	<b>REGISTRATION</b>		
11:00 11:45	<b>Opening Ceremony</b>		
	<b>Ceremony Chair: Prof. Abdallah Bouabidi</b>		
11:45 12:30	<b>Plenary session 1: Prof. Mohammed El Ganaoui</b>		
	Title: <i>Toward Sustainable buildings by combining renewable energy mix and smart envelope</i>		
	<b>Chair: Prof. Ridha Ennetta</b>		
12:30 14:00	<b>Lunch</b>		
14:00 14:45	<b>Plenary session 2: Prof. Aïda Trabelsi</b>		
	Title: <i>Waste-to-energy and waste-to-materials: sustainable path for circular economy implementation in Tunisia</i>		
	<b>Chair: Prof. Monia Guiza</b>		
14:45 15:45	<b>Oral session 1</b>		
14:45 15:45	<b>Energy (Room1)</b> Session Chair: Prof. Ali Snoussi	<b>Green Synthesis of Materials (Room2)</b> Session Chair: Prof. Samia Ben Ali	<b>Green Processes (Room3)</b> Session Chair: Prof. Hedi Ben Amor
14:45 15:00	<b>(id008): Lotfi Lakhdhar</b> , Propeller Design and Aerodynamic Study: Numerical Approach	<b>(id062): Sabrine Ahmed</b> , Characterization of silica extracted from beach and desert sand and its application for the removal of methylene blue from aqueous solution	<b>(id096): Fayrouz Bechikh</b> , Addressing Water Pollution through Anaerobic Digestion: Evaluating the Impact of Oil Wastewater on Biogas Production
15:00 15:15	<b>(id014): Mokhtar Ferhi</b> , Optimization of Heating Micro-Electro-Mechanical System Design for Enhanced Heat Transfer and Reduced Entropy Generation using Response Surface Methodology	<b>(id115): Khoulood Zaghbani</b> , Biosorption of chromium (VI) by a mediterranean biomass: Posidonia oceanica	<b>(id136): Mouzaina Boutaieb</b> , Biofertilizer production from coffee waste by Hydrothermal Carbonization process
15:15 15:30	<b>(id027): Malek Charfeddine</b> , Exergy Optimization of a Hybrid Multi Evaporative Desalination Plant powered by Solar and Geothermal Energy	<b>(id013): Montassar Najari</b> , Recent Advances in Carbon Nanotube Material Integration for Photovoltaic Performances Enhancement	<b>(id117): Nouha Meftah</b> , Removal of Pharmaceutical Molecules from wastewater Effluents Using a Membrane Process
15:30 15:45	<b>(id030): Zagrouba Houda</b> , Simulation on optical and thermal performance of a cylindrical cavity receiver in a parabolic dish collector system	<b>(id077): Nesrine Ben Ali</b> , Efficient Extraction of Cellulose from various Biomasses for Energy Applications	<b>(id018): Sarra Ounis Dekhil</b> , Valorization of nutshell biomass as an adsorbent in activated carbon for the depollution of water sources contaminated by pharmaceutical products

15:45 16:00	<b>(id041): Najeh Ghilen</b> , Exploring Adsorption Refrigeration for Integration with Hydrogen Production Systems	<b>(id023): Oumayma Baccouch</b> , Creation of crystalline structures in an amorphous carbon-based material	<b>(id022): Khoulood Kraiem</b> , Dehydration of strawberry slices by non-thermal drying assisted by hot water blanching: study of mass transfer and physical properties of final product
16:00 16:30	<b>Coffee break</b>		
16:30 17:15	<b>Special Session: Prof. Mohammed El Ganaoui</b> <i>Cauchemar au Doctorat</i>		

# Monday, December 23

08:30 09:15	<b>Plenary session 3: Prof. Samir Afifi</b> Title: <i>Managing demolition and construction wastes created from natural disasters or man-made conflicts</i> Chair: Prof. Mohamed Debouba		
09:15 10:30	<b>Oral session 2</b>		
	<b>Energy (Room1)</b> Session Chair: Prof. Ali Fguiri	<b>Green Synthesis of Materials (Room2)</b> Session Chair: Prof. Aïda Trabelsi	<b>Green Processes (Room3)</b> Session Chair: Prof. Mottaleb Ouederni
09:15 09:30	(id045): <b>Maha Fguiri</b> , Thermal performance analysis of a Double Skin Façade in hot arid areas: Advances in Net Zero Energy Buildings	(id069): <b>Nesrine Abderrahim</b> , synthesis of composite beads of montmorillonite, alginate and activated carbon for the removal of rhodamine B	(id032): <b>Naima Jery</b> , Hydrothermal carbonized hydrochar composite for paracetamol photocatalysis
09:30 09:45	(id049): <b>Douha ALAYA</b> , A review of waste heat recovery and industrial decarbonization	(id070): <b>Tesnim Dhiss</b> , Development of an Activated Carbon Cathode Embedded with Nano Zero-Valent Iron (NZVI) for Improved Electro-Fenton Degradation of Antipyrine in Water	(id036): <b>Wahiba Bencheikh</b> , Use of the Algerian coal as a low cost adsorbant for Elimination of methylene blue from water.
09:45 10:00	(id059): <b>Ines Marzougui</b> , Improving Stirling Engine Performance Through CFD Analysis and Optimized Working Fluid Selection	(id071): <b>Amira Hrichi</b> , Efficient removal of Ciprofloxacin from ultrapure, hospital and surface water using local clay	(id043): <b>Assala Guedri</b> , Adsorption of 2,4 Dichloro-phenoxyacetic acid on pomegranate peel activated carbon by phosphoric acid activation
10:00 10:15	(id074): <b>Sahbi Ben Abdelwahed</b> , Study of the Impact of Hydrogen Blending on the Performance of a Diesel Engine Powered Electric Generator	(id060): <b>Mariam Ahbil</b> , Activated carbon modified with MOFs nanocomposite: characterization and application of AG25 removal in aqueous solution	(id048): <b>Samah BOUABIDI</b> , Experimental Optimization of Hydrogen Production through Alkaline Elec-trolysis Using the Centered Composite Plan Method
10:15 10:30	(id078): <b>Hiba Chmengui</b> , Enhancement of Thermal Performance in a Double-Pass Solar Air Heater Using Fins	(id120): <b>Mohammed Tayeb Oucif Khaled</b> , Examination of an innovative filter based on Saharan plants for the complementary treatment of treated wastewater.	(id132): <b>Hanan Nouri</b> , Continuous Synthesis of Hydroxyapatite Nanoparticles via 3D-Printed Microfluidic Device
10:30 11:00	<b>Coffee break</b>		
11:00 12:30	<b>Oral session 3</b>		
	<b>Energy (Room1)</b> Session Chair: Prof. Elkafi Hassini	<b>Green Synthesis of Materials (Room2)</b> Session Chair: Prof. Kamel Msaada	<b>Green Processes (Room3)</b> Session Chair: Prof. Ines Bettaieb
11:00 11:15	(id079): <b>Sirine Dhaoui</b> , Improving Solar Still Productivity Using Finned Absorbers	(id112): <b>Meriem Moussa</b> , Filterability of Magnesium Hydroxide Precipitation from Real Tunisian Saltwork's Bitterns	(id126): <b>Mohamed Ismail</b> , Removal of Crocein Orange G in aqueous solution by oxidation with H2O2 catalyzed by clay
11:15 11:30	(id085): <b>Zayneb Hmila</b> , Analyzing Incompressible Fluid Flows in Two-Dimensional Channel Using the Lattice Boltzmann Method	(id129): <b>Sihem Boufas</b> , A new Schiff base as an effective inhibitor for Al 1050 and XC48 carbon steel corrosion in 1 M H2SO4	(id024): <b>Hayet Cherif</b> , Impact of desalinated treated wastewater on fish and crops growth and harmful assessment
11:30 11:45	(id086): <b>Hamdia Ben Hsine</b> , Contribution to the numerical study of the production of entropy in the flow of a fluid subjected to time-varying constraints	(id091): <b>Youcef Touil</b> , Study of the possibility of using the discharge from the Ifri demineralization station of the Ouargla governorate	(id054): <b>Inès Mnif</b> , Green process for Textile Effluent depollution: Optimization of Bacterial Treatment and Improvement of the Process Efficiency through SPB1 Biosurfactant Addition
11:45 12:00	(id088): <b>Rachid Allouche</b> , Numerical Simulation and Performance Analysis of Wind Turbines	(id119): <b>Imen Dhifallah</b> , Common reed as low-cost biosorbent for removal of basic dye from aqueous solution	(id142): <b>Walid Yeddes</b> , Incorporation of rosemary essential oil nanoparticles and grape seeds cake in mineral blocks intended for phytogetic feed additives

12:00 12:15	(id097): <b>Baraa Mnassri</b> , Effect of a rotating cylinder on heat transfer and fluid flow in a cooled rectangular enclosure filled with Power Law non-Newtonian nanofluid	(id127): <b>Aicha Rouabeh</b> , Green construction: A foundational element for the development of smart cities	(id057): <b>Khadija El Arbi</b> , Waste Valorization for Bio-Composite Materials Production: Applications in Thermal Energy Storage
12:15 12:30	(id039): <b>Takwa Hamdi</b> , Computational analysis on the effect of the methanol ratio on the spray development and combustion pattern of a dual-fuel CI engine	(145): <b>Ines Baccar</b> , Environmental Life Cycle Assessment of biodiesel production from waste cooking oil	(id058): <b>Ameni Ben Abdennebi</b> , Optimization of the extraction of almond hulls ( <i>Prunus amygdalus</i> ) by ultrasound: A response surface methodology approach for green extraction
12:30 14:00	<b>Lunch</b>		
14:00 14:45	<b>Plenary session 4: Prof. Erdem Cüce</b> Title: <i>Low-cost, eco-friendly insulation plasters towards low-zero carbon buildings: An experimental and numerical research</i> Chair: Prof. Mohammed El Ganaoui		
14:45 15:30	<b>Poster session</b> Chairs: Mouldi Chrigui, Ali Snoussi, Ali Fguiri, Brahim Metoui, Mottaleb Ouederni, Hayet Cherif, Samia Ben Ali, Sami Guiza, Assem Thabet, Hanen Nouri		
	<p>(id001): <b>Hisham Almuqouz</b>, Study, Design and Performance Analysis of a 10 MW Grid-Connected Photovoltaic System in Zuwarah</p> <p>(id002): <b>Rania Jradi</b> Evaluation of water quality for irrigation reuse, Southern Tunisia</p> <p>(id003): <b>Tunde Oloriegbe</b>, The Nigerian Institute of Transport Technology and the Future of Biofuels: Challenges and Opportunities</p> <p>(id010): <b>Ridha Djebali</b>, Artificial Neural Network Analysis of Particle and Droplet Dynamics and Heat Transfer in a 13.5 kK Axisymmetric Turbulent Ar-H<sub>2</sub> Plasma Jet During Atmospheric Spraying</p> <p>(id012): <b>Karim Khémiri</b>, Implementing a reliable control system for a two-stage AC water pumping system with a reduced number of sensors</p> <p>(id020): <b>Sami Missaoui</b>, Numerical and experimental analysis of solar air heater with and without thermal energy storage</p> <p>(id026): <b>Ridha Boudhief</b>, Experimental study on the productivity enhancement of single slope solar distiller by using convex absorber.</p> <p>(id033): <b>Ali ZINE</b>, Experimental study of a direct solar drying process with a thermal storage System using latent heat.</p> <p>(id035): <b>Fakher Hamdi</b>, Experimental Study of the Thermal Behavior of a Sand Battery</p> <p>(id037): <b>Abdeldjalil Laouini</b>, Solar Drying of Onion Scapes: A Sustainable Solution for Agriculture and Industry</p> <p>(id040): <b>Ahmed Rubaai</b>, Computational Intelligence Tools-Based Fuzzy Logic and Artificial Neural Network for Indoor Smart Grids</p> <p>(id047): <b>Zied Turki</b>, The effects of solid particles on the generation of cavitation in Jet pump</p>	<p>(id066): <b>Sami Missaoui</b>, Two-dimensional axisymmetric model of a submerged coil condenser for sanitary hot water production</p> <p>(id067): <b>Wael Aboussaoud</b>, Coupling adsorption on activated carbon from olive stones with photocatalysis process for pharmaceutical contaminants removal from water</p> <p>(id075): <b>Iness Bettaieb Rebey</b>, Toward sustainable extraction of cumin (<i>Cuminum cyminum</i> L.) seed oil using hexane and supercritical CO<sub>2</sub>.</p> <p>(id080): <b>Khaoula Friji</b>, Experimental and Numerical Analysis of Trombe Wall Thermal Performance: Impact of Baffle Number</p> <p>(id082): <b>Oumyama Toumi</b>, FSW thermo mechanical assessment; numerical study</p> <p>(id084): <b>Louay Zaatra</b>, Removal of antibiotics from water using zinc oxide-based adsorbents</p> <p>(id087): <b>Manel Wakkel</b>, Expanded bed adsorption for protein recovery from crude alfalfa juice</p> <p>(id089): <b>Mehrez Gassoumi</b>, Numerical modeling for a diesel engine fuel with alternatives</p> <p>(id090): <b>Rachid Renane</b>, Performance Analysis of Turbulent Methane Combustion in Aeronautical Can Combustors</p> <p>(id092): <b>Ahlem Haj Ammar</b>, Optimization of Eucalyptus camaldulensis L. Essential Oil Extraction</p> <p>(id094): <b>Mohamed Boughazala</b>, Experimental study to investigate the effect of U-shaped fins on the pyramid solar still performance</p> <p>(id098): <b>Omayma Elakrout</b>, Experimental and numerical investigation of a solar air heater with 1 large-scale V-shaped fins to enhance heat transfer</p> <p>(id099): <b>Mariam Hassene</b>, Energy recovery from olive waste: fixe-bed combustion approach</p>	<p>(id108): <b>Zouhaier Boutar</b>, Experimental investigation of a domestic LPG stove performance and pollutant emissions through novel flame shield arrangements</p> <p>(id113): <b>Sabrina Chamam</b>, Climate Change and Salt Production: Effects of Temperature and Humidity on Evaporation Rates</p> <p>(id114): <b>Warda Ben Atia</b>, Improvement of the cap inclination angle of an LPG gas stove: A numerical method</p> <p>(id118): <b>Nourheine Jemni</b>, Design and study of a sand battery.</p> <p>(id121): <b>Zina Rhimi</b>, Analysis of the energy consumption of a system that produces hydrogen using a solid oxide electrolysis cell (SOEC) electrolysis</p> <p>(id124): <b>Farah Elghoul</b>, Performance Study of Lab-Scale Sequencing Batch Reactor Under Different Organic Loading Rate.</p> <p>(id130): <b>Mansour Issaoui</b>, Synthesis, design and performance of biochar-clay composites for organic pollutants removal from aqueous solutions: A review</p> <p>(id138): <b>Yasir Al Hamadani</b>, Experimentally Application of a Novel Bio Sourced Composite Based on Waste Date Palm Fronds for Heat Exchanger System</p> <p>(id139): <b>Noureddine Rhayma</b>, Parametric Analysis of Building Energy Performances Using BIM</p> <p>(id140): <b>Walid Ben Amara</b>, Performance Analysis a Solar Air Heaters with Helical and Spiral Flow Designs in the Climatic Conditions of Gabes city, Tunisia</p> <p>(id141): <b>Safa Rguez</b>, Eco-Extraction of Onion: Protecting Chicken Patties from Oxidative Degradation</p> <p>(id143): <b>Safa Rguez</b>, Sustainable Extraction of Quercetin from <i>Allium cepa</i> Using Vinegar: An Eco-Friendly Approach</p>

**(id050): Imen LASSIOUED**, Estimation of the Convective Heat Transfer Coefficient of a Wall Using an Inverse Method

**(id051): Souhir Echi**, Geometry optimization of an industrial sulfur furnace by adding a circular baffle near the outlet using CFD

**(id052): Emna Chaabani**, Hansen solubility parameters applied to green extraction intensification of iso-rhamnetin glycosides from *Nitraria retusa* leaves

**(id055): Inès Mnif**, Application of biosorption as an eco-friendly method for the treatment of synthetic dyes contaminated water: Use of date palm waste flour and *Bacillus mojavensis* BI2 derived Lipopeptide as biosorbents

**(id056): Dorsaf Othmani**, Optimization preparation and physicochemical characterization of biochar from palm date waste: Cd<sup>2+</sup> adsorption application

**(id100): Najoua Mekaddem**, A Bibliometric Analysis of the potential use of phase change material (PCM) in Plaster

**(id102): Jihen Mahdhi**, Numerical Analysis of a Parabolic Trough Solar Collectors (PTSC) with non-evacuated glass envelope

**(id103): Ouahiba AZIEZ**, Dimensionnement d'un Système d'évacuation des eaux et des sels en excès des palmeraies d'El Makhadma (Ouargla)

**(id104): Soumaya Ibrahim**, Design, Development, and Performance Evaluation of a Decantation Unit for Clarifying Flocculated Suspensions

**(id105): Mehdi Dhaoui**, Remote control and monitoring of the photovoltaic pumping station

**(id107): Sassi Rekik** Strategies Assessment for Accelerating Renewable Energies Development using MCDM Approach: A case of Libya

**(id144): Walid Yeddes**, Microencapsulation of Essential Oils from *Rosmarinus officinalis*, *Thymus vulgaris*, and *Citrus aurantium*: Chemical Composition, Antioxidant Activity, and Potential Applications in Food and Pharmaceuticals

**(146): Ines Baccar**, Carbon footprint calculation of biodiesel produced from three vegetables oils: rapeseed oil, soybean oil and palm oil

**(id147): Youcef Touil**, Solid waste valorization for efficient wastewater treatment

15:30  
17:15

**Free activity**

08:30 09:15	<b>Plenary session 5: Prof. Léo Courty</b> Title: <i>Ignition and combustion of energetic materials and metal dust</i>  Chair: <b>Prof. Mouldi Chrigui</b>		
09:15 10:30	<b>Oral session 4</b>		
	<b>Energy (Room1)</b> Session Chair: <b>Prof. Mohamed Elhedi Attia</b>	<b>Green Synthesis of Materials (Room2)</b> Session Chair: <b>Prof. Aicha Guesmi</b>	<b>Green Processes (Room3)</b> Session Chair: <b>Prof. Sami Guiza</b>
09:15 09:30	<b>(id021): Ahmed Ayadi</b> , Effect of numerical parameters on the simulation results of a Darrieus wind rotor	<b>(id081): Louay Zaatra</b> , Removal of antibiotics from water using activated carbon prepared from synthetic organic material	<b>(id064): Asma Ahmed</b> , Diclofenac sodium removal using acid-activated bentonite clay: kinetic and thermodynamic studies
09:30 09:45	<b>(id101): Ichraf Hammadi</b> , Experimental Investigation for Pelton Turbine Performance	<b>(id135): Zouhour Alya</b> , Effect of temperature on the cyclic CO2 capture on almonds shells based	<b>(id065): Fatma Zahra Sellami</b> , The Anaerobic Digestion of Fruit and Vegetable Wastes for Biogas Production
09:45 10:00	<b>(id044): Souad Tayari</b> , Effect of end plates and aspect ratio on performance of a Savonius wind turbine	<b>(id025): Soumaya Aribi</b> , Exergo-environmental life cycle assessment of di-ammonium phosphate fertilizer production: a Tunisian case study	<b>(id068): Zineb Hamida</b> , Vitex Agnus-Castus oil as an ecofriendly inhibitor for carbon steel in 1 M HCl
10:00 10:15	<b>(id128): Walid Zaafouri</b> , Experimental study on the design of a new vertical solar water heater under different seasonal weather conditions in Tunisia	<b>(id133): Messaouda Charikh</b> , Hydrodynamic characterization of arid soils in the Algerian Sahara	<b>(id017): Ikhlas Benkhoud</b> , Regeneration of spent bleaching earth: characterization and adsorption capacity
10:15 10:30	<b>(id029): Guy Trudon MUYA</b> , Optimization of a combined absorption cooling cycle with the Kalina cycle	<b>(id083): Amna Chahbani</b> , Thermal Processing effects on drying kinetics, bioactive compounds and antioxidant activity of garlic ( <i>Allium sativum</i> L.) leaves	<b>(id111): Marzougui Salem</b> , Epsomite recovery from real Tunisian saltwork bitterns: a sustainable pathway for industrial waste valorization
10:30 11:00	<b>Coffee break</b>		
11:00 12:00	<b>Oral session 5</b>		
	<b>Energy (Room1)</b> Session Chair: <b>Prof. Rachid Renane</b>	<b>Thermal Green Processes (Room2)</b> Session Chair: <b>Prof. Ahmed Hannachi</b>	<b>Green Processes (Room3)</b> Session Chair: <b>Prof. Souad Najjar</b>
11:00 11:15	<b>(id063): Ilhem Yahya</b> , Investigation of Diesel Engine Generator Performance Using Microwave-Assisted Biodiesel Blends: A Response Surface Methodology Approach	<b>(id053): Takwa Tabbessi</b> , Experimental and numerical investigation on the melting and solidification behavior of paraffin in a heat exchanger	<b>(id093): Amira Touil</b> , Effect of the drying process on the yield and quality of bioactive extracts of <i>Citrus sinensis</i> , <i>Citrus limon</i> and <i>Citrus aurantium</i>
11:15 11:30	<b>(id042): Samuel Molima Epomba</b> , Numerical Simulation of Combustion Processes in Dual Fuel Engines	<b>(id116): Marwa Othmen</b> , Enhancing Thermal Energy Storage in Solar Collectors with Phase Change Materials	<b>(id028): Sihem Dadi</b> , Hydrothermal carbonization of spent coffee grounds: Optimization of experimental parameters
11:30 11:45	<b>(id073): Elkafi Hassini</b> , Powering Last-Mile Delivery with Smart Mobile Parcel Lockers: A Sustainability Assessment	<b>(id137): Taissir Aidi</b> , Modelling and simulation of electroflotation bubble column in the case of high bubble flow	<b>(id134): Rabia Slimani</b> , Assessment of the chemical quality and suitability for irrigation of groundwater from the Terminal Complex aquifer in Guerrara, Algeria
11:45 12:30	<b>Closing Ceremony</b>		
12:30 14:00	<b>Lunch</b>		
	<b>Prof. Ridha Ennetta</b>		