

THE FOURTH INTERNATIONAL CONFERENCE ON MATERIALS & ENVIRONMENTAL SCIENCE**VIRTUAL CONFERENCE****(ICMES 2020)****“ NEW MATERIALS FOR SUSTAINABLE ENERGY DEVELOPMENT ”****NOVEMBER 18-27, 2020****MOROCCO****PARTICIPANTS LIST****ORAL COMMUNICATIONS****Authors****Title****ID****ORGANIC, INORGANIC AND NANOMATERIALS**

L. Laasri, M. Hadidi, and And S. Sebti	Ecofriendly procedure for the synthesis of 4-(Phenylamino)pent-3-en-2-one using an heterogenous catalyst - ZnCl ₂ /Natural Phosphate	60
El OUAHCHI Mohamed, BAHARI Zahra, TOUZANI Rachid	Synthesis of MOFs based on imidazole and triazole derivatives for gas sensing	352
Ayoub Khaldan, Soukaina Bouamrane, Reda El-mernissi, Khalil El khatabi, Hamid Maghat, Mohammed Aziz Ajana, Abdelouahid Sbai, Mohammed Bouachrine and Tahar Lakhliifi	3D-QSAR modeling, Molecular docking and ADMET properties of benzothiazole derivatives as α -glucosidase inhibitors	200
Rkia Louafy, S. Tarhouchi, A. Benelyamani, S. Majid, L. Lebrun, Mimoudi Hlaibi	Purification and extraction of acid Lactic compound by oriented processes through affinity polymer membranes	13
Adlouni Youssef, Echaabi Jamal, and Mallil El Mostapha	Development of multi-scale biocomposites from flax, nanocellulose and epoxy by resin infusion	152
N. Bouroumane, M. El Kodadi, R. Touzani, M. El Boutaybi, M. Daoubi Khamlichic and A. Oussaid	New Ligands Based of Pyrazol: Synthesis, Characterization and Evaluation of the Catecholase-Like Activity	273
Anouar El Magri, Sébastien Vaudreuil, Khalil El Mabrouk	Additive manufacturing of polyetheretherketone/polyetherimide (PEEK/PEI) blend using Fused Filament Fabrication process	140

Rafika EL ATI , Necla Öztaşkın, Suleyman Goksu, Rachid TOUZANI	Potential of sulfonamide derivatives in medicinal chemistry	360
S. Dadou , M. Koudad, A. Elaattiaoui, C. El Hamouti3; Ad. Oussaid, and N. Benchat	Synthesis, crystal structure, antimicrobial activity and docking studies of new imidazothiazole derivatives	368
Goncagül Serdaroğlu , Savaş Kaya	The substituent effect on chemical reactivity of (9H-pyrido[3,4-b]indol-3-yl)methanol: Spectroscopic and electronic investigation	371
E. H. Barhdadi	Nanomechanical property evaluation of nano-reinforced polymer composites based on morphologically representative patterns	162
D. Nebbach , F. Agda, M. Lakhlifi, M. Bouachrine, M. Ajana	Optoelectronic properties of organic materials based on thiophene for photovoltaic application	181
Karim Chourti , Amine Bendahhou, Soufian El Barkany and Mohamed Abou-Salama	Structural, microstructural and electrical properties evolution of the $Sr_2Gd_xSm_{(1-x)}Ti_2Nb_3O_{15}$ (SGSTN) solid solution	374
Mohammed. Jalal , R. Touazni, B. Hammouti , I. Özdemir	Metal-NHC heterocycle complexes in catalysis and anticancer applications	187

FROM NATURAL PRODUCTS TO THEIR BIOTECHNOLOGICAL APPLICATIONS

Kamal Essifi , Doha Berraouan, Mohamed Brahmi, Ali. El Bachiri, Samira Salhi, Marie-Laure Fauconnier, and Abdesselam Tahani	Relationship between structure and properties of sodium alginate microbeads foreseeing the protection and release of polyphenolic compound	23
Mohamed Brahmi , Kamal Essifi, Doha Berraouan, and Abdesselam Tahani	The study of the interactions between sodium alginate and sodium montmorillonite	45
Kaoutar Elfazazi , Hanane Azzouzi, Younes Noutfia, and Souad Selmaoui, Hasnaa Harrak	Evaluation and modeling of nutritional loss indicators of clementine juice stored under light conditions	56
G. Beniaich , A. Ainane, T. Ainane, A. Abdellaoui, F. El Hajjaji, R. Salim, Z. Rais, and M. Taleb	Taxonomic diversity and ethnobotanical-ethnopharmacological characteristics of the Lamiaceae family in the Fez-Meknes region	57
A. Chergui , L. El Hafid, E. Ajal, R. Nejjari, S. Mghizou, M. Lakchiri, M. Kaoua and M.R. Tazi	Evolution of biometric parameters and oil fatty acid composition of « <i>Argania spinosa</i> L. Skeels » fruits from Beni-Snassen (Eastern Region of Morocco) during ripening	59

Alaoui Karima , Chfik Zouheir, Asehraou Abdessalam, Abouloiafa Houssam, and Kharmach Ez-Zahra	In vitro probiotic effect of lactobacillus against potato late blight <i>Phytophthora infestans</i>	64
Y. Noutfia , A. Benali, I. Guirrou, K. El Fazazi, and H. Tantaoui	Effect of two drying methods on sensory profile and physicochemical properties of figs (<i>Ficus Carica L</i>)	73
H. Azzouzi , K. Elfazazi, M. Achchoub, Chafki L, A. Y. Mazigh, and S. Salmaoui	Evaluation of the pectin quality of clementine extracted by different extraction methods	91
M. Achchoub , K. Elfazazi, H. Azzouzi, L. Chafki, A. Ammadi, and S. Salmaoui	Optimization of total polyphenols and total sugars by the design of experiment methodology in carob beverages	105
A. Lfitat , H. Zejli, F. Z. Bousraf, A. Bousselham, Y. El Atki, A. Gouch, B. Lyoussi, and A. Abdellaoui	Comparative assessment of total phenolics content and in vitro antioxidant capacity variations of macerated leaf extracts of <i>Olea europaea L.</i> and <i>Argania spinosa (L.) Skeels</i>	144
Hasnaoui Amina , Kassou Khalid, Bellaouchi Reda, Rokni Yahya, Hakkou Abdelkader, and Asehraou Abdeslam	Impact of date extract and some micronutrients foliar application on the fruiting of “Assiane” date palm cultivar	216
Yahya El-Mernissi , and Hassan Amhamdi	Phytochemical study and antioxidant activity of <i>Globularia alypum</i> extracts	292
Amina Labhar , Mhamed Ahari, Soufiane El Barkany, and Hassan Amhamdi	Ethnobotanical study of medicinal and aromatic plants of the National Park of Al Hoceima	276
Mohamed LOUTOU , Ilyasse IZANZAR, Wafa Misrar, Mohammed KOUDAD, Mohamed ABOU-SALAMA	Phosphate mine tailings based ceramic membranes: Microstructural investigation and filtration suitability	384
Hasnaâ Harrak	Comparative suitability for processing into powder of prickly pear cladodes at four ages of growth	30
Khaoula Diass , Ouafae Mokhtari, Souad Abdellaoui and Rachid Touzani	Biological and Pharmaceutical use of essential oils of <i>Lavandula officinalis L.</i> and <i>Rosmanirus officinalis L.</i> produced at Jerada-Morocco	333
Tabibi Mohammed , Tahani Abdesselam, El Bachiri Ali	Assisted extraction of rosemary antioxidants with green solvents	307
Imane Oualdi , Ouafae Mokhtari, Souad Abdellaoui, Abdesselam Tahani, Adyl Oussaid, Rachid Touzani	Rosemary Essential Oils: Extraction, Identification and Biocidal Applications	233
El Miz Mohamed , Essifi Kamal, Berraaouan Doha, Salhi Samira, Tahani Abdesselam	Adsorption and kinetics studies of Thymol on organic modified bentonite by cetyl-pyridinium chloride (CPC) from aqueous solution	358
Ouafae Mokhtari , Fatima Brahim, Imad Hamdani, Yahya Rokni, Khaoula Diass, Imane Oualdi, Rachid Touzani	Chemical and biological characterization of essential oils extracted from citrus fruits peels	363

QUALITY, WATER, ENVIRONMENT, HEALTH AND SAFETY AT WORK

Imane Touarssi , S. Oukkass, Z. Habibi, Y. Chaouqi, N. Sefiani ¹ , L. Lebrun, and Miloudi Hlaibi	Tris 2-aminoethyl amine (TREN) agent to quantify interaction and extraction capacity of VO ²⁺ ions for oriented membrane processes	11
JABRI Abdelkarim , JADDAR Abdessamad, and Boukhrouf Saad	The environmental Kuznets curve and the role of Fossil Fuel Energy Consumption to Environment quality in Morocco: Cointegration and Causality Analysis	51
Zahaf Toufik , Boushaba Farid, Mimoun Chourak, and Ijfiri Rachid	Risk of flooding of national road N °6 at the crossing of the Asla wadi in the region of Taourirt	93
H. Douhri , I. Raissouni, D. Bouchta, F. Chaoukat, N. Amajoud, M. Hadri, S. Tazi, J. Abrini, and B. Douhri	Bioactive compounds from Moroccan plants as alternative in the water treatment process	126
Chaimae Benaissa , Belkacem Bouhmadi, and Abdelhamid Rossi	A hydro-chemical and bacteriological study of five sources of groundwater in the Ghis-nekor and the Bokoya aquifers Al Hoceima	139
Belhadj Kamal	Forecast risk maps of land movements in the eastern rif-Morocco	156
Abourrich Mostapha , Khermachassya, and El Ouarghi Hossain	The risk of contamination of the hospital environment: case of pseudomonas aeruginosa reservoirs at the level of resuscitation and intensive care service of the med V hospital of al-hoceima	206
H. Lrhoul , and N. El Assaoui	Mapping of water resources research in Morocco: ascientometricanalysis	240
A. Sadok , M. Charafi, and N. El Assaoui	Calage d'une prise d'eau potable dans un barrage envasé par modélisation numérique bidimensionnelle Horizontale : cas du barrage Mechraa Hammadi	241
Ouafae Jbahi , Fatima-Zahra Ouchani, Mohamed Cherkaoui, Abdellatif Ghennioui, and Zakaria Naimi	Comparison of AHP and Fuzzy AHP methods combined with GIS for large scale CSP site selection. Case study in Marrakesh-Safi region	237
A. Idrissi , R. Benabbou, A. Rachid, and M. El Haji	The technologization of waste management system: Case of a landfill in rehabilitation	257
El Assaoui Naïma , Sadok Abdelaziz, Snoussi Maria, and Merimi Imane	Impacts of climate change on Moroccan's groundwater resources: State of art and development prospects	306
F. Z. Bouaich , W. Maherzi, S. Naamane, F. El-hajjaji, N. Abriak, M. Ben Zarzour, M. Taleb, and Z. Rais	The Effect of the type of water on the physico-mechanical properties of concrete B25	327

A. El Abdouni , K. Haboubi 2, I. MERIMI, and M. S. El Youbi	Valorization of olive oil wastewater in handmade bio soap produced in Al-Hoceima province (north Morocco)	338
Asmae El Brahmi , Souad Abderafi	Hydrogen sulfide removal from sewage wastewater using hydrogen peroxide in-situ treatment: case study of Moroccan urban sewers	341
Ijfri Rachid , Boushaba Farid, Mimoun Chourak, Zahaf Toufik	Implementation of geospatial interpolation methods in flood hazard mapping	81
I. Ballou , S. Kholtei, J. Naja	Characterization of sludge from the treatment of drinking water	317
R. Benkaddour , I. Merimi, B. Hammouti, M. KODAD	Groundwater contamination of Triffa plain by Nitrates and its impact on Moulouya water and Mediterranean Sea	288
Abba EL Hassan , Ajiyel Halim, Zine Nasser Eddine, Tarik Ainane. El Yaacoubi Adnane, Ben Kaddour Rachid	Assessment of the water quality of Oued El Khell by physicochemical and bacteriological approach	22
A. Bazza , M. Hamal, A. Moussa, M. Zerfaoui	Natural radioactivity measurements and radiation dose estimation in drinking water sample	252
K. Kasmi and A. Chafi	Physico-chemical characterization of water and evaluation of metallic contamination of <i>Mytilus galloprovincialis</i> in the coastal zone of Saida	367
Fouad Mourabit , M'hamed Ahari, and Mourad Boulaid	Determination of Triazines Using an Optimized Solid Phase Microextraction	372
Mustapha Souifi , Ahmed Souissi	Optimization of Water Utilization in Industrial Processes: Methodological Approach	281
Mohamed Allaoui , Mohamed Berradi, Hicham Es-sahbany, Jaouad Bensalah, Said Ibn Ahmed	Kinetic, thermodynamic and mathematical modeling study of the experimental data of the adsorption of nickel ions on the shells of the beaches of Mehdiya-Morocco	226

RENEWABLE ENERGIES AND SUSTAINABLE DEVELOPMENT

Chaimaa Khalil , and Mohamed Barbachi	Earth's construction and stabilization techniques - A review	29
Y. El Hammoudani , F. Dimane and H. El Ouarghi	Occurrence and fate of micropollutants during sludge treatment	78
I. Atemni , I. Mehdaoui, T. Ainane, M. Elhaji, M. Benabbou, M. Taleb, and Z. Rais	From biowaste to an organic resource: a solution for the future	125
Abdelghani Boussetta , Anas Ait Benhamou, and Amine Moubarik	Elaboration of bio-composites materials: polypropylene reinforced with raw sugar beet pulp, alkali treated and bleached cellulose fibers	127
A. Laftouhi , El. Ech-Chihbi, F. El-Hajjaji, Z. Rais, A. Abdellaoui, and M. Taleb	Erosion of vegetal biodiversity by anthropization in Morocco (Taounate)	135

Imane Aarab , Mohammed Derqaoui, Abdelmoughit Abidi, Abdelrani Yaacoubi, Khalid El Amari, Abderahman Etahiri, and Abdelaziz Baçaoui	Flotation of low grade Moroccan phosphates: beneficiation routes and challenges	218
N. El Moussaoui , I. Atmane1, K. Kassmi, S. Alexopoulos, K. Schwarzer, H. Chayeb, N. Bachiri	Simulation studies on a new innovative design of a hybrid solar distiller MSDH alimented with a thermal and photovoltaic energy	235
Ourraoui imane , Ahaitouf ali	CPV tracking system requirement and investigation	215

ELECTRICAL ENGINEERING AND PHYSICS SIMULATIONS

Imad Manssouri , Bouchra Boudebouz, and Brahim Boudad	Using Artificial Neural networks of the type extreme learning machine for the modelling and prediction of the temperature in the head the column. -Case of a C ₆ H ₁₁ -CH ₃ distillation column-	104
Imad Manssouri , Bouchra Boudebouz	Hybrid method coupling the stationary wavelet transform and the Kohonen self-organizing cards for the unsupervised classification of operating modes: Case of an industrial installation	121
M. Abdelouhab , R. Aboutni, and J. Bouchnaif	Behavior study of backstepping speed control of a switched reluctance machine when faults appear	21
Abdelhay El Omari , Mimoun Chourak, Carlos Navarro Ugena, Seif-Eddine Cherif, Echebba El Mehdi, and Aboubakr Charaoui	Performance analysis of twin tunnels lining under seismic loading	44
Z. Kadri , and S. Zyade	Study of the thermodynamic parameters of an epoxy paint in food contact	83
A. Attar , J. Bouchnaif, and K. Grari	Control of Brushless DC Motors Using sensorless Back-EMF Integration Method	133
I. Nasri , M. Karrouchi, H. Snoussi, K. Kassmi, and A. Messaoudi	Real-time Driver Drowsiness and Yawn Detection System using Computer Vision Techniques for the Prevention of Road Accidents	134
El Ouardy Khalid , Mustapha Zerfaoui, Herrassi Yassine, and Raoui Yasser	Validation of a Monaco TPS on an ELEKTA synergy MLCi ₂ : using statistical methods and Gamma index for fullpackage beams	142
Ayoub Marhou , and Mohammed Hamal	Characterization of the mixed radiation field and the contribution of fragments produced by 400AMeV of carbon ions in H ₂ O using GEANT4-simulation	143
Z. Charqui , M. Boukendil, L. El Moutaouakil, Z. Zrikem, and A. Abdelbaki	Numerical study of coupled heat transfers in an unvented trombe wall	146
H. Snoussi , M. Karrouchi, I. Nasri, I. Bendaoud, A. Messaoudi, and K. Kassmi.	A new system to fight against fuel fraud for a transport company	212

M. Karrouchi , I. Nasri, H. Snoussi, K. Kassmi, and A. Messaoudi	Realization and demonstration an attack technique on the vehicle's electrical system to control a computer via the CAN bus	170
R. Hidki , L. El Moutaouakil, M. Boukendil, Z. Charqui, and Z. Zrikem	Natural convection in a square cavity containing two heat-generating cylinders with different geometries	176
Reda El-Mernissi , Khalil EL Khatabi, Ayoub Khaldan, Ilham Aanouz, Mohammed Aziz Ajana, Mohammed Bouachrine and Tahar Lakhli	Discovery new 3,5-disubstituted indole as hematological anticancer, using 3D-QSAR studies	185
L. El Mchichi , A. El Aissouq, R. Kasmi, A. Ouammou, T. Lakhli and M. Bouachrine	In Silico Design of Novel Pyrazole Derivatives Containing Thiourea Skeleton as Anti-cancer Agents using: 3D-QSAR, Docking Molecular and ADMET Prediction	198
Sara Naamane , El Hassane Barhdadi, Fatima Zohra Bouaich, Nour El Hoda Mtarfi, Zakia Rais, and Mustapha Taleb	Micromechanical modeling of the effective elastic properties of sewage sludge ashes-mortars	231
Soufyane Khattou , Madiha Amrani, Abdelkader Mouadili, El Houssaine El Boudouti, and Bahram Djafari-Rouhani	Acoustic Tamm states in slender tubes	236
Jamal-Eddine Salhi , and Najim Salhi	Numerical analysis of the properties of nanofluids and their impact on the thermohydrodynamic phenomenon in a heat exchanger	220
Madiha Amrani , Soufyane Khattou, El Houssaine El Boudouti, and Bahram Djafari-Rouhani	Sharp Fano resonance induced by sub-wavelength dielectric gratings	251
Ayoub Abouhouraira , Abdellah Ouali, Ouafa Elhammoumi	Effect of accelerated ageing by temperature variation cycles and heat cure on the dimensional variation of concrete made by reactive aggregate	259
O. El Ghani , I. Driouch, and H. Chatei	Numerical Investigation of Two Temperature Superthermal Electrons Effect on the Sheath of Dusty Plasmas with Dynamic Dust Charge	265
H. Soussi , L. Bahi, L. Ouadif, and M. Aqil	Delineation of marine intrusion by electrical tomography at Sahel-Doukkala	280
Krim Deae-Eddine , Rrhioa Abdeslem, Zerfaoui Mustapha, Bakari Dikra, Oulhouq Yassine and Hanouf Nacira	Comparative study between three-field and four-field conformal radiation therapy [3D-CRT] ballistics for rectal cancer treatment	298
M. A. Mehdi , T. Cherradi, M. Qachar, and A. Chigr	Analysis of structural and surface degradations of a flexible pavement, based on auscultation results using the MCA method	304
M. Sarroukh , K. Lahlou, and M. Farah	Study of the effect of the choice of bitumen on the resistance of hot mix asphalt to temperature	311

Imane Mehdi , and El Mostapha Boudi	Reliability analysis of an eco-designed mechatronic system using Coloured Petri Net	323
M. Benkaddour , D. Bahia, Y. BELKADI, J. Barkani, C. Mastail3, and A. Benkaddour	Determination of the vacancies migration Enthalpy in a series of ternary Fe-Cr-Ni alloys, by Monte Carlo simulation of ordering kinetics, using a vacancy diffusion mechanism	336
A. Ezzarfi , F. Elamri, Y. Bouchafra, Y. Ben-Ali, A. Sali1 and D. Bria	Localized defects States Based on Defective Multi-Quantum-Wells	342
Ilyass El kadmiri , Youssef Ben-Ali, Younes Errouas, Aissam Khaled, Driss Bria	Acoustic filters based on defect modes in One-Dimensional phononic star waveguide Structure	110
Younes Errouas , Ilyass El kadmiri, Youssef Ben-Ali, Zakaria Tahri, Bria Driss	Three frequency filtering and guiding by the presence of defects in one-dimensional photonic star waveguide structure	88
R. MALEK1 , A. FARAJI, S. SABRI, K. KASSMI	Defects observation in CdTe/(001)GaAs thin film. A kinetic Monte Carlo simulation	102
I. Filahi , M. Hasnaoui, M. Bourich, A. Amahmid	Double-diffusive convection study in a shallow horizontal porous layer filled with a binary fluid and submitted to destabilized conditions in the presence of Soret and Dufour effects	151
K. Tabti , L. El Mchichi, A. Sbai, H. Maghat, M. Bouachrine, and T. Lakhlifi	QSAR Studies of New Compounds Based on Thiazole Derivatives as PIN1 Inhibitors via Statistical Methods	195
Laila Hfa , Mohamed Barbachi	Infrared thermography for pipeline's leakage detection: modeling and finite element numerical simulation	183
L. Belamkadem , A. El Moussaouy, O. Mommadi, M. Chnafi, C. A. Duque, J. A. Vinasco, A. Kerkour Elmiad	Impact of hemi-cylindrical geometry on diamagnetic susceptibility of a donor impurity confined in quantum dot	350
O. Mommadi , L. Belamkadem, A. El Moussaouy, M. Chnafi, M. El Hadi, C. A. Duque, J. A. Vinasco	Diamagnetic susceptibility of an off-center hydrogenic donor impurity in hemi-spherical quantum dot	351
I. Abdellaoui , A. Abbadi, R. Kouddane, J. Cappelle, A. Azari	Numerical four-point bending study of sandwich structures	163
Siham MALKI , Hajar ABBADI, Larbi EL FARH	Ab-initio investigation of structural and electronic properties of VSi ₂ compound	359
Hajar Abbadi , Siham Malki, Larbi El Farh	Theoretical investigation of electronic structure of single MoS ₂ monolayer	357
Chennaif Mohammed , Zahboune Hassan, Elhafyani Mohamed Larbi, Zouggar Smail	Optimal sizing of an autonomous water pumping system powered by a parabolic trough power plant using the Modified Electric Systems Cascade Analysis	205

El Idrissi Ahmed Loukmane, Bouchnaif Jamal, Mokhtari Mohammed	Comparative study between the sliding mode control and the fuzzy logic control of the BLDC motor	362
Yamina Rezzouk, Madiha Amrani, Soufyane Khattou, El Houssaine El Boudouti, and Bahram Djafari-Rouhani	Tamm states in one-dimensional plasmonic band gap structures	369
Goncagül Serdaroğlu, and Nesimi Uludağ	The computational study on methyl (1R,4S,5R)-4-hydroxy-6-oxo-1,3,4,5,6,7-hexahydro-2H-1,5-methanoazocino[4,3-b]indole-2-carboxylate: FT-IR, NMR, NBO, and FMO Analyses	370
Kamal Amghar, Houari Ameer, Hicham Bouali, and Najim Salhi	Numerical study of thermal and dynamic structure of a laminar flow in solar collector	238

MATERIALS PHYSICS AND CHEMISTRY

Rabaa Elkori, Abdelilah Hachim, Amal Laamarti ¹ , and Khalid El Had	Experimental study of the notch effect on the HDPE material for V and U notches and for different openings	14
Hayat EL Ouafy, Tarik EL Ouafy, Mustapha Oubenali ¹ , Mohamed Mbarki, Malika Echajia	Experimental characterization and DFT of conformational stability salicylic acid	5
A. Chaouiki, M. Chafiq, H. Lgaz, R. Salghi, and K. S. Bhat	Comprehensive assessment of corrosion inhibition of mild steel in 1 M HCl medium by a novel spirocyclopropane compound: Outlooks from experimental and computational studies	33
H. Fakhry, M. El Faydy, A. Zarrouk, A. Aouniti, B. Lakhrissi, B. Hammouti, and H. Oudda	A theoretical bay DFT and molecular dynamics, and experimental comparative study of the inhibition of the corrosion of steel Carbone in HCl bay using of new molecule derived bay Quinoline	37
Y. Fernine, R. Salim, N. Arrousse, F. El Hajjaji, M. Ebn Touhami, Z. Rais, and M. Taleb	Evaluation of extract of OBSO as green inhibitors for aluminium alloy 2024 -T3 corrosion in 3% NaCl media	50
Houssame Limami, Imad Manssouri, Khalid Cherkaoui, and Asmae Khaldoun	Physicochemical and Mechanical Assessment of Reinforced Unfired Clay Bricks with Typha-Fibers Composite as a Construction Material Additive	124
A. El Fazazi, M. Ouakki and M. Cherkaoui	Effect of temperature on structure and corrosion resistance of Zn coatings on steel substrates	129
A. Radi, B. El Mahi, A. Aouniti, M. El Massoudi, S. Radi, M. Kaddouri, and A. Zerrouk	Thermodynamic and electrochemical study of manganese complex as Efficient Inhibitor of Corrosion of Mild Steel in Acidic Solution 1 M HCl	180
F. Hamouche, Y. Hassani, Y. Baymou and M. Ebn Touhami	Effect of temperature on the Corrosion behavior of Lead-free Brass in Tap water	242

C. Merimi, B. Hammouti, K. Zaidi, I. Merimi, and T. Szumiata	Study of the inhibition of steel corrosion in an acid medium by a synthesized organic molecule	279
Nadia Jaafar, Hassan Elattari, Habib El Alaoui El Abdallaoui, and Mustapha Hilali	Inhibition of corrosion of C38 steel in HCl medium by Imidazole derivatives	294
J. Bensalah, M. Berradi, H. Ouaddari, M. Allaoui, A. Habsaoui, A. Lebkiri, and E. H. Rifi	Kinetic and thermodynamic study of adsorption of the cationic dyes by the artificial exchange resin Amberlite-IRC@50	314
H. Rachidi, S. Hamdaoui, and H. Latrache	COVID-19: Analysis of the chemical risk due to the use of disinfectants in the agro-food industry in Morocco	334
M. Chafiq, A. Chaouiki, H. Lgaz, R. Salghi, Mustafa R. Albayati	Anti-corrosion effect of a novel hydrazide derivative for mild steel in 1 M HCl medium: Experimental measurements and quantum chemical evaluation	34
J. Lazrak, El H. El Assiri, S. Alaoui mrani, A. Saady, N. Arrousse, F. El-Hajjaji, M. Taleb, and T. Saffaj	Experimental and theoretical investigation on anticorrosion potential of trans-cinnamaldehyde as eco-friendly compound of mild steel in 1 M HCl	46
Mohammed Bouklah, Naoufal Ataibi, Mohamed Elmhamdi, Belkhir Hammouti	Effect of substitution on corrosion inhibition properties of Imidazole derivatives on mild steel in 1M HCl, and DFT calculations	354
O. Abdellaoui, M.K. Skalli, A. Haoudi, Y. Kandri Rodi, M. Zouhairi, M. Taleb, and O. Senhaji	Study of the inhibition effect of a new cationic surfactant on carbon steel corrosion in a 1M HCl solution	67
Amine El Maraghi, Hocine Garmes, Habib El Alaoui El Abdallaoui, and A. Battah	Inhibition of corrosion of C38 steel in HCl medium by Indazole derivatives	250
Chaymae Hejjaj, A. Ait Aghzzaf, R. Hakkou1, and C.B. Fischer	Novel synthesized hybrid pigment using phosphate for corrosion application	353
A. Chami, R. Benabbou, M. Taleb, Z. Rais, M. El Haji	Analysis of survey data on corrosion in the automotive industry	326
M. Alla, M. L. El Hafyani, E. K. Gharibi	Kinetics of phosphogypsum decomposition by acid attack in the presence of iron	101
K. ZAIDI, C. Merimi,A. AOUINTI, R. TOUZANI , B. HAMMOUTI	The use of glutamic acid and its derivatives as corrosion inhibitors for metals in different aggressive solutions	321
M. Elhoudi, H. Abou Oualid, Christian A. Celaya, Y. Abdellaoui. A. Albourine	A theoretical structural and reactivity study of Alginic acid saccharide with trivalent/bivalent metal cations (Cu ²⁺ , Ce ³⁺)	147
F. El-Hajjaji R. Salim, E. Ech chihbi, B. Hammouti, M. Taleb	New imidazolium ionic liquids as ecofriendly corrosion inhibitors for mild steel in hydrochloric acid (1M): Experimental and theoretical approach	356
El Aatiaoui Abdelmalik, Daoudi Walid, Koudad Mohammed, Benchat Nouredine, Chelfi Tarik, Oussaid Adyl	Synthesis and characterization of new Schiff bases based on Imidazo[1,2-a]pyridine for anti-corrosion applications in 1M HCl media	365

A. El Guerraf, S. Ben Jadi, Z. Aouzal, M. Bouabdallaoui, M. Bazzaoui, E.A. Bazzaoui	Electrochemical Procedure for Obtaining Surface-Enhanced Raman Scattering Active Polypyrrole Films on massive silver plates	373
Hbika Asmae, E. Loukili, A. Bouyanzer, A. Aouiniti, B. Hammouti	Comparative study of the anti-corrosion activity of aqueous extracts from different parts of wormwood	375
I. Merimi, B. Hammouti, C. Merimi, T. Szumiata, G. Serdaroglu, S. Kaya	Electrochemical and theoretical study of the behaviour of a Carbon steel in HCl medium by some triazole type compounds	376
M. Bouklah, N. ATAIBI, B. Hammouti	Evaluation of Impedance Measurements on Mild Steel Corrosion in Acid Media in the Presence of Thiophene Derivatives	377
Mohamed Bendany, Lina Hermouch, Youssra El Hamdouni, Najoua Labjar, Souad El Hajjaji	New electrode based on modified carbon paste/Manganese oxide for oxytetracycline detection	379
Khalid Bouiti, Najoua Labjar, Souad El Hajjaji, Imane Merimi, Ghita Amine Benabdellah	Inhibition of corrosion of C38 in acidic media with the extraction of substances of an organic waste	380
El Mehdi Bouissoui, Najoua Labjar, Souad El Hajjaji, Imane Merimi, Ghita Amine Benabdellah	Comparative behavior study of reinforced concrete reinforcement's corrosion inhibition kinetics	381
Hefdh aldeen, Mohamed ELMAH, Najoua LABJAR, Souad El Hajjaji, Imane Merimi, Ghita Amine Benabdellah	Alcoholic extract of a plant from Polygonaceae family as green inhibitor on corrosion of C38 in 1M HCl medium: An electrochemical study	382

SOIL AND WATER MANAGEMENT TECHNIQUES IN AGRICULTURE

I. Mehdaoui, O. Boularouf, Z. Majbar, I. Atemni, M. Elhaji, M. Benabbou, and M. Taleb, Z. Rais	What effects does an organic amendment to olive waste have on the soil?	70
K. Hjouji, T. Ainane, H. Mikdame, Z. Majbar, M. El Haji, M. Benabbou, M. Taleb, and Z. Rais	Comparative study of the treatment of the raw margins and pre fermented by anaerobic digestion	87
Moukaf Safae, Bachir Elkihel, Ahmed Rassam, Mohamed ALI, and Ahmed ALJ	Study of odors phenomenon in a wastewater treatment plant in agrifood industry.	289
Khalida BOUALI, Mourad ARABI, and Abdelhafid CHAFI	Soil Metallic Contamination by (Pb/Zn) at the abandoned mining waste site of Touissit region, Eastern Morocco	322
Abdellah AZOUGAY, Halima REZQI, Mostafa OUJIDI, Najat AMARJOUF	Assessment of soils liquefaction hazard on the Marchica lagoon zone, NE of Morocco	344

EMERGING MATERIALS FOR ENERGY STORAGE

Aissa Hali , and Yamina Khelifi	Photovoltaic panel parameters determination using two numerical methods	86
A. Azaid , T. Abram, R. Kacimi, A. Sbai, T. Lakhlifi and M. Bouachrine	Organic materials based with D– π –A structure based on thiophene and anthracene for application in dye-sensitized solar cells	189
M. Raftani , T. Abram, M. N. Bennani and M. Bouachrine	Theoretical design of new organic compounds based on diketopyrrolopyrrole and phenyl for organic bulk heterojunction solar cell applications: DFT and TD-DFT study	196
Oussama Aitmellal , Lhoucine Oufni, Mohamed Youssef Messous, and Mounia Tahri	Effect of Ce ³⁺ /Nd ³⁺ co-doping on the down-conversion luminescence of lanthanum phosphate for crystalline silicon solar cells	227
Fatima-Zahra Ouchani , Ouafae Jbahi, Mohammed Maaroufi, and Abdellatif Ghennioui	Assessment of solar photovoltaic technical potential through GIS approach: a case study in Morocco	243
J. Blaacha , R. Aboutni, and A. Aziz	Design of a single-phase inverter controlled by a digital PWM for the optimization of photovoltaic energy	266
A. Missaoui , M. Elkaouini, and H. Chatei	The influence of electron recombination rate on the plasma characteristics in rf argon capacitive discharge	274
Kamal Ezzarrouqy , Abdessamed Hejjaj, and Laila Mandi	Study of the energetic, exergetic and thermal balances of a solar system during the distillation of Rosemary Leaves	309
I. Atmane , K. Kassmi, O. Deblecker, N. Bachiri	Design and realization of an autonomous solar cooker with photovoltaic energy	234

MATERIALS AND DEVICES

Saâdia Es-Sabbeur , J.-D. Massouk, I. Menchou, A. Chérifl, L. Lebrun, and Miloudi Hlaibi	Treatment and strengthening of heritage manuscripts by the insertion of natural polymers. Structural and kinetic study	17
A. Faraji, S. Sabri, R. Malek, and K. Kassmi	Effect of structural properties of InAs/GaAs QDs on optoelectronic devices	89
Houssame Limami , Imad Manssouri, Khalid Cherkaoui, and Asmae Khaldoun	Thermal Analysis of Lightweight Clay Bricks with Organic Typha-Fibers additives Composite	123
Othmane Horma , Mouatassim Charai, and Ahmed Mezrhab	Tea Waste Effect on The Thermal Performance of Cement-based Composite	148
B. Jamal , M. Boukendil, A. Abdelbaki and Z. Zrikem	Thermal analysis of hollow clay bricks submitted to a sinusoidal heating	150

Z. Rbihi , S. E. Lanaya, and A Hannioui.	Hydrosilylation of allylic benzene derivatives with cyclic siloxane D4H and their polymerization	159
Z. Labdouti , T. Mrabti, A. Mouadili, E.H. El Boudouti and F. Fethi	Y-shaped mesoscopic demultiplexer device based on Fano and induced transparency resonances	167
Said El Khezraji , Raquel Verdejo, Lahcini Mohamed. Belhacehmi Mjid, and Miguel Angel Manchado	Bismuth-triflate-catalyzed for the preparation of flexible polyurethane foams	204
Meryem Meliani , Abdellah El Barkany, Ikram El Abbassi, Abdel Moumen Darcherif, and Morad Mahmoudi	Smart Grid implementation in Morocco: Case study	207
Ilhame Assahsahi , Bogdan Popescu, Andrei Galatanu. Magdalena Galatanu, Driss Zejli, and Rachid Elbouayadi	Thermoelectric properties of $Mg_2Si_{1-x}Sn_x$ compounds synthesized by direct co-melting and spark plasma sintering SPS	221
Sara Zerdani , Mohamed Larbi El Hafyan, and Smail Zouggar.	Newly Fault-Tolerant Indirect Vector Control for Permanent Magnet Synchronous Motor drive	245
El Youbi Mohammed , and Tbatou Taoufik.	Behavior Study of RC Structures Confined by Composites Materials	255
R. Elmrabet , Y.Hmidani, R. Mariouch A.Elharfi , and M.S. Elyoubi .	Influence of raw meal composition on clinker activity and cement proprieties	268
Aziz Boulouiz , and Rachid Touzani and El Khadir Gharibi	Pb-free soldering: Experimental and computational approaches of mixing enthalpies	275
Jamal Eddine Hamoutami , and Oum El Khaiat Moustachi	Seismic behavior of a reinforced concrete portal frame treated by carbon fiber reinforced polymer	302
Soufiane El Yassari , and Abdelouafi El Ghoulbzouri	Concrete damage plasticity model for fiber reinforced concrete	293
I. ZDAH , H. EL ALAOUI-BELGHITI, Y. ENNACIRI and M. BETTACH	Efficient procedure for phosphogypsum conversion into portlandite and lithium sulfate monohydrate	346
Mohammed Bellaouchi , N.H. Mtarfi, H. Zaki, S. Naamane, M. Taleb, T. Ainane,W. Maherzi, Zakia Rais	Comparative study of two types of slag in the manufacture of paving stones	329
H. Es-sahbany , M. Belfaquir, K. Moussa, M. L. El Hachimi, M. S. Elyoubi	Adsorption of heavy metals (Cadmium) by the clay of the Tangier region – Morocco	267
M. Loutfi , M. FARAH, M. Belfaquir, M. S. ElYoubi	Removal of Nickel from aqueous solutions using natural clay from northern Morocco	258

ADVANCED ENERGY MATERIALS

Mohammed Moutaouekkil , Abdelkrim Talbi, El Houssine El Boudouti, Omar Elmazria, Bahram Djafari-Rouhani, Philippe Pernod, and Olivier Bou Matar	Tunability of band structures in a phononic crystal made of magneto-elastic disc	19
S. Sabri , A. Faraji, R. Malek, and K. Kassmi	Photoluminescence (PL) characterization of InAs/GaAs Quantum Dots (QDs)	90
Mourad Najjaoui , Thami Ait-Taleb, Abdelhalim Abdelbaki, Zaki Zrikem, and Hassan Chaib	Coupled heat transfers in a hollow block with two air cells deep in vertical direction subjected to an incident solar flux	130
Weam El Merrassi , Abdelouahed Abounada, and Mohamed Ramzi	Advanced speed sensorless control strategy for induction machine based on neuro-MRAS Observer	319
M. ZEKRITI	Theoretical comparison between graphene-on-silver and gold-on-silver based surface plasmon resonance sensor	165
Tarik Zarrouk , Jamal-Eddine Salhi, Khalid Nasri, Samir Atlati, Merzouki Salhi, Mohammed Nouari, Salhi Najim	Numerical study of the milling of composite honeycomb structures Nomex	345
Eric Akpovororo OBAR , Abdelwahed TOUATI and Nabila RABBAH	Embedded Generation Using Shared Solar Energy to mitigate Carbon dioxide emissions and Transmission losses in the Power Sector	347
Othmane Amhoud , Mohamed Kerouad and Ahmed Zaim	Monte Carlo study of Magnetic, Magnetocaloric and Hysteresis behaviors of Cd ²⁺ doped Nd _{1-x} Cd _x MnO ₃	343
L. Jlali , A. Aziz	Modelling of degradation phenomena in photovoltaic modules	349