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Ministry of Higher Education and Scientific Research
University of Mohamed El Bachir El Ibrahimi, Bordj Bou Arreridj
Faculty of Sciences and Technology



CERTIFICATE OF PARTICIPATION

PROUDLY PRESENTED TO

Asma Chetouani, Hichem Haffar, Meriem Elkolli

for presenting their paper at The First International Conference on Green Engineering (ICGE-25), held on 12-13th May, 2025 at the university of Mohamed El Bachir El Ibrahimi, Bordj Bou Arreridj in Algeria.

Paper entitled:

Macromolecule-Based Formulation For Wound Healing And Environmental Protection



Macromolecule-Based Formulation for Wound Healing and Environmental Protection

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Abstract

Wound healing and environmental protection require innovative bio-based materials. This study presents a macromolecule-based formulation incorporating biopolymers and bioactive natural oils, designed for biomedical applications and potential environmental benefits. The formulation optimizes stability and bioactivity while maintaining eco-friendly characteristics. Stability tests confirmed high resistance to physical and chemical variations. In vitro assays demonstrated improved blood coagulation, suggesting applications in hemostasis. In vivo wound healing experiments revealed accelerated tissue regeneration, reduced inflammation, and enhanced recovery. The interaction between macromolecules and bioactive oils played a crucial role in these effects.

These findings highlight the potential of macromolecular formulations for wound care and sustainable materials in environmental protection. Further research will optimize this formulation for broader biomedical and eco-friendly applications.

Keywords

Biomedical formulation, Macromolecules, Blood coagulation, Regenerative medicine, Environmental protection

INTRODUCTION

Introduction

Wound healing is a fundamental biological process essential for tissue regeneration and recovery. However, the presence of infections, oxidative stress, and delayed healing in chronic wounds pose significant challenges in clinical settings [1]. Advances in biomaterials have led to the development of biopolymer-based formulations that enhance healing while minimizing environmental impact [2]. These materials provide bioactive properties, promoting cell proliferation and reducing inflammation [3].

Natural biopolymers such as chitosan, alginate, and collagen have gained attention due to their biocompatibility, biodegradability, and intrinsic healing properties [4]. Furthermore, the incorporation of bioactive oils with antimicrobial and antioxidant properties enhances the therapeutic potential of these formulations [5].

This study aims to develop a macromolecule-based formulation designed for wound healing while addressing environmental sustainability. The formulation's physicochemical properties, stability, and biological performance were evaluated to determine its potential applications in both biomedical and ecological fields.

II. Materials and Methods

The formulation was prepared using a combination of natural biopolymers, including chitosan and polysaccharides, combined with bioactive plant-derived oils. Stability tests were conducted under different temperature and pH conditions. In vitro studies included coagulation assays and antioxidant activity evaluation. In vivo experiments were performed on an animal model to assess wound healing efficacy.

III. Results and Discussion

Stability tests demonstrated that the formulation remained intact under varying environmental conditions, confirming its suitability for biomedical applications. The in vitro coagulation assays revealed a significant increase in clotting speed compared to control samples, suggesting its potential use in hemostatic applications.

In vivo studies showed that wounds treated with the macromolecule-based formulation exhibited faster closure rates, reduced inflammation, and enhanced tissue regeneration compared to untreated wounds. The synergy between biopolymers and bioactive oils played a critical role in accelerating the healing process.

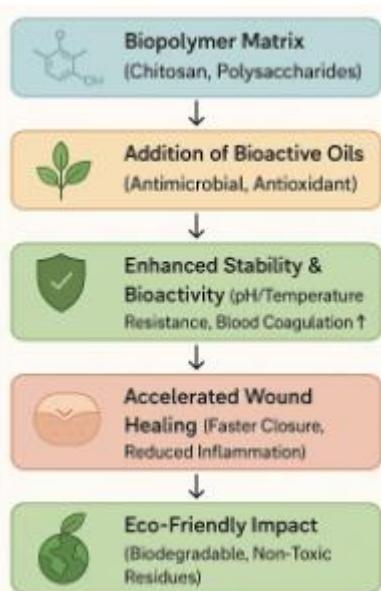


Figure I. Mechanism of macromolecule-based formulation in wound healing and environmental protection

The table I summarizes the results from tests assessing various aspects of the product, including stability, blood coagulation, antioxidant properties, in vivo healing, and environmental impact. The findings indicate a stable formulation under temperature and pH variations, a 30% reduction in clotting time, high antioxidant capacity, faster wound closure with reduced inflammation in animal models, and a favorable environmental impact with high biodegradability and non-toxic, eco-friendly materials.

Table I. Evaluation of Product Properties:

Evaluated Aspect	Methodology	Results
Stability	Tests under temperature and pH variations	Stable formulation
Blood Coagulation	In vitro clotting time tests	30% reduction in clotting time
Antioxidant Properties	Measurement of radical scavenging activity	High antioxidant capacity
In Vivo Healing	Application on animal wound models	Faster closure, reduced inflammation
Environmental Impact	Use of natural biopolymers and plant oils	High biodegradability, non-toxic, eco-friendly

IV. Conclusion

This study demonstrates the potential of macromolecule-based formulations in regenerative medicine and sustainable material science. The combination of biopolymers and bioactive compounds enhances both wound healing and environmental sustainability. Further research will focus on optimizing the formulation for

clinical and eco-friendly applications.

References

- [1] R. Gurtner et al., "Wound healing: Normal and abnormal," *Annu. Rev. Med.*, vol. 59, pp. 231-246, 2008.
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- [3] K. Dai et al., "Bioactive wound dressings based on natural polymers," *J. Mater. Chem. B*, vol. 9, pp. 5707-5720, 2021
- [4] A. Elkhoury et al., "Chitosan-based biomaterials in wound healing applications," *Carbohydr. Polym.*, vol. 250, p. 116885, 2020.
- [5] S. Mukherjee et al., "Role of essential oils in wound healing: Current research and future perspectives," *J. Tissue Eng. Regen. Med.*, vol. 14, pp. 1079-1092, 2020

CONFERENCE PROGRAM

Honorary Chair	Pr. Bouazza Boudersaya Rector of the Univ. of B. B. Arreridj
General Supervisor	Dr. Ammar Noui
General Chairman	Dr. Oussama Kessal
Scientific Committee Chair	Dr. Ahmed Abderraouf Belkadi
Technical Program Chair	Dr. Abdallah Bengueddoudj
Local Organizing Chair	Pr. Tahar Tayebi
Publication Chairs	Dr. Abdelhafid Benammar Pr. Abdelhamid Iratni
Track Chairs	Dr. Fatma Zohra Hadagha Pr. Tahar Tayebi Dr. Soulef Boussahel Dr. Abdenour Hacine-Gharbi

First day	
Monday May 12th, 2025	
The Opening Ceremony	09:00 to 09:30
<ul style="list-style-type: none"> • Verses from the holy Quran • Algerian national anthem • Prof. Bouazza Boudersaya Rector of the Univ. of Bordj Bou Arreridj • Dr. Ammar Noui Dean of the Faculty of Sciences and Technology • Dr. Oussama Kessal General chairman of the ICGE'25 	
First Plenary by Prof. El-Hadj Kadri from Cergy-Pontoise University France	09:30 to 10:00
Second Plenary by Prof. Amar Benazzouk from University of Picardie Jules Verne, France	10:00 to 10:30
Third Plenary by Prof. Noureddine Hamdi from Higher Institute of Water Sciences and Techniques, Tunisia	10:30 to 11:00
Fourth Plenary by Dr. Malek Boualem from France Telecom Orange Labs, France.	11:00 to 11:30
Q&A Session	11:30 to 12:00
Second day	
Tuesday May 13th, 2025	
First Plenary by Prof. Ladjel Bellatreche from National Engineering School for Mechanics and Aerotechnics (ENSMA), Poitiers, France	09:30 to 10:00
Second Plenary by Dr. Katiba Mezreb from University of Picardie Jules Verne, France	10:00 to 10:30
Third Plenary (Virtual) by Prof. Ali Chamkha from Kuwait College of Science and Technology	10:30 to 10:11
Q&A Session	11:00 to 11:30
Closing ceremony	11:30 to 12:00

Monday May 12th , 2025 14:00 To 16:00	4 Oral Conferences	6 Online Conferences
Monday May 12th, 2025 16:00 To 16:30	Coffee Break	Posters Session 1
Tuesday May 13th, 2025 08:30 To 09:30	Posters Session 2	

Monday May 12th, 2025 Session 1 (Oral Presentations In-Person)			
Topic	Paper ID	Conference Title	Time
Topic 1 : Sustainability Of Eco-Friendly Materials	30	Synthesis And Characterization Of Agar-Alginate Composite Beads Impregnated With Phosphonium-Based Ionic Liquid For Green Engineering Applications. Author(S): Kacel Tinhinane, Ouahida BENSEBIA.	14:00 – 14:10
	56	Carbon Footprint Of Mortar Based On Limestone, Marble Powder, And Natural Pozzolana: A Comparative Study . Author(S): Makhlouf Ali, Douadi Abdellah, Cheniti Hamza, Drouiche Abdelmadjid, Aissi Adel	14:10 – 14:20
	63	Engineering Properties Of Non-Loading Hollow Concrete Blocks Based On Recycled Waste Of Plastic . Author(S): Deboucha Sadek, Ziani Hocine, Amriou Abderrachid, Guelmine Layachi	14:20 – 14:30
	110	Optimizing Cork's Compressive Recovery For Green Buildings: Critical Effects Of Strain, Anisotropy And Steam Treatment. Author(S): Yahiaoui Cylia, Mouadji Youcef, Saadallah Younès	14:30 – 14:40
	136	Integrating Crack Detection And Pipe Shape Optimization For Enhanced Sewage System Durability. Author(S): Elsherif Hossameldin, Megri Ahmed, Hamoush Sameer	14:40 – 14:50
	175	Contribution To The Formulation And Characterization Of A Sustainable Building Material. Author(S): AISSI Adel, Makhlouf Ali	14:50 – 15:00
	190	Bio-Based Building Solutions: A Comprehensive Review Of Plant Fibers And Organic Phase Change Materials For Sustainable Construction. Author(S): Kehli Khadidja, Belhadj Belkacem	15:00 – 15:10
	218	Modern Approaches To Historic Facade Restoration: 3D Scanning And Engineered Stone Integration. Author(S): Megri Ahmed, Hamoush Sameer, Amankwah Yaw , Yu Yao	15:10 – 15:20
	224	Evaluating Energy Audit Software For Sustainable Building Performance: A Case Study Of Energoaudits.Eu. Author(S): Abdellah ZERROUG, Bouchama Ziad	15:20 – 15:30
	45	The Diffusion Angle Distribution Of Slow Electron/Positron Impinging In Semi-Infinite Solids: Analytic Calculation Author (S) : Abdelouahab Bentabet	15:30 – 15:40
	212	From Agro-Waste To High-Performance Biofillers: Dual-Scale Cellulose Extraction From Date Palm Fibers For Sustainable Composite Applications. Authors : Amina Hachaichi, Benalia Kouini.	15:40 – 15:50
	87	Manganese-Rich Layered Oxides Electrode Materials For Symmetrical Supercapacitor Application. Author: Fatsah Moulai	15:50 – 16:00

Monday May 12th, 2025			
Session 2 (Oral Presentations <i>In-Person</i>)			
Session Chair:			
Topic	Paper ID	Conference Title	Time
Topic 2: Green Thermal Engineering	100	Study Of The Thermal Behavior Of A Radiant Cooling Panel In Different Climatic Zones Of Algeria. Author(S): Wassiaa Farah Mahmouche	14:00 – 14:10
	162	Thermal Melting Analysis Of A Non-Newtonian Phase Change Nanocomposite (OM08-MWCNT) In A Semi-Cylinder. Author(S): ADNANI Massinissa, SAHI Adel, BENSLIMANE Abdelhakim, KOLSI Lioua, CHEFFAR Louiza, EL GANAOUI Mohammed, J. Chamkha Ali	14:10 – 14:20
	197	Drying Food Products Using An Indirect Hybrid Solar Dryer.. Author(S): BEN RABAH Athmane, Happy Sinkala Happy, Khelladi Mohammed , HEMIS Mohamed	14:20 – 14:30
	201	Data-Driven Assessment Of Heat Pump Efficiency For Residential Climate Control. Author(S): Megri Ahmed, Yu Yao, Elsherif Hossameldin , Hamoush Sameer	14:30 – 14:40

Monday May 12th, 2025 Session 3 (Oral Presentations <i>In-Person</i>) Session Chair:			
Topic	Paper ID	Conference Title	Time
Topic 3: Green Materials And Applications	07	The Importance Of Watershed Characteristics In Developing Effective Flood Protection Structures In Algeria. Author(S): Herizi Toufik	14:00 – 14:10
	43	Assessment Of An Eco-Binder Based On Dam Sludge. Author(S): Chikouche Mohamed Aziz, Boualleg Saida, Baali Laid, Bibi Mekki	14:10 – 14:20
	109	Artificial Neural Networks For Predicting Earth Material Thermal Conductivity: Role Of Feature Scaling Techniques In Model Accuracy. Author(S): LAIMECHE Abderrahim, Derfouf Feth-Ellah Mounir , Mekaideche Khalfallah , Abou-Bekr Nabil	14:20 – 14:30
	137	Machine Learning Tools To Identify Soil Properties Using Subsurface Ground Penetrating Radar (GPR). Author(S): Akbakri Hamzeh, Elsherif Hossameldin, Megri Ahmed, Hamoush Sameer	14:30 – 14:40
	152	The Effects Of Slag Treatment On The Consistency And Friction Angle Of Sliding Soil Tikejda. Author(S): Saoudi Nacira, CHERFA HAYET , SAOUDI Brahim	14:40 – 14:50
	153	Green Engineering In Reverse Logistics: Eco-Friendly Vs. Standard Packaging For A Circular Economy . Author(S): BENHAMMA Fahima, Bellaouar Ahmed , Abdelli Safia, Bensouyad Meriem, Benhamma Zina	14:50 – 15:00
	164	Study Of The Correlation In Rydberg Atoms For Qubits Conception. Author(S): Grar Nabila, Leila Chia.	15:00 – 15:10
	189	Investigation Of Longitudinal And Transversal Repair Orientations For Cracked Concrete Beam In Bending: A Numerical Study. Author(S): Amina Lazizi, Salima Abdelbbari, Belabbes Bachir Bouidjra	15:10 – 15:20
	198	Impact Of The Lightening Factor On The Thermal And Mechanical Properties Of Lightweight Concrete: Case Of Wood And Polystyrene Aggregates.. Author(S): Meziane Lylia, Ziregue Ahmed, Ziregue Belkacem, Guasmia Amel Kenza	15:20 – 15:30
	89	Sustainable Approach On The Swelling Behavior Of The Clayey Soil In The Region Of n'Gaous-Batna, Algeria.. Author(S): BENABDELMOUMENE ZAKARIA, Baheddi Mohamed, Bougouffa Imene	15:30 – 15:40
	159	Development Of A Green Mobile Application For An Eco-Friendly Lifestyle In Algeria. Author(S): Attia Safa, Bekkai Mohib Eddine, Marah Ayoub	15:40 – 15:50
	194	Recovery Of Granulated Slag And Dune Sand In Road Engineering. Aouthors(S): Hayet CHERFA, NACIRA SAOUDI, BRAHIM SAOUDI, ALI SMAIDA.	15:50 – 16:00
	117	High-Performance Roller-Compacted Concrete For Dry Ports And Storage Facilities. Author(S) : Wafa Hamla, Benouadah Abdelatif	16:00 – 16:10



194	Recovery Of Granulated Slag And Dune Sand In Road Engineering. Authors: Hayet CHERFA, BRAHIM SAOUDI, ALI SMAIDA.	16:10 – 16:20

Monday May 12th, 2025 Session 4 (Oral Presentations <i>In-Person</i>)			
Topic	Paper ID	Conference Title	Time
Topic 4: Green Intelligent Systems	48	Advanced Machine Learning And Swarm Intelligence For Enhanced Cyanobacterial Bloom Prediction: A Comparative Study. Author(S): Oumaima Bounekhlia, Meriem Hemici, Nadjette Dendani	14:00 – 14:10
	58	Optimal Effective Electricity Markets Monitoring In Deregulated Environment Including Renewable Energies. Author(S): Selkim Djamel, Kouba Nour EL Yakine, Nait Seghir Amirouche	14:10 – 14:20
	119	A Review Of Key Factors Influencing Energy Consumption In Electric Traction Systems. Author(S): Noui Meryem, Lashab Abderezak , Benidir Mohamed , Noui Ammar	14:20 – 14:30
	124	Performance Evaluation Of Unambiguous Tracking Techniques For BOC-Modulated GNSS Signals Under Challenging Conditions. Author(S): Bengherabi Ayoub, FLISSI Mustapha, Rouabah Khaled	14:30 – 14:40
	161	Machine Learning For Misbehavior Detection In Next-Generation Vehicular Networks: Towards Safer And Greener Mobility. Author(S): MOUSSAOUI BOUBAKEUR, Mekhfi Baya, Madi Ahmed Salah Eddine	14:40 – 14:50
	179	Energy Enhancement In PV Arrays Driven Modern And Conventional Optimization Techniques Under Mismatching Conditions. Author(S): Bennia Rachid, BELHACHAT Faiza , LARBES Cherif , Yousfi Abderrahim , Saidani Okba , Zerrougui Raouf	14:50 – 15:00
	207	Embedded Solutions For Optimizing Performance In Photovoltaic Systems. Author(S): BELHACHAT Faiza, Rachid Bennia, Cherif Larbes	15:00 – 15:10
	111	Implementation Of A Fuzzy Approach To Ensure Better Efficiency Of A Photovoltaic System With Extraction Of Their Maximum Power. Authors: Amel Sabrine Amari, Ahmed Hafaifa, Abdelhamid Iratni, Ilhami Colak, Nadji Hadroug	15:10 – 15:20
	149	Design Of PV Panel Emulator Based On ANFIS And Fuzzy Logic Control. Author : Abdelkarim CHOHRA, Mohammed BENMLOUD, Khaled AMEUR, Aboubakeur HADJAISSA,Nabil ABOUCHABANA, Abdelhamid RABHI	15:20 – 15:30
	106	A Novel Jute-Based Cooling System For Enhanced Solar Power Generation.Author(S): Mahmoud Chaabani,Sami Zdiri, Slah Sbika	15:30 – 15:40
	205	Optimization For Standalone Photovoltaic System Using Starfish Optimization Algorithm. Author(S): Bouguerra Tarek, Zarour Laid	15:40 – 15:50
	220	Towards Sustainable Smart Maintenance For Electric Vehicles: Applying Machine Learning Techniques In Fault Prediction And Operational Efficiency Enhancement. Author(S): Moussa ATTIA, Zoubir Aoulmi, Merwan Saadsaoud, Leyla Younes, Rabah Daouadi	15:50 – 16:00

Monday May 12th, 2025 Session 1 (Online Presentations) GoogleMeet : https://meet.google.com/uhe-fcnm-ndf			
Topic	Paper ID	Conference Title	Time
Topic 1 : Sustainability Of Eco-Friendly Materials	29	Towards A Lower Carbon Footprint: Synthesis Of A Sediment-Based Geopolymer. Author(S): Mohamed Salah Mouaissa, Marouf Hafida, Ali-Dahmane Tewfik, Ali-Dahmane Tewfik, Maherzi Walid	14:00 – 14:10
	65	Improving The Mechanical And Physical Properties Of Sustainable Mortars Through The Use Of Chemically Treated Recycled Aggregates. Author(S): Mohamed Chems Eddine Antouri, Tarek Djedid, Fatma Zohra Melais, Mohamed Mani, Djaafar Salemi, Amirouche Berkouche	14:10 – 14:20
	102	Thermal Resistance Properties Of Environmentally Sustainable Flowable Sand Concrete Using Solid Waste. Author(S): Djamil Boukhelkhal, Mohamed Guendouz	14:20 – 14:30
	108	Eco-Friendly Plaster-Based Composite Mortars: Sustainable Integration Of Recycled Plastic Waste. Author(S): Farid Brahim HOUTI, Ahmed Soufiane BENOSMAN , Mohammed MOULI , Abdelhaq BADACHE , Omar TALEB, Imane Fatema Zohra MESLI , Houssam HACHEMI , Baghdad Adel ZOUGHAR	14:30 – 14:40
	64	Designing High-Performance PBSA-Based Biopolymers: A Step Towards Green Materials. Author(S): BENSALEM Zineddine, Chabane Houssém, MEKKI Ahmed	14:40 – 14:50
	105	Evaluation Of Powdered Activated Carbon In Enhancing The Coagulation–Flocculation–Sedimentation Process. Author(S): Benhachem Fatima Zahra, Bendjelloul Meriem, Miraoui Abdelkader	14:50 – 15:00
	138	Characterization Of Adobe Bricks Reinforced With Date Palm Fibers. Author(S): Guettatfi Lamia, Himouri Khedidja, Hamouine Abdelmadjid	15:00 – 15:10
	177	Impact Of Stabilization And Reinforcement With Plant Fibers On Water Durability Of Earth Concrete. Author(S): Guettatfi Lamia, Himouri Khedidja, Hamouine Abdelmadjid	15:10 – 15:20

Monday May 12th, 2025 Session 2 (Online Presentations) GoogleMeet : https://meet.google.com/nzd-dwgd-wbx			
Topic	Paper ID	Conference Title	Time
Topic 2 : Green Thermal Engineering	44	Enhanced Melting Of PCM In Finned Tube For Latent Heat Thermal Energy Storage Unit.. Author(S): Ilias Benyahia, Aissa Abderrahmane, Obai Younis, Mellah Hocine	14:00 – 14:10
	160	Hybrid Power Supply System Based On Pv,Boost Converter ,And Battery Storage. Author(S): Lagoune Meryem, Samia Latreche, Samia Latreche, Badreddine Babes, Hamza Khemliche	14:10 – 14:20
	1	Enhanced Energy Transfer Efficiency Through Advanced Waveform Design. Author(S): BENHAMOU Abderrahim, TELLACHE Mohamed	14:20 – 14:30
	32	Study Of Performances Of A Chapel-Type Solar Still . Author(S): DELIOU Adel	14:30 – 14:40
	120	Type Of Thermal Insulation Suitable For Algerian Housing. Author(S): Khelifa Kerfah Ilyas, Kawthar Hadja, Samir Khledj, Omar Bouksani, Abdelkader Larabi	14:40 – 14:50
	135	Analysis Of Heat Transfer, MHD Flow, And Double-Diffusive Convection In A Porous Medium Under Thermal Equilibrium And Joule Heating Effect . Author(S): Lahrech Abdelhakim, Tayebi Tahar	14:50 – 15:00
	156	Sustainable Retrofitting Of A Historic School Building In Algeria: Balancing Energy Efficiency And Conservation. Author(S): Hamida BENCHEIKH, Ilyas KHELIFA KERFAH	15:00 – 15:10
	203	Optimizing Environmental Building Performance In Response To Climate Challenges Using Digital Tools. Author(S): Oussama Kadi, Dechaicha Assoule, Cheraitia Mohamed, Djouad Fatima Zahra	15:00 – 15:10

Monday May 12th, 2025 Session 3 (Online Presentations) GoogleMeet: https://meet.google.com/yqw-hbyw-pym			
Topic	Paper ID	Conference Title	Time
Topic 3 : Green Materials And Applications	55	Application Of Nettle Leaves As Bio Coagulant For The Removal Of Suspended Pollutants In Industrial Wastewater: Modelisation And Optimization By Box-Behnken Design. Author(S): Taibaoui Safia, Morsli Amine, Yadoun Bouchra, Benhamou Abdellah, Chergui Nacera, Debab Abdelkader	14:00 – 14:10
	78	Performance Analysis Of Cssni3 Based Perovskite Cells: Simulation Study. Author(S): RAZIKA ADJOUZ, ZEHOR ALLAM , Loumafak Hafaifa	14:10 – 14:20
	91	Chalcone, Aurones For Sustainable Materials: Reactivity, Functionalization, And Practical Applications. Author(S): Kelbouz Mehdi	14:20 – 14:30
	144	Impact Of Conductive Materials On Simulation Results Of A 2D Radial Flux Permanent Magnet Eddy Current Coupler PMECC. Author(S): Naima Amina	14:30 – 14:40
	148	Green Valorization Of Eggshells Into Doped Hydroxyapatite Catalyst For Phenol Hydroxylation. Author(S): Mohammed Yacine BOUZALEKH, Kahina KOUACHI	14:40 – 14:50
	199	Hydroalcoholic Gel Produced Using Bioethanol From Algerian Date Waste. Author(S): Fatima Zohra BAOUCHE, Cherifa KARA MOSTEFA KHELIL, Ihssen Hamzaoui , ELHADJ Djilali Djilali , Fatiha AMRANE, MESNOUA Souad , Houria KHEROUS	14:50 – 15:00
	222	Green Extraction Of Bioactive Compounds From Olive Leaves For Antidiabetic Applications: Integrating Circular Economy In Sustainable Extraction Methods. Author(S): KADDOUR Taous, Chaher-Bazizi Nassima, Saidene Naima, Hanifi Lamia, Karou Lydia, Kadi Radia, Atia Amina, Bachir-Bey Mostapha	15:00 – 15:10
	2	Development Of Multi-Frequency Rectenna Using Metamaterial Structures. Author(S): BENHAMOU Abderrahim, Mohamed TELLACHE.	15:10 – 15:20
	33	Study Of Mechanical Behaviour Of Composites Kevlar/Epoxy. Author(S): DELIOU Adel, Abdelali Boukaoud, Khmissi Belkaid, Abdelkader Fidjah, Abdelkader Fidjah	15:20 – 15:30
	18	Behavior Of Shotcrete Wall Reinforced With Anchor Nails In 2D "Case Study" BNP PARIBAS BAB EZZOUAR Project - (Algiers). Author(S) : KIYYOUR SAMI	15:30 – 15:40
	41	Reuse Of Dam Sediments In The Production Of An Eco-Cement . Author(S): Ghouti Mustapha Nadir, Hafida MAROUF , Sidi Mohamed Aissa Mamoun, Mohamed Salah Mouaissa	15:40 – 15:50

Monday May 12th, 2025 Session 4 (Online Presentations) GoogleMeet: https://meet.google.com/uuyu-vcdx-fxp			
Topic	Paper ID	Conference Title	Time
Topic 3 : Green Materials And Applications	94	Adsorption Of Malachite Green (MG) Dye On Cost-Effective Mesoporous Material Al-MCM-41 Synthesized From Local Clay. Author(S): Hadja Alia TABTI, Mehdi ADJDIR, Samira DERKAOUI, Hakima HEDJAR	14:00 – 14:10
	114	Eco-Innovative Process For The Valorization Of Saline Industrial Effluents And Solid Organic Waste For The Treatment Of Polluted Water. Author(S): Nouioua Asma, Ben Salem Dhirar , Ouakouak Abdelkader	14:10 – 14:20
	151	Breakdown Effects On Power Transformer Mineral Oil And Sunflower Oil Impedance In The Megahertzian Frequency Range: A Comparative Analysis. Author(S): Berrah Abderrachid, Reffas Abderrahime, Aissa Oualid, AMARA Makhlofia, Moulai Hossine, Talhaoui Hicham , BENNIA Abderazak	14:20 – 14:30
	168	Empirical Calculation Of Jump Factor J_k For Element-Selective. Author(S): HAMIED Imane, KAHOUL Abdelhalim, DAOUDI Salim	14:30 – 14:40
	181	The Role Of Optical Fiber In Energy-Saving Systems. Author(S): Mecelti Amel, Houria Triki	14:40 – 14:50
	185	Application Of A Novel Biomaterial As An Adsorbent Support In The Retention Of Methyl Green Dye. Author(S): Bendjelloul Meriem, Benhachem Fatima Zahra, Miraoui Abdelkader, Aichouni Sara	14:50 – 15:00
	202	Design And Optimization Of Functionalized Adsorbents For Contaminant Extraction: Isotherm And Process Modeling. Author(S): Abdelkader Miraoui, Fatima Zahra Benhachem, Bendjelloul Meriem	15:00 – 15:10
	95	Incorporating Waste Plastic Of PET As An Additive In Asphalt Mixtures Through A Dry Process. Author(S): AMINE BEKHEDDA, Tourkia GUERZOU	15:10 – 15:20
	130	Kinetics Of Méthylène Blue Adsorption On Kaolin. Author: Naima Bakhtaoui	15:30 – 15:40
	189	Investigation Of Longitudinal And Transversal Repair Orientations For Cracked Concrete Beam In Bending: A Numerical Study. Author(S): Amina Lazizi, Salima Abdelbari, Belabbes Bachir Boudjra	15:40 – 15:50

Monday May 12th, 2025 Session 5 (Online Presentations) GoogleMeet: https://meet.google.com/qpa-dipa-cnj			
Topic	Paper ID	Conference Title	Time
Topic 4 : Green Intelligent Systems	60	Maximum Power Point Tracking Controller For Photovoltaic System Using Third-Order Sliding Mode Control . Author(S): Achouri Houcem, Belkhir Kamel-Salim, Bektache Abdeldjebbar	14:00 – 14:10
	84	Enhanced Power-Sharing Performance Of Three-Phase Paralleled VsIs In A Standalone MG Using MSOGI Virtual Impedance Control Scheme. Author(S): Ait Hammouda Camelia, BRADAI Rafik, BOUKENOUI Rachid, KHERBACHI Abdelhammid , BENDIB Ahmed	14:10 – 14:20
	104	Indirect Adaptive Fuzzy Controller Based MPPT For PV Systems. Author(S): Yahia AZZEDDINE, Mohamed Tahar Makhlofi, Kheireddine Chafaa, Nadjiba Terki.	14:20 – 14:30
	147	Power Quality Improvement of A Grid-Connected PMSG-Based Wind Energy System Using A Multilevel Converter. Author(S): Ihssen Hamzaoui,Fatima Zohra Baouche, Fatima Zohra Baouche, Farid Bouchafaa	14:30 – 14:40
	169	Sustainable Energy Management In Marine Microgrids: A Comparative Assessment Of Two Advanced Strategies. Author(S): BOUDOUCHA Aimad, KOUBA Nour El Yakin	14:40 – 14:50
	184	Intelligent Frequency Control Using PSO- PID And Fuzzy Logic Controller For Microgrid System Based On Renewable Enrgies . Author(S): BENALI ALOUACHE, M'hamed Helaimi, Hadj allouache, Hossam A. Gabbarb.	14:50 – 15:00
	193	Influence Of Pulse Width Modulation Signal's Frequency And Duty Cycle On Boost Converter. Author(S): Manar Deroueche , Kaouane Mohamed, Akkila Boukhelifa	15:00 – 15:10
	20	Evaluation Of The Minimum Self-Excitation Capacity Of An Induction Generator Used In A Wind Energy Conversion System. Author(S): Belynda Fares , Radia Abdelli, Ahcene Bouzida, Safia Azzougui , Abderrezak Aibeche	15:10 – 15:20

Monday May 12th, 2025			
Session 6 (Online Presentations)			
Session Chair:			
Topic	Paper ID	Conference Title	Time
Topic 4 : Green Intelligent Systems	86	Energy-Efficient Intelligent Skyline Queries For Sustainable Public Service Placement Using Parallel And GPU-Accelerated Techniques. Author(S): Khames Walid	14:00 – 14:10
	107	Potato Plant Leaf Disease Classification Using Multiple Classifiers. Author(S): Kourtiche Ikram, Bendjima Mostefa, Kourtiche Mohammed El Amin	14:10 – 14:20
	121	Sound-Based Bird Localization Using Lightweight Convolutional Neural Networks And Internet Of Things. Author(S): Bouarouguene Chakir, Moufida Maimour Moufida, Kadri Ouahab, Abderrazak Benyahia Abderrazak , Rondeau Eric	14:20 – 14:30
	183	Trash Image Classification Using Deep CNN Features And Random Forest Classifier. Author(S): El Ouanas Belabbaci, Tounsi Mohamed , Chennana Ahmed , Chouchane Ammar , Teta Ali, El Amine Mihoubi Mohammed, Mohamed Rafik Aymene Berkani	14:30 – 14:40
	5	The Smart Cities, A Forward-Thinking Approach Towards Sustainability: A Review . Author(S): Bencheikh Darda, Merzoug Wissam	14:50 – 15:00
	186	Application Of Machine Learning Techniques For Fault Detection And Classification In Photovoltaic Systems. Author(S): KARA MOSTEFA KHELIL Cherifa, HAMZAOUI Ihssen, BAOUCHE Fatima Zohra, Ben Allal Mohamed	15:00 – 15:10
	241	Comparative study between half-bridge and full-bridge LLC resonant converter for IH applications. Authors : houam ala, Fares zaamouche, saadsaoud merwan	15:10 – 15:20

Monday May 12th, 2025 Session 1 (Poster Presentations) Session Chair:			
Topic	Paper ID	Conference Title	Time
Topic 1 : Sustainability Of Eco-Friendly Materials	21	Review-The Different Methods Of Recycling Aggregate Treatment And Their Incorporation Into Concrete. Author(S): Allal Meftah , Zeghichi Leila., Larkat Karima, .Belmorkretar Karim	16:30 – 17:30
	25	Contribution To The Study Of The Correlation Of Mechanicals And Microstructurale Properties In Binary Cements. Author(S): Boualleg Saida, Chikouche Mohamed Aziz, Belgraa Larbi	
	47	Influence Of Glass Waste On The Mechanical Properties Of Self-Consolidating Concrete. Author(S): BENMLOUD Abdelkhalek, NAOUI Anes	
	76	A Comparative Analysis Of Destructive And Non-Destructive Testing For Mineral Admixed Concrete Properties. Author(S): Messaouda Belouadah, Zine El Abidine Rahmouni, Nadia Tebbal	
	81	The Resistance Of Geopolymers To Carbon Dioxide And Their Valorization As A Sustainable Resource. Author(S): Hanene Zadri, Nadia TEBBAL, Nadia TEBBAL, Mekki Matalbi	
	113	Effect Of Plastic Waste On Self-Compacting Concrete. Author(S): Noura Djebri, Zine El Abidine Rahmouni , Larbi Belagraa	
	115	Study Of The Effect Of Incorporating Aggregates And Fibers On The Mechanical Characteristics Of Stabilized Clay Concrete. Author(S): Abderrachid AMRIOU, Deboucha Sadek, Ziani Houcine , SEDDIKI Ahmed, MEKKI Lakhdar, BENCHIEKH Mohamed	
	116	Recycling And Reusing Of Polypropylene In Food Packaging. Author(S): Khouloud Feryal BENMOHAD, Ghania AIT CHERIF	
	128	Study Of The Behavior Of Eco- Self Compacting Concrete Based On Marble Powder Addition. Author(S): BELAGRAA Larbi, DJEBRI Nora, Aissi Adel, Bakir Nassima, Ladjal Djelloul, BOUALLAG Saida	
	132	Effect Of Alkali Treatment On The Mechanical Properties Of An Eco-Friendly Composite Material Reinforced With Stipa Tenacissima Fibers. Author(S): ZITOUNI Khalida	
	139	Geopolymerisation Mechanism And The Influence Of Temperature "Literature Review". Author(S): Nour Elhouda Benghalem, Tebbal Nadia, Zine Elabidine Rahmouni, Maza Mekki	
	140	Development Of The Mechanical Properties Of Recycled HDPE Composites Reinforced With Date Palm Fibers. Author(S): Hadda BENACEUR, Fatma Zohra BENABID	
	163	Experimental Study Of The Variation Of Capillary Pressure And The Collapse Of Collapsible Soil After Its Treatment With Fiberglass.. Author(S): Bakir Nassima, Tallah Naoui, Belagraa Larbi, Menasri Youcef	



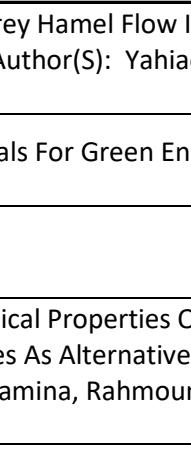
Bordj Bou Arreridj, May 12th -13th, 2025



	182	From Waste To Resource: Mechanical And Physicochemical Characterization Of Recovered Aluminum Sheets From Beverage Cans. Author(S): Bouras Loubna, Abdelghani Khaldi, Laurent Tabourot	
	188	Characterization Of SCC Based On Recycled Aggregates And Silica Fume Using Non-Destructive Testing (NDT). Author(S): Omri Imen Yamina, Allali Ibtissem	
	82	Exploring The Physical And Mechanical Properties Of Bio-Enhanced Raw Earth Bricks. Author(S): Meriem Lammari, Bencheikh Mohamed, Benazzouk Amar	

Monday May 12th, 2025 Session 1 (Poster Presentations) Session Chair:			
Topic	Paper ID	Conference Title	Time
Topic 2 : Green Thermal Engineering	62	Effects Of Expanded Perlite On The Thermal And Mechanical Performances Of Plaster Mortar. Author(S): LAOUBI Hamza, Meddah Abdelaziz	16:30 – 17:30
	80	Evaluating The Performance Of WRF-Solar For Photovoltaic Power Forecasting. Author(S): Abdelhak Bahlouli	
	155	Parametric Study Of The Thermal Insulation Of Recycled Aggregate Concrete.. Author(S): Benguedouad Ouissam, Siline Mohamed, Ghorbel Elhem	
	187	Ammonia-Syngas Combustion Under MILD And Conventional Regimes: A Computational Comparison Using A Jet-In-Hot-Coflow Burner. Author(S): Benbouaziz Oussama, Abdelbaki Mameri, Youcef Maalem, Seifeddine Chehaidia	
	211	3D Numerical Study Of Heat Transfer Enhancement In A Hybrid PV/T Solar Panel Using Cuo-Cu/Water And Cuo-Al ₂ O ₃ /Water Nanofluids. Author(S): Benkherbache Souad, Bakhti Fatima Zohra, Moussaoui Nafissa	

Monday May 12th, 2025 Session 1 (Poster Presentations) Session Chair:			
Topic	Paper ID	Conference Title	Time
Topic 3 : Green Materials And Applications	10	Ab Initio Analysis Of Zintl Phase Hydrides Xgasih (X = Sr, Ca, Ba) For Sustainable Hydrogen Storage: Insights Into Structural Stability, Electronic Properties, And Thermodynamics. Author(S): Hadjer Ammi, CHARIFI Zoulikha ,BAAZIZ Hakim, Galleb Torkia	16:30 – 17:30
	19	Synthesis Of Iron Oxide Nanoparticles And Their Structural And Optical Characteristics And The Adsorption Enhancer EB Evans Blue As Application. Author(S): Labbi Asma , Mammi MOUNIRA, Zaouche Chouaieb, Dahbi Laid, Benhaoua Boubaker	
	23	Comparison And Characterization Of Doped Nio Thin Films Prepared By Spray Pyrolysis. Author(S): Mammi Mounira, Labbi Asma, Zaouche Chouaieb, Dahbi Laid, Benramache Said Benramache	
	31	Mechanical Behavior Of Mud Bricks Stabilized With Two Types Of Stabilizer. Author(S): Touahria Sabah, Bencheikh Mohamed	
	46	The Performance Of Mortar Incorporating Plastic Waste At High Temperature. Author(S): Abdelli Houssam Eddine, Kennouche Salim, Boudjellal El Mouatez Billah	
	51	Investigating The Corrosion Inhibition Effect Of Mint Essential Oil: A Phytochemical, Spectroscopic, And DFT Study. Author(S): Baaziz Sonia, Farid Lekmine, Bouzid Hannachi, Hadjer Belhouchet, Sara Sari	
	57	Impact Of Substitution Rate With Treated Sediment On Workability, Strenght And Porosity Of SCC. Author(S): Tourkia GUERZOU, KHALIL BELGUESMIA, NADIA BELAS, ABDELKADER MEBROUKI, AMINE BEKHEDDA, MOHAMED FELLOUH	
	59	Effects Of Glass Powder And Cement Kiln Dust On Drying Shrinkage Behavior Of Self-Compacting Mortars. Author(S): HAMMOUCHE Redha, Belebchouche Cherif, Berkouche Amirouche	
	66	Study Of The Effects Of Precursor Concentration On The Structural And Optical Properties Of Manganese Oxide Thin Films. Author(S): Abderrahim Siassi, Rabie Amari, Abdelhalim Kahoul, Deghfel Bahri, Messaoudi Fathi, Daoudi Salim	
	69	Multifaceted Properties Of Double Perovskite Oxide Ba ₂ CoMoO ₆ : A DFT Perspective On Electronic And Magnetic Features. Author(S): Guendouz Atika, Hadj Larbi Khadidja, Driss-Khodja Kouider, Amrani Bouhalouane, Nabatti Ech-Chergui Abdelkader	
	79	"Design And Implementation Of An Innovative Alkali-Activated Binder Using Bio-Based Materials For Sustainable Solutions.". Author(S): Leila Briki, Kessal Oussama	
	83	Numerical Studies On Optimizing Drilling Mud And Bit Combinations For Enhanced Performance In Algerian Oil And Gas Operations. Author(S): Mekedeme Abdellah, Samir Benammar	

134	Fe3O4 Nanofluid Effect On A Jeffrey Hamel Flow In Divergent Channels Using The Duan Rach Approach. Author(S): Yahiaoui Imane, Ammar Dib	
142	V2fenige2 And Hf2FeNiSb2 Materials For Green Energy. Author(S): Diaf Mohamed, Haroun RIGHI	
174	Study Of The Mechanical And Physical Properties Of Alkalins Activated Mortars Based On Industrial Wastes As Alternatives To Cementitious Materials. Author(S): Omri Imen Yamina, Rahmouni Zine El Abidine, Tebbal Nadia, Allali Ibtissem	
195	Impact Of Cement Class On The Geotechnical Properties Of Red Soil From M'sila, Algeria. . Author(S): Mekki Lakhdar, Seddiki Ahmed, Amriou Abderrachid, Belagraa Larbi, Chikouche Mohamed Aziz	
213	Thermal Efficiency Improvement Of A Cylindrical-Parabolic Collector With Syltherm 800/Al2O3 Nanofluid. Author(S): Fatima Zohra BAKHTI, Nafissa MOUSSAOUI, Souad BENKHERBACHE	
238	Determination Of The Fundamental Natural Frequency Of A Cracked Beam. Author(S): AYAS HILLAL	
206	Computational Study, Speed Of Sound, And Viscosity Measurements For Binary Mixtures Of 1,4-Dioxane + 1-Butanol, At Temperature T= 288.15-338.15 K And At Atmospheric Pressure. Author(S) : Houda BENABIDA, BELARIBI Farid Brahim, Saal Amar, Coquelet Cristophe	
22	Macromolecule-Based Formulation For Wound Healing And Environmental Protection. Author : Asma Chetouani, Hichem Haffar, Meriem Elkelli	
73	Innovative Approaches To Biomaterials And Waste Valorization For Development Of A Biofortified Product Based On Dates And Sweet Potatoes. Author(S): Moussaoui Chaima	
06	Study Of Temperature Effects On The Electrical Characteristics Of Au/Gan/Gaas Diodes. Authors: Boualem Soumia, Benamara Zineb, AKKAL Boudali, Benamara Mekki Addelkader, Amrani Mohammed	
191	Structural, Electronic, Elastic And Optical Properties Of The Doped Metal Halide Perovskite CsgeCl ₃ , A DFT Investigation. Authors :Rebiha Slimani, Abdennour Benmakhlof, Abdelouahab Bentabet	
131	Smart Window Design Based On 1D TiO ₂ /SiO ₂ /Air Photonic Crystal Layers. Author: BENDIB SARRA	

Monday May 12th, 2025 Session 1 (Poster Presentations) Session Chair:			
Topic	Paper ID	Conference Title	Time
Topic 4: Green Intelligent Systems			16:30 – 17:30
	103	Design And Optimization Of UWB Pulses Using SSGW Waveforms And The Firefly Algorithm. Author(S): Maaref Abdelaziz, Sidi Ahmed Elahmar Fateh Ghazali	
	129	Advanced Fast Terminal Integral Sliding Mode For Torque Control Of Wind Turbine. Author(S): Chehaidia Seif Eddine, Cherif Hakima, Benbouaziz Oussama, Djeffal Selman, Haithem Boumediri , Chihaoui Salim, Djennane Mohamed, Mossad M.I.	
	141	IoT-Based Ecoinelligent Garbage Bin Management The Solution For Smart And Green Cities. Author(S): Mehdi Khitas , Moncef Khitas, Nada Boudour	
	150	Green Energy For Enhancing The Internet Of Everything Applications In Rural Areas. Author(S): Maza Abdelouahab, Sabri Lyazid	
	172	A Novel Topology Of Variable Speed Wind Turbine Based On Multilevel Converter System . Author(S): DAHBI Abdeldjalil, Khelfaoui Abderrahmane , Benmedjahed Miloud , Bouraiou Ahmed, Hamouda Messaoud , Djaafri Omar , Harrag Abdelghani	
	180	Adaptive Finite-Time Synergetic For Battery Discharging Based On A Boost Observer. Author(S): Saadi Salah Eddine, Merzougui Brahim	
	214	Performance Comparison Between SMC-MPPT And Synergetic-MPPT Methods In Grid-Connected Photovoltaic Systems. Author(S): Bouguerra Khoukha, Latreche Samia , Khemliche Mabrouk	
	215	Remote Sensing, GIS And Advanced Methods For The Creation Of Decision Support Tools In Natural Risk Management. Author(S): SEDDIKI Ahmed, Mekki Lakhdar, Dehimi Salim, Amriou Abderrachid	
	216	Effect Of Gaas Thin Film Thickness On The Performance Of A (A-Si)-Based Heterojunction Solar Cell By Simulation. Author(S): Moussaoui Nafissa, Bakhti Fatimazohra, Benkherbache Souad	
	232	Energy Management Of The Water Pumping System Powered By A Photovoltaic System Using The Metharustic Algorithm. Author(S): RAHLI CHOUAIB, MEHDI OUADA, MEHDI OUADA, ABDESALAM RYAD MEBARAK , ABDERRAHIM DERDAR , ATTOUI ISSAM	
	42	Power Improvement Using Grid-Side MPPT Control For Variable Speed Wind Turbine Authors: Saci Taraft,Djamila Rekioua, Djamel Aouzellag	
	67	Advanced Fault Location In High Voltage Transmission Systems Using Traveling Waves And Wavelet Transform For Green Engineering Applications. Author(S): Talbi Asma, Abdelhafid Bayadi	

Tuesday May 13th, 2025			
Session 2 (Poster Presentations)			
Session Chair:			
Topic	Paper ID	Conference Title	Time
	112	Calculation Of L1to L2-Subshell Coster-Kronig Transition For Some Atomic Elements.. Author(S): Meddah Samia, Kahoul Abdelhalim, Daoudi Salim	
	133	Empirical Determination Of L X-Ray Fluorescence Cross-Sections For Dysprosium Excited By Photons At Different Energies. Author(S): BOUKCHID AMINA, Kahoul Abdelhalim, Daoudi Salim	
	99	Empirical Formulae For L Shell Cross Section For Atomic Elements . Author(S): Bendjedi Ahlam, Kahoul Abdelhalim, Daoudi Salim	
	125	Green Synthesis Of Zinc Oxide Nanoparticles . Author(S): Rouabah Mounir, Grine Madani	
	126	THE IMPACT OF ALFA FIBRE ON MODERN INDUSTRIES AND THEIR DIVERSE APPLICATION. Author(S): Farhet Grine, Rouabah Mounir	
	127	Adsorption Of Reactive Yellow 135 Onto Activated Carbon Prepared From The Peel Of A Pomegranate. Author(S): Behloul Hamza, Bounab Farida, Belakhdar Amina, Hamla Meriem, Ferkous Hana, Ben Amor Yasser	
	146	Structural And Electronic Properties Of Ains2 (A: K, Rb) Layered Structures From First Principles Calculation. Author(S): Ghania BELGOUMRI, Nadjet BENMEKIDECHE, Layachi DJEDOUI, Abdelouahab BENTABET	8:30 – 9:30
	233	Modeling Of Position Deviations Caused By Thermal Effects In The Prismatic Axis Of A CNC Machine Tool. Author(S): Mechta Ahlem, Mohamed Slamani	
	235	Rotary Friction Welding Of Two Dissimilar Steels. Author(S): Helal Yazid , Zakaria Boumerzoug, Elhadj Raouache.	
	210	Towards Sustainable Skincare: The Use Of Beeswax And Essential Oils In Natural Vaseline Formulations. Author(S) : Maria Mouhoub, Amina Hachaichi, Djahida Lerari	
	217	Study The Effect Of Nanoclays On The Dynamical Properties Of Polypropylene/Polyamide66 Nanocomposites. Authors: Benalia Kouini, Amina Hachaichi, Asma Nour Elhouda Sid, Hossem Belhamdi	
	239	The Durability Of Roller-Compacted Concrete Made With Recycled Aggregates Treated With Glass Powder. Author : Lyacia Sadoudi	

196	Nonlinear Behavior Analysis Of A Barrette Foundation Under Lateral Loading. Author(S): Behloul Djamila, Moussai Belkacem	
97	Comparing The Performances Of A New Fractionalized Order PID Controller To A Classical PID Controller. Authors: Zemmit Abderrahim, Khaled Belhouchet, Abdelghafour Herizi, Rouabhi Riyadh, Bensafiy Yacine, Idir Abdelhakim	
154	Investigation Of Structural, Electronic And Thermoelectric Properties Of A Quaternary Chalcopyrite Alloy. Author(S): BOUGAA Samira, Hakim BAAZIZ, Zoulikha CHARIFI, Torkia GHELLAB	