

2018 9th International Renewable Energy Congress (IREC 2018)

**Hammamet, Tunisia
20 – 22 March 2018**



**IEEE Catalog Number: CFP18REC-POD
ISBN: 978-1-5386-0999-6**

**Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP18REC-POD
ISBN (Print-On-Demand):	978-1-5386-0999-6
ISBN (Online):	978-1-5386-0998-9
ISSN:	2378-3435

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

FEASIBILITY STUDY FOR THE IMPLANTATION OF A PHOTOVOLTAIC GENERATOR IN ADDITION TO THE EXISTING ELECTRICITY SUPPLY IN THE VILLAGE OF TARAT (ILLIZI ALGERIA)	1
<i>A. Mahmoudi, D. Saheb-Koussa, B. M. Najib</i>	
NANOSCALE HEAT TRANSFER IN MOSFET TRANSISTORS WITH HIGH-K DIELECTRICS USING A NON LINEAR DPL HEAT CONDUCTION MODEL	7
<i>M. Belkhiria, F. Echouchene, H. Mejri</i>	
NON EQUILIBRIUM ENTROPY GENERATION IN NANO SCALE MOSFET TRANSISTOR BASED A NONLINEAR DPL HEAT CONDUCTION MODEL	13
<i>F. Echouchene, H. Bel Mabrouk</i>	
BATTERY MANAGEMENT SYSTEM IN ISOLATED MICROGRIDS CONSIDERING FORECAST UNCERTAINTY	19
<i>M. Hijjo, G. Frey</i>	
PV-DIESEL-GRID HYBRID SYSTEMS FOR INDUSTRIAL APPLICATIONS	25
<i>A. Mahmoudi, D. Saheb-Koussa, M. N. Bouaziz</i>	
A REVIEW ON HOME ENERGY MANAGEMENT SYSTEMS	31
<i>A. Zairi, M. Chaabene</i>	
MODEL OF WIND TURBINE- PUMPED STORAGE HYDRO PLANT	37
<i>J. Jamii, F. Mimouni</i>	
IMPLEMENTATION OF FINITE SET MODEL PREDICTIVE CURRENT CONTROL FOR SHUNT ACTIVE FILTER	43
<i>A. Y. Cherif, L. Hicham, B. Kamel</i>	
OPERATION SCHEDULING OF A HOUSEHOLD APPLIANCE FOR OPTIMAL ENERGY DISPATCHING	49
<i>D. Fendri, M. Chaabene</i>	
ORIGINAL POWER SUPPLY SWITCHING ALGORITHM FOR PV/BATTERY/GRID INSTALLATION	55
<i>I. Guidara, S. Charfi, M. Chaabene</i>	
NUMERICAL AND EXPERIMENTAL INVESTIGATIONS OF HEAT EXCHANGES IN HEATED BUILDINGS	60
<i>K. Sahlaoui, M. Tabarki, S. B. Mabrouk</i>	
MODELING CSRR AND OCSR LOADED TRANSMISSION LINE BY BOND GRAPH APPROACH METHODOLOGY	66
<i>I. Salem, H. Taghouti, A. Mami</i>	
ANALYTICAL REVIEW OF RENEWABLE ENERGIES FRAMEWORK IN ALGERIA - FINANCING SCHEMES AND FUNDS	72
<i>S. Fateh, A. Khalida</i>	
CONVENTIONAL TECHNIQUES FOR IMPROVING EMERGENCY CONTROL OF TRANSIENT STABILITY IN RENEWABLE-BASED POWER SYSTEMS	78
<i>G. M. Tina, S. Licciardello, D. Stefanelli</i>	
POWER MANAGEMENT OF A HYBRID WIND GAS ELECTROLYZE MICRO GRID	84
<i>M. Kesraoui, N. Korichi, A. Belkadi</i>	
OPTIMAL SIZING OF CAPACITOR-BANK IN THE LOW VOLTAGE DISTRIBUTION NETWORKS USING JAYA OPTIMIZATION	90
<i>W. Helmy, M. Abbas</i>	
ON THE MODELING OF DYNAMIC HYSTERESIS IN A PERMANENT MAGNET MOTOR USING TRANSIENT FINITE-ELEMENT ANALYSIS	95
<i>M. Hajer, M. Ali, T. Hafedh</i>	
ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY STATE OF CHARGE MEASUREMENT FOR BATTERIES USING POWER CONVERTER MODULATION	101
<i>S. Gadoue, K.-W. Chen, P. Mitcheson, V. Yufit, N. Brandon</i>	
THERMAL RESPONSE OF A COMPOSITE BUILDING ENVELOPE UNDER THE CLIMATIC CONDITIONS OF TUNISIA	106
<i>N. B. Taher, N. Lajimi, N. Boukadida</i>	
METAL-CARBON - POLYMER WATER CELLS GREEN ENERGY SOURCE	112
<i>A. Al-Sudani, H. Al-Qazzaz, F. I. Mustafa</i>	

STATIC ANALYSIS FOR VOLTAGE STABILITY OF THE NORTHERN JORDANIAN POWER SYSTEM.....	119
<i>M. Hammad, A. Harb</i>	
NORTH AFRICAN POWER SYSTEM MONITORING USING PMU TECHNOLOGY.....	124
<i>M. Tsebia, H. Bentarzi</i>	
STABILITY OF THE JORDANIAN ELECTRICAL SYSTEM IN THE PRESENCE OF INTERMITTENT RENEWABLE RESOURCES	130
<i>E. A. Lehyeh, I. Hinti, A. Harb, Q. Safasfeh</i>	
COMPARATIVE STUDY OF DIFFERENT VARIANTS OF DIRECT TORQUE CONTROL APPLIED TO INDUCTION MOTOR	136
<i>H. Aberkane, D. Sakri, D. Rahem</i>	
PRESSURE DROP IN ONE STAGE AND TWO-STAGES OF PACKED COLUMNS	142
<i>H. Troudi, M. Ghiss, M. Ellejmi, Z. Tourki</i>	
FAULT TOLERANT CONTROL OF PERMANENT MAGNET SYNCHRONOUS MOTOR TRACTION MODULE	148
<i>M. Moujahed, M. Hajji, H. B. Azza, M. Jemli, M. Boussak</i>	
FUNDAMENTAL ANALYSIS OF SYNCHRONOUS OPERATION OF AUTONOMOUS INDUCTION GENERATOR	153
<i>S. Mourad, R. Habib</i>	
PRELIMINARY HYDRODYNAMIC STUDY OF NEW MULTI-STAGE BIOMASS GASIFIER	158
<i>M. Dhrioua, W. Hassen, L. Kolsi, V. Anbumalar, M. N. Borjini</i>	
CHARACTERISATION OF BIO-OIL AND GAS FROM THE PYROLYSIS OF SEVERAL BIOMASS SOURCES IN ALGERIA	164
<i>N. Boukaous, L. Abdelouhed, C. Mohabeer, A.-H. Meniai, M. Chikhi, B. Taouk</i>	
INTERACTIONS AND INTERFERENCES OF CU, CR AND AS DURING CONTAMINATED WASTE WOOD GASIFICATION: A THERMODYNAMIC EQUILIBRIUM STUDY	170
<i>S. Al-Badri, Y. Jiang, S. Wagland</i>	
CUTTING OIL EMULSION TREATMENT BY ELECTROCOAGULATION USING ALUMINUM AND IRON ELECTRODES	177
<i>A. Dermouchi, M. Bencheikh-Lehocine, S. Arris, A.-H. Meniai, N. Barsan, N. Valentin</i>	
A REVIEW ON THE MAIN FUEL CELL AND ENERGY COGENERATION TECHNOLOGIES.....	183
<i>S. V. M. Guaitolini, I. Yahyaoui, J. F. Fardin, L. F. Encarnação, F. Tadeo</i>	
STRUCTURAL AND ELECTROCHEMICAL CHARACTERIZATION OF NEW CO-DOPED SPINEL FERRITE NANOMATERIAL USED AS NEGATIVE ELECTRODE IN NI/MH BATTERY	189
<i>W. Zayani, S. Azizi, K. S. El-Nasser, I. O. Ali, H. Mathlouthi</i>	
DISPATCHABLE HYDROGEN PRODUCTION BY MULTIPLE ELECTROLYSERS TO PROVIDE CLEAN FUEL AND RESPONSIVE DEMAND IN LIBYA	194
<i>A. Rahil, R. Gammon, N. Brown</i>	
EIS STUDY OF MH NEGATIVE ELECTRODE/ELECTROLYTE INTERFACE DURING CYCLING	200
<i>Y. B. Belgacem, C. Khaldi, J. Lamloumi</i>	
KINETICS AND CORROSION PROPERTIES OF THE LAI2NI9 ALLOY USED AS ANODE FOR NICKEL-METAL HYDRIDE BATTERIES	205
<i>M. Lahsini, Y. B. Belgacem, C. Khaldi, J. Lamloumi</i>	
MODELING AND CONTROL OF A DC-DC RESONANT CONVERTER INTERFACING FUEL CELL IN ELECTRIC VEHICLE	210
<i>S. Farhani, F. Bacha</i>	
PEM FUEL CELL EFFICIENCY BOOSTING - ROBUST MPP TRACKING	216
<i>M. Derbeli, I. Mrad, L. Sbitta, O. Barambones</i>	
AN IMPROVED OPEN CATHODE PROTON EXCHANGE MEMBRANE FUEL CELL CONTROL ENSURING A SIMULTANEOUS REGULATION OF TEMPERATURE AND AIR FLOW	221
<i>C. Mahjoubi, S. Skander-Mustapha, J. C. Olivier, I. Slama-Belkhodja, M. Machmoum</i>	
FREQUENCY SEPARATION BASED ENERGY MANAGEMENT STRATEGY FOR FUEL CELL ELECTRICAL VEHICLE WITH SUPER-CAPACITOR STORAGE SYSTEM.....	227
<i>H. Marzougui, A. Kadri, M. Amari, F. Bacha</i>	
EFFECT OF INTER-CATALYTIC LAYER SPACING AT WALL-COATED STEAM METHANE REFORMER SURFACES ON HYDROGEN PRODUCTION	233
<i>A. Settari, R. Nebbali, B. Madani, S. Abboudi</i>	
EFFECT OF PLASMA NITRIDING ON AISI 304 STAINLESS STEEL SURFACE ELECTROCHEMICAL PROPERTIES AND HYDROGEN EVOLUTION RATE	238
<i>S. Allami, M. Redah</i>	

SYNTHESIS AND CHARACTERIZATION OF SULFONYLIMIDE BASED POLY(ARYLENE ETHER SULFONE) COPOLYMERS FOR PROTON-EXCHANGE MEMBRANE.....	244
<i>S. C. Sutradhar, F. Ahmed, T. Ryu, Hanmo Yang, Sujin Yoon, Seungchan Lee, Inhwan Choi, Whangi Kim</i>	
BACKSTEPPING CONTROL OF A PMSG-BASED MARINE CURRENT TURBINE SYSTEM UNDER FAULTY CONDITIONS	248
<i>S. Toumi, Y. Amirat, M. Traelsi, E. Elbouchikhi, M. F. Mimouni, M. Benbouzid</i>	
HARVESTING KINETIC ENERGY OF FOOTSTEPS ON SPECIALLY DESIGNED TILES.....	254
<i>D. Dalabeih, B. Haws, S. Muhtaseb</i>	
MODELING THE VELOCITY OF MARINE CURRENTS RESOURCES ON A MOROCCAN COASTAL (TARFAYA) USING SWAN MODEL.....	258
<i>S. Hazim, A. Benazzouz, A. Ghuennioui, M. T. Janan, A. Elouatouati, B. Ikken</i>	
DESIGN AND ANALYSIS OF HYDROELECTRIC GENERATION USING WATERWHEEL	262
<i>J. Hameed, A. Saeed, M. Rajab</i>	
LOAD ANALYSIS EFFECT ON GRID FAULT EMULATOR	268
<i>S. Skander-Mustapha, M. J.-B. Ghorbal, M. Miladi, I. Slama-Belkhodja</i>	
STABILITY ANALYSIS OF PV-BASED DC MICROGRID WITH COMMUNICATION DELAY	274
<i>A. Khalil, A. Ashiebi, A. M. Elbreki, Z. Rajab, A. Alfergani, A. Mohamed, A. Nouh</i>	
ENHANCEMENT OF OVER CURRENT COORDINATION FOR A DISTRIBUTION SYSTEM CONNECTED TO A MICROGRID USING UNIDIRECTIONAL FAULT CURRENT LIMITER	280
<i>S. Saad, N. El Naily, J. Wafi, A. Elhaffar, F. Mohamed</i>	
CONTROL STRATEGIES IN AC MICROGRID: A BRIEF REVIEW.....	286
<i>A. Alfergani, K. Alfaitori, A. Khalil, N. Buaossa</i>	
DC VOLTAGE LEVEL CHOICE IN RESIDENTIAL REMOTE AREA.....	292
<i>S. Moussa, M. J.-B. Ghorbal, I. Slama-Belkhodja</i>	
FEASIBILITY ANALYSIS OF A WIND PUMPED HYDROELECTRIC STORAGE SYSTEM ON THE ISLAND OF BRAVA	298
<i>M. A. R. S. Cruz, I. Yahyaoui, H. R. O. Rocha, M. E. V. Segatto, A. Atieh</i>	
ELECTRICITY DEMAND FORECASTING OF A MICRO GRID USING ANN.....	304
<i>E. Akarslan, F. O. Hocaoglu</i>	
SIMULATION OF A SINGLE-PHASE SEVEN-LEVEL PACKED U CELLS RECTIFIER: A COMPARATIVE STUDY BETWEEN PWM CONTROL AND HYSTERESIS CONTROL	309
<i>A. B. Zid, F. Bacha</i>	
PLANNING & APPLICATION OF DISTANCE RELAYS COORDINATION FOR IEC MICROGRID CONSIDERING INTERMEDIATE IN-FEED FACTOR.....	315
<i>N. El Naily, S. Saad, R. Elsayed, S. Aomura, F. Mohamed</i>	
DC BUS VOLTAGE INSTABILITY DETECTION AND STABILIZATION UNDER CONSTANT POWER LOAD VARIATION.....	321
<i>S. Moussa, M. J.-B. Ghorbal, I. Slama-Belkhodja, J.-P. Martin, S. Pierfederici</i>	
TECHNO-ECONOMIC FEASIBILITY STUDY OF A HYBRID BIOMASS/PV/DIESEL/BATTERY SYSTEM FOR POWERING THE VILLAGE OF IMLIL IN HIGH ATLAS OF MOROCCO.....	327
<i>H. Benchraa, A. Redouane, I. El Harraki, A. El Hasnaoui</i>	
AN OPTIMIZED PROACTIVE OVER-CURRENT PROTECTION SCHEME FOR MODERN DISTRIBUTION GRIDS INTEGRATED WITH DISTRIBUTED GENERATION UNITS	333
<i>S. Saad, N. El Naily, J. Wafi, T. Hussein, F. Mohamed</i>	
DYNAMIC PRICING; DIFFERENT SCHEMES, RELATED RESEARCH SURVEY AND EVALUATION	339
<i>A. Gabr, A. Helal, N. Abbasy</i>	
DEPLOYMENT OF SMART GRID ON NARROWBAND POWER LINE COMMUNICATION USING OFDMA	346
<i>A. Yousaf, F. Khan, Z. Hameed</i>	
“RIGRID” PROJECT AS FIRST POLISH STEP TOWARDS SELF-REGULATING AND “GREEN” SMART GRID SYSTEM	352
<i>M. Poplawska</i>	
DC OFFSET COMPENSATION TECHNIQUE FOR GRID CONNECTED INVERTERS	358
<i>A. Omar, M. Fouad, A. El-rfaey, Y. Gaber</i>	
ON-LINE ADAPTIVE PROTECTION SCHEME TO OVERCOME OPERATIONAL VARIABILITY OF DG IN SMART GRID VIA FUZZY LOGIC AND GENETIC ALGORITHM.....	365
<i>N. El Naily, S. Saad, T. Hussein, K. El-Arroudi, F. Mohamed</i>	
APPLICABILITY ANALYSIS OF PROACTIVE RECLOSER- FUSE SCHEME FOR WIND DISTRIBUTED GENERATION INTO MODERN DISTRIBUTION NETWORK	371
<i>J. Wafia, S. Saad, N. Al-Naily, K. El-Arroudi, F. Mohamed</i>	

NEW SWITCHING LOOKUP TABLE FOR DIRECT POWER CONTROL OF A THREE-PHASE PWM RECTIFIER.....	377
<i>F. Tlili, F. Bacha, M. Guesmi</i>	
MERRY-GO-ROUND AS A SELF-ENERGY SUSTAINABLE RIDE	382
<i>A. Saeed, M. Shan, H. Tariq, S. Bakhtawar</i>	
STEPS TOWARDS SUSTAINABILITY: ENERGY GENERATING SWING RIDE	386
<i>A. Saeed, D. M. Ezzi, A. R. K. Niazi, M. M. Haris, W. Amin</i>	
ENERGY MANAGEMENT USING WIRELESS TECHNOLOGIES: A COMPREHENSIVE STUDY	391
<i>M. A. Saeed, I. Amin, F. Mumtaz</i>	
CYPRUS ENERGY RESOURCES AND THEIR POTENTIAL TO INCREASE SUSTAINABILITY	397
<i>M. Tsangas, A. Zorpas, M. Jeguirim, L. Limousy</i>	
POLICIES LOST IN TRANSLATION: COMBATING THE GREEN HOUSE GAS EMISSION MERRY-GO-ROUND FOR INCREASED UTILIZATION OF RENEWABLE ENERGY TECHNOLOGIES.....	404
<i>K. Imasiku, B. Coop, E. Ntagwirumugara</i>	
OPTIMIZATION OF NRTL INTERACTION PARAMETERS FOR VAPOR LIQUID EQUILIBRIUM USING GENETIC ALGORITHM.....	410
<i>B. Nardjess, M. Abdeslam-Hassen</i>	
THE EQUILIBRIUM MODEL OF ELECTRICITY MARKET CONSIDERING GREEN CERTIFICATE TRADING.....	415
<i>Jianlin Yang, Yichao Huang, Mingxing Guo, Li Lan, Hao Cong</i>	
EVALUATION OF URBAN LOGISTICS SYSTEMS: SURVEY ON THE FREIGHT FOR COMPANIES ACTIVE IN THE GRAND SFAX.....	421
<i>T. Barhoumi, Y. Boujelbene</i>	
ANALYSIS OF BARRIERS RELATED TO IMPLEMENTATION OF A WASTE MANAGEMENT POLICY IN SFAX CITY USING ISM METHOD	427
<i>I. Kharrrat, Y. Boujelbene</i>	
OPTIMIZATION OF UNIQUAC INTERACTION PARAMETERS FOR ABSORPTION REFRIGERATION MACHINE WORKING FLUIDS.....	433
<i>L. Ilhem, B. Nardjess, M. A.-H. Procedes</i>	
CURRENT DEPENDENCE OF SERIES AND SHUNT RESISTANCES OF SOLAR CELLS	438
<i>M. Loulou, M. K. Al Turkestani, N. Brahmi, M. Abdelkrim</i>	
ASSESSMENT OF PV SYSTEMS STABILITY UNDER TEMPERATURE VARIATION	443
<i>A. Saidi, M. E. Mudwah, K. B. Kilani</i>	
OPTIMIZATION OF PV MODEL USING FUZZY-NEURAL NETWORK FOR DC-DC CONVERTER SYSTEMS	449
<i>A. Ali, A. Hasan</i>	
USE OF MPPT TECHNIQUES TO REDUCE THE ENERGY PAY-BACK TIME IN PV SYSTEMS	455
<i>A. Ali, A. Hasan, A. Farayola</i>	
PARTIAL SHADING EFFECT INVESTIGATION ON PV PERFORMANCE INDICATORS	461
<i>A. Triki-Lahiani, A. B.-B. Abdelghani, I. Slama-Belkhodja</i>	
CONTROL DESIGN AND EXPERIMENTAL SET-UP FOR A HIGH-POWER PV GENERATOR EMULATOR.....	467
<i>M. Hasnaoui, A. B.-B. Abdelghani, I. Slama-Belkhodja</i>	
PMSM DTC DRIVE SYSTEM FED BY FAULT- TOLERANT INVERTER CONNECTED TO A PHOTOVOLTAIC SOURCE.....	473
<i>M. Abassi, O. Saadaoui, I. Tlili, O. Khlaief, A. Chaari, M. Boussak</i>	
NANOINDENTATION AND AFM CHARACTERIZATION OF LITHIUM-DOPED ZNO SPRAYED THIN FILMS.....	478
<i>M. Salah, S. Azizi, C. Khaldi, J. Lamloumi</i>	
PHOTOVOLTAIC AS A PROMISING SOLUTION FOR PEAK DEMANDS AND ENERGY COST REDUCTION IN JORDAN	483
<i>M. Al Shafeey, A. Harb</i>	
FAULT DIAGNOSIS IN A PHOTOVOLTAIC SYSTEM THROUGH I-V CHARACTERISTICS ANALYSIS	487
<i>S. Sarikh, M. Raoufi, A. Bennouna, A. Benlarbi, B. Ikken</i>	
SIMPLE DESIGN AND IMPLEMENTATION OF SOLAR SYSTEM TWO AXIS WITH FOUR SENSORS FOR BAGHDAD CITY.....	493
<i>F. Mustafa, F. Mustafa, A. Naiyf</i>	

ECONOMIC FEASIBILITY, DESIGN, AND SIMULATION OF CENTRALIZED PV POWER PLANT	498
<i>A. Kadem , Z. Rajab, A. Khalil, A. Tahir, A. Alfergani, F. A. Mohamed</i>	
A PERSPECTIVE ON 50% SOLAR POWER EVOLUTION TO SUPPORT 100% CO₂ FREE ELECTRICAL ENERGY PRODUCTION.....	504
<i>M. Sanduleac</i>	
CONCEPTION AND DESIGN OF A SUSTAINABLE GREEN ROOF FOR CAR PARKS WITH INTEGRATED SOLAR TRACKING PHOTOVOLTAIC SYSTEM	510
<i>R. Silva, C. Serra, M. Brett, M. Boulé, N. Simões, A. Tadeu, S. Matos, N. Miranda</i>	
EFFECT THICKNESS AND ANNEALING TEMPERATURE ON THE CIGS THIN FILM SOLAR CELL PERFORMANCE	514
<i>F. Mustafa, M. Kadhim, N. Hintaw</i>	
FEASIBILITY EVALUATION OF STAND-ALONE PHOTOVOLTAIC SYSTEMS FOR RESIDENTIAL LOADS.....	519
<i>M. Ali, A. Yousaf, F. G. Seharan</i>	
STUDY OF CZTS/ZNS SOLAR CELLS BY CIRCUIT BASED MODELING	523
<i>A. Cherouana, R. Labbani</i>	
COMPARISON OF EXPERIMENTALLY OBTAINED I-V CURVES OF DIFFERENT PV MODULES.....	528
<i>F. O. Hocaoglu, F. Serttas, M. Kurekci, E. Akarslan, S. M. Cinar, R. Dogan, A. Yonetken</i>	
PLASMONICALLY-ENHANCED ABSORPTION IN ORGANIC SOLAR CELLS WITH METAL NANOSTRUCTURES.....	532
<i>M. Z. Islam, F. Snigdha, M. S. Hasan</i>	
PERFORMANCE COMPARISON AMONG BOOST AND MULTI LEVEL BOOST CONVERTERS FOR PHOTOVOLTAIC GRID CONNECTED SYSTEM USING FINITE SET MODEL PREDICTIVE CONTROL	537
<i>S. I. Remache, K. Barra</i>	
A FEASIBILITY STUDY OF PV INSTALLATION: CASE STUDY AT SHAQRA UNIVERSITY	543
<i>A. A. A. Hafez, A. Alblawi</i>	
MONITORING A MAXIMUM POWER POINT TRACKING PHOTOVOLTAIC PUMPING SYSTEM.....	548
<i>C. O. Ehssein, A. Ba, N. O. Dah, M. I. Lam, D. Amadou, A. El Hassan</i>	
MODELLING AND SIMULATION OF THE HYBRID SYSTEM PV-WIND WITH MATLAB/SIMULINK	554
<i>M. Y. Allani, M. Jomaa, D. Mezghani, A. Mami</i>	
DESIGN AND CONTROL OF THE HYBRID SYSTEM PV-WIND CONNECTED TO THE DC LOAD	560
<i>M. Jomaa, M. Y. Allani, F. Tadeo, A. Mami</i>	
EFFICIENT SIZING AND PLANNING ALGORITHM FOR PHOTOVOLTAIC-DIRECTWATER PARALLEL PUMPING	566
<i>A. Souissi, D. Fendri, M. Chaabene</i>	
HARMONIC CURRENT COMPENSATION IN A SINGLE PHASE GRID CONNECTED PHOTOVOLTAIC SYSTEM SYPPLYING NONLINEAR LOAD.....	572
<i>C. Khomsi, M. Bouzid, K. Jelassi, G. Champenois</i>	
MODELING INNOVATION DIFFUSION FOR RENEWABLE ENERGY TECHNOLOGIES IN CITY NEIGHBORHOODS.....	578
<i>S. Abbar, A. Boumaiza, N. Mohandes, A. Sanfilippo</i>	
A COMPARATIVE STUDY OF MPPT CONTROLLERS FOR PHOTOVOLTAIC PUMPING SYSTEM.....	584
<i>R. El Idrissi, A. Abbou, M. Mohcine, M. Salimi</i>	
IMPROVED FAST PARTICLE SWARM OPTIMIZATION BASED PV MPPT.....	590
<i>M. Merchaoui, A. Sakly, M. F. Mimouni</i>	
ANALYSIS OF A FLEXIBLE SINGLE-PHASE MULTILEVEL INVERTER TOPOLOGY FOR PHOTOVOLTAIC APPLICATIONS	597
<i>M. Hammami, M. Vujacic, A. Viatkin, G. Grandi</i>	
PRELIMINARY PERFORMANCE ANALYSIS OF A CPV SYSTEM WITH DUAL-AXIS TRACKER IN A DESERT REGION.....	603
<i>K. Ettalbi, H. Bouzekri, Z. Naimi, Y. Abiko, M. Ueyama, R. Mikami</i>	
ANALYSIS AND EVALUATION OF PHTOVOLTAIC INTEGRATION IMPACTS IN TUNISIAN GRID USING PSSE.....	609
<i>N. Mansouri, A. Cherif, C. Bouchoucha</i>	

SOLFONATING PVA MEMBRANE FOR PEM HYDROGEN FUEL CELL	615
<i>Z. D. A. Ali, S. A. Allami, N. M. Jalal, M. R. Ali</i>	
PERFORMANCE IMPROVEMENT OF A SOLAR ASSISTED DESICCANT AIR CONDITIONING COUPLED WITH CONDENSER FOR WATER PRODUCTION.....	621
<i>A. E. Kabeel, M. Abdelgaied, Y. Zakaria, R. Sathyamurth</i>	
MODEL-BASED ANALYSIS OF THE PERFORMANCE AND THE ENVIRONMENTAL IMPACT OF SOLAR THERMAL AND HEAT PUMP SYSTEMS.....	627
<i>D. Jonas, G. Frey</i>	
THERMAL STUDY OF SOLAR PARABOLIC TROUGH CONCENTRATOR.....	633
<i>K. Ghazouani, S. Skouri, S. Bouadila, A. A. Guizani</i>	
OPTIMAL SOLAR COLLECTORS DEFOCUSING BASED ON MAXIMUM TEMPERATURE.....	637
<i>T. A. Elias, P. R. C. Mendes, J. E. Normey-Rico, C. B. Alba</i>	
NEW MODEL TO ESTIMATE MONTHLY GLOBAL SOLAR RADIATION FROM AIR TEMPERATURE IN ALGERIA	642
<i>R. Ihaddadene, N. Ihaddadene, M. Salemi, A. H. Beridja</i>	
EXERGY AND ENERGY ANALYSIS OF THE SOLAR DRYING PROCESSES OF TOMATOES IN TUNISIA	648
<i>I. Hamdi, S. Kooli</i>	
STUDY AND SIMULATION OF AN EJECTOR-ABSORPTION COOLING SYSTEM USING AMMONIA-WATER	654
<i>N. Benaid, N. Hajji</i>	
IMPACT OF THE INTEGRATION OF PHASE CHANGE MATERIALS ON THE THERMAL BEHAVIOR OF THE BUILDING ENVELOPE DURING THE SUMMER PERIOD OF TUNISIA	658
<i>S. Souguir, N. Iajimi, N. Boukadida</i>	
INCUBATOR SYSTEM IDENTIFICATION OF HUMIDITY AND TEMPERATURE: COMPARISON BETWEEN TWO IDENTIFICATION ENVIRONMENTS.	663
<i>J. El Hadj Ali, E. Feki, M. A. Zermani, C. De Prada, A. Mami</i>	
SURVEY OF POTENTIAL OUTDOOR ACCELERATED AGEING SYSTEMS FOR THE CHARACTERIZATION OF CSP COMPONENTS' DURABILITY.....	669
<i>A. Nijaoui, S. Rachidi, H. Bouzekri, O. Raccurt, F. Vidal, R. Albert, E. Le Baron, M. Boudi</i>	
THERMODYNAMIC ANALYSIS OF SULFURIC ACID PRODUCTION UNIT	677
<i>F. Hafidhi, T. Khir</i>	
ENHANCEMENT OF THE DYNAMIC BEHAVIOR OF THE LOW VOLTAGE RIDE-THROUGH WIND TURBINES	681
<i>A. Saidi, W. Helmy</i>	
CONTROL SCHEME OF STAND-ALONE DOUBLY FED INDUCTION GENERATOR FOR DC VOLTAGE APPLICATIONS	687
<i>B. Touaiti, H. B. Azza, M. Jemli</i>	
DISTRIBUTIONS OF WIND SPEED IN A NORTHERN ENVIRONMENT.....	693
<i>T. Ouarda, C. Charron</i>	
CONTROL OF THE ACTIVE AND REACTIVE POWERS OF A PERMANENT MAGNET SYNCHRONOUS GENERATOR USING SINGULAR PERTURBATIONS DECOUPLAGE.....	696
<i>R. Moutchou, A. Abbou, A. vall Hemeyine</i>	
WIND TURBINE PITCH SYSTEM CONDITION MONITORING BASED ON PERFORMANCE CURVES IN MULTIPLE STATES	702
<i>Lu Wei, Zheng Qian, Cong Yang, Yan Pei</i>	
AN IMPROVED CONTROL FOR DC-LINK FLUCTUATION DURING VOLTAGE DIP BASED ON DFIG	708
<i>I. Ngom, A. B. Mboup, S. Skander-Mustapha, I. S. Belkhdja, L. Thiaw</i>	
PRACTICAL NONLINEAR MODEL PREDICTIVE CONTROL OF A 5 MW WIND TURBINE.....	714
<i>L. G. Lopez, J. E. Normey-Rico</i>	
VRMS CONTROL OF SELF-EXCITED INDUCTION GENERATORS FEEDING A THREE- PHASE AC LOAD USED IN WIND TURBINE.....	720
<i>A. Abbou, R. Elakhrif, A. Mousmi</i>	
ADVANCED SELF-TUNED PITCH ANGLE CONTROL BASED ON FUZZY LOGIC FOR GRID CONNECTED VARIABLE-SPEED WIND TURBINE SYSTEM	726
<i>A. Elfergani, M. Elsharif, R. Hamd, S. Saad, N. El Naili, F. Mohamed</i>	
EXPERIMENTAL DSPACE ANALYSIS FOR PERMANENT MAGNET SYNCHRONOUS GENERATOR USED IN VOLTAGE CONTROL.....	732
<i>R. El Akhrif, A. Abbou, M. Ferfra</i>	

STUDY AND IMPLEMENTATION OF A STATIC COMPENSATOR (STATCOM) USING DIRECT POWER CONTROL STRATEGY	738
<i>K. Sayahi, A. Kadri, R. Karwi, F. Bacha</i>	
PRACTICAL DESIGN AND PERFORMANCE EVALUATION OF MICRO-WIND TURBINE IN LIBYA	744
<i>M. Aldricy, K. Ragab, Z. Rajab, A. Tahir, A. Khalil, N. Buaossa</i>	
WATER CYCLE ALGORITHM-TUNED PI CONTROL OF A DOUBLY FED INDUCTION GENERATOR FOR WIND ENERGY CONVERSION	750
<i>M. M. Alhato, S. Bouallegue, M. Ayadi</i>	
PREDICTIVE ALGORITHM FOR MATRIX CONVERTER CONTROL IN WIND ENERGY CONVERSION SYSTEM BASED DFIG	756
<i>Z. Kara, K. Barra, A. Y. Cherif</i>	
NUMERICAL INVESTIGATION OF A GENERATED VORTEX AROUND A STRAIGHT CAMBERED BLADE PROFILE NACA4312	762
<i>K. Souaissa, M. Ghiss, M. Chrigui, H. Bentaher, A. Maalej</i>	
Author Index	