2022 IEEE 21ˢᵗ International Conference on Sciences and Techniques of Automatic Control and Computer Engineering (STA)

Conference Program

19-21 December 2022
Royal kenz Hotel, Sousse – Tunisia

WELCOME

Program of the 2022

IEEE 21ST STA

conference

19-21 December 2022
Royal kenz Hotel, Sousse – Tunisia

Program of 2022 IEEE 21st STA conference

Time	Day		
	MONDAY, 19	**TUESDAY, 20**	**WEDNESDAY, 21**
8:30-9:30	OPENING CEREMONY	Plenary Session SP2	ORAL SESSIONS
9:30-10:30	Plenary Session SP1	Plenary Session SP3	Workshop 1
10:30-10:50	COFFEE BREAK		
10:50-12:30	ORAL SESSIONS	ORAL SESSIONS	ORAL SESSIONS / Workshop 2 / CLOSING CEREMONY
12:30-14:30	LUNCH		
14:30-16:30	ORAL SESSIONS	ORAL SESSIONS	
16:30-16:50	COFFEE BREAK		
16:50-18:30	ORAL SESSIONS	ORAL SESSIONS	

2022 IEEE 21ST STA

International Conference

Plan of Sessions

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Monday 19 December 2022

TIME	PLACE	EVENT
9:00-9:30	Room 1	**Opening Ceremony and Registration**
9:30-10:30	Room 1	**Plenary Session SP1: Prof. Dhaker ABBES** (Optimal management of multi-source systems with renewable production and storage)
10:30-10:50		**Coffee Break**
10:50-12:30	Room 1	**Session 1**: Advanced Control Systems (ACS)
	Room 2	**Session 2**: Robotics and Automation (RA)
	Room 3	**Session 3**: Circuits, Electronics & Microelectronics (CEM)
	Room 4	**Session 4**: Signal and Image Processing (SIP)
12:30-14:30		**Lunch**
12:30-16:30	Room 1	**Session 5**: Energy Conversion Systems (ECS)
	Room 2	**Session 6**: Artificial Intelligence Based Control (AIBC)
	Room 3	**Session 7**: Modelling of Engineering Systems (MES)
	Room 4	**Session 8**: TeleCommunication Engineering (TCE)
16:30-16:50		**Coffee Break**
16:50-18:30	Room 1	**Session 9**: Control, Automation and Diagnosis (CAD)
	Room 2	**Session 10**: Electrical Power System (EPS)
	Room 3	**Session 11**: Nonlinear Controls and Applications (NCA)
	Room 4	**Session 12**: Renewable Energy and Smart Grids (RESG)

Tuesday 20 December 2022

Time	Place	Event
8:30-10:30	Room 1	**Plenary Session SP2**: Prof. Aissa CHOUDER AC and DC microgrids : Concepts, Architectures and Control Challenges
	Room 1	**Plenary Session SP3**: Prof. Ahmed RUBAAI Hierarchical Control of Interconnected Power Systems: A Two-Level Supervisory Controller for Transient Stability Crisis
10:30-10:50		**Coffee Break**
10:50-12:30	Room 1	**Session 13**: Fault Tolerant Control Systems (FTCS)
	Room 2	**Session 14**: Circuits, Electronics & Microelectronics (CEM)
	Room 3	**Session 15**: Signal and Image Processing (SIP)
	Room 4	**Session 16**: Electrical Power System (EPS)
12:30-14:30		**Lunch**
14:30-16:30	Room 1	**Session 17**: Control of Electrical Vehicles (CEV)
	Room 2	**Session 18**: Artificial Intelligence Based Control (AIBC)
	Room 3	**Session 19**: Energy Management Systems (EMS)
	Room 4	**Session 20**: Renewable Energy and Smart Grids (RESG)
16:30-16:50		**Coffee Break**
16:50-18:30	Room 1	**Session 21**: Signal and Image Processing (SIP)
	Room 2	**Session 22**: Electrical Power System (EPS)
	Room 3	**Session 23**: TeleCommunication Engineering (TCE)
	Room 4	**Session 24**: Online

Wednesday 21 December 2022

Time	Place	Event
8:30-10:30	Room 1	**Workshop 1 P1**: Prof. Abdelkader SELLAMI **Modeling and control of a manipulator arm (CAPAX-4R)**
	Room 2	**Session 25**: Circuits, Electronics & Microelectronics (CEM)
	Room 3	**Session 26**: Control, Automation and Diagnosis (CAD)
	Room 4	**Session 27**: Electrical Power System (EPS)
10:30-10:50	**Coffee Break**	
10:50-12:10	Room 1	**Workshop 1 P2**: Prof. Abdelkader SELLAMI **Modeling and control of a manipulator arm (CAPAX-4R)**
	Room 2	**Workshop 2**: Prof. TOURNAKIS Alexandre **(European projects: keys of success, learnings and examples**
	Room 3	**Session 28**: IoT Networks & Industry 4.0 (IoTNI)
	Room 4	**Session 29**: Networks and Electrical Machines (NEM)
12:10-13:00	**Closing Ceremony**	
13:00-14:30	**Lunch**	

First Day

Monday, December 19, 2022

Opening of the 20th international conference STA'2020: 08h30–09h00

ROOM 1

Chairmen's: Abdelouaheb AITOUCHE & Hafedh ABID

Prof. Dhaker ABBES. Optimal management of multi-source systems with renewable production and storage

Coffee Break   Time (10:30-10:50)

ROOM 1

Session 1: Advanced Control Systems (ACS)			
Chairs: Hamdi GASSARA & Karim DAHECH			
Time	**Paper ID**	**Paper Title**	**Authors**
10:50-11:10	08	Observer Design and Sensorles Control in Electrical Machines: A Brief Overview	Omar Naifar, Mourad Elloumi and Hamdi Gassara
11:10-11:30	67	An Optimal Control Approach for Switched Nonlinear Systems Based on Selfish Herd Optimization Algorithm	Marwen Kermani and Anis Sakly
11:30-11:50	50	New strategy for fast model based predictive control using Volterra model : Real time application	Ali Hmidene, Hichem Bennasr and Faouzi M'Sahli
11:50-12:10	166	Simulation Analysis and Control of Wireless Power Transfer for Implantable Medical Devices	Adel Emhemmed, Ahmed Abougarair, Omran Salih and Sara S. Alsamlqi
12:10-12:30	4	Battery management system for micro_grid application with correction algorithms	Mohamed Haikel Chehab, Chokri Ben Salah and Makram Khelil

ROOM 2

Session 2: Robotics and Automation (RA)			
Chairs: Chokri REKIK & Mohamed BOUKATTAYA			
Time	**Paper ID**	**Paper Title**	**Authors**
10:50-11:10	68	Neuro-fuzzy Control of a Mobile Robot	Islem Reguii, Imen Hassani and Chokri Rekik
11:10-11:30	74	Adaptive Kinematic Control for the Trajectory Tracking of Unmanned Surface Vehicle with Unknown Ocean Currents	Sami Souissi and Mohamed Boukattaya
11:30-11:50	121	Automated Scanning of Concrete Structures for Crack Detection and Assessment Using a Drone	Amna Smaoui, Yacine Yaddaden, Raef Cherif and Dorra Lamouchi
11:50-12:10	167	Robust non-singular fast terminal sliding mode control of the spatial parallel robot	Ahlem Saidi, Neila Mezghani Ben Romdhane and Tarak Damak
12:10-12:30	194	Rehabilitation robot with a new diagnostic and control protocol	Ismail Ben Abdallah and Yassine Bouteraa

ROOM 3

	Session 3: Circuits, Electronics & Microelectronics (CEM)		
Chairs: Mounir SAMET & Mouloud CHALLAL			
Time	**Paper ID**	**Paper Title**	**Authors**
10:50-11:10	89	An enhanced ECA/Chaotic-based PRNG: Hardware design and Implementation	Nessrine Abbassi, Mohamed Gafsi, Mohamed Ali Hajjaji and Abdellatif Mtibaa
11:10-11:30	90	Hardware design and implementation of a lightweight stream cipher cryptosystem: A Chaotic/Reversible Cellular Automata Approach	Nessrine Abbassi, Mohamed Gafsi, Mohamed Ali Hajjaji and Abdellatif Mtibaa
11:30-11:50	37	Effect of Thickness on the Hysteresis Cycles of Ni/NiO Multilayer Structure Prepared Using RF Sputtering Technique	A. Bendjerad, A. Benhaya, F. Smaili, F. Djeffal, A. Lahmar and Hichem Ferhati
11:50-12:10	56	Extraction of image features based on the HOG method in the HSV color space	Fayçal Hamdaoui, Sana Bougharriou, Manel Gueddari and Anis Sakly
12:10-12:30	153	Voxel-based 3D MRI volume segmentation system using real-time hardware architecture	Fayçal Hamdaoui and Anis Sakly

ROOM 4

	Session 4: Signal and Image Processing (SIP)		
Chairs: Lotfi KAMOUN & Ali KHALFALLAH			
Time	**Paper ID**	**Paper Title**	**Authors**
10:50-11:10	103	12-lead ECG Reconstruction with an Optimized LSTM Neural Network	Nizar Dhahri, Nesrine Majdoub, Taoufik Ladhari, Anis Sakly and Faouzi Msahli
11:10-11:30	05	Consistency Regularization-based Polyphonic Sound Event Detection with Minimal Supervision	Zhor Diffallah, Hadjer Ykhlef, Hafida Abed and Nardjesse Diffallah
11:30-11:50	111	QTMT partitionning structure in VVC : Overview and Analysis	Bouthaina Abdallah, Fatma Belghith, Mohamed Ali Ben Ayed and Nouri Masmoudi
11:50-12:10	102	A New Method of Crack Width Estimation for Concrete Structures Monitoring	Dorra Lamouchi, Yacine Yaddaden, Raef Cherif and Amna Smaoui
12:10-12:30	177	Implementing Canny Edge Detection Algorithm for Different Blurred and Noisy Images	Touka Hafsia, Asma Belhaj, Hatem Tjijani and Khaled Nouri

Lunch	Time (12:30-14:30)

ROOM 1

Session 5: Energy Conversion Systems (ECS)

Chairs: Rafik NAJI & Naourez BENHADJ

Time	Paper ID	Paper Title	Authors
14:30-14:50	20	Study State of Fuel Cell Thermodynamics for electric vehicle application	Mohamed Rejeb, Youssef Dhieb and Moez Ghariani
14:50-15:10	145	Enhancing the Transient Performance of a DFIG_WT in case of HVRT using SMES	Fatma Bouaziz, Achraf Abdelkafi, Abdelkarim Masmoudi and Lotfi Krichen
15:10-15:30	149	An optimal power supervising strategy for a smart home assessed based on BPMN Framewor	Leila Lanouar, Mouna Rekik, Olfa Bouchaala and Lotfi Krichen
15:30-15:50	161	Study and analysis of power management of a Hybrid Solar Photovoltaic/Wind Power Systems	Lekhchine Salima, Bahi Tahar and Boukerche Ali
15:50-16:10	82	Experimental investigation of control strategie in a wind energy conversion system based on PMSG	Hedi Ben mahdhi, Ghozlani Houcin, Hechmi Ben Azza and Bilel Touaiti

ROOM 2

Session 6: Artificial Intelligence Based Control (AIBC)

Chairs: Abdellatif MTIBAA & Chokri BEN SALAH

Time	Paper ID	Paper Title	Authors
14:30-14:50	03	Analysis and implementation of wireless charger for electric vehicle	Mohamed Haikel Chehab, Makram Khelil and Chokri Ben Salah
14:50-15:10	31	An Efficient Kernel KNN classifier for Activity Recognition on Smartphone	M'Hamed Bilal Abidine and Belkacem Fergani
15:10-15:30	42	Detection of the breast cancer cells by a smart camera connected to a cellular Microscopy	Naji Guedri and Rached Gharbi
15:30-15:50	53	Algorithmic Optimization of Vehicle Detection System based on Hybrid Metaheuristic with Machine Learning	Sana Bougharriou, Fayçal Hamdaoui and Abdellatif Mtibaa
15:50-16:10	91	Deep Learning-Based Object Detection Approach for Autonomous Vehicles	Adnen Albouchi, Mohamed Ali Hajjaji and Abdellatif Mtibaa
16:10-16:30	32	Sensorless Intelligent System for Optimized PV Panels Cleaning Unit	Faris Alfaris

ROOM 3

Session 7: Modelling of Engineering Systems (MES)

Chairs: Omar NAIFAR & Tarak DAMAK

Time	Paper ID	Paper Title	Authors
14:30-14:50	35	Predictive Control of nonlinear systems based on PWARX model	Lassoued Zeineb and Kamel Abderrahim

Time		Paper Title	Authors
14:50-15:10	63	Mamdani fuzzy parameter estimation algorithm for large-scale interconnected nonlinear systems	Mourad Elloumi, Omar Naifar and Hamdi Gassara
15:10-15:30	72	Optimization Wireless Power Transfer Using Simulation Relevant Parameters	Ahmed Abougarair, Adel Emhemmed and Omran Salih
15:30-15:50	54	Stabilization of Inverted Pendulum System Using Adaptive Model Following Controllers	Abdelkader Maddi, Abderrezak Guessoum and Daoud Berkani
15:50-16:10	47	Comparative Assessment between PD and Fuzzy Control for a Novel Unmanned Aerial Vehicle Inspired by Owls	Rahma Boucetta, Paweł Romaniuk and Khalid Saeed
16:10-16:30	44	A Simulation-Based Analysis Study of Different Data Centers' Networks Employing MPLS technique as a Fault Tolerance Mechanism	Azeddien Sllame and Ahmed Samoud

ROOM 4

Session 8: TeleCommunication Engineering (TCE)			
Chairs: Amer ZEREK & Adel EMHEMMED			
Time	Paper ID	Paper Title	Authors
14:30-14:50	109	Reconfigurable Rectangular Ring Antenna Based on Graphene for Terahertz Applications	Hamza Ben Krid, Zied Houaneb and Hassen Zairi
14:50-15:10	12	Performance Analysis of BER for OSTBCMIMO System Concatenated with QPSK-TCM Over Different Wireless Channels	Sana Abdaljlil, Hosam Almqadim, Amer Zerek and Olga Boiprav
15:10-15:30	64	BER Performance Investigation of OSTBC-MIMO Systems Concatenated with QAM-TCM Over AWGN and Fading Channels	Sana Abdaljlil, Hosam Almqadim, Amer Zerek and Yousef Jaradat
15:30-15:50	40	Studying and Investigation of Energy Efficiency in massive MIMO Using MMSE, ZF and MRT Algorithms	Abdussalam Ammar, Amira Ellafi and Amer Zerek
15:50-16:10	79	Performance evaluation of IEEE 802.11n in WLAN	Bilal Saoud and Smail Medjedoub
16:10-16:30	49	Effectiveness of Non-Orthogonal Multiple Access as Multiplexing Technique	Mohamed Babana

Coffee Break   Time (16:30-16:50)

ROOM 1

Session 9: Control, Automation and Diagnosis (CAD)			
Chairs: Sofien HAJJI & Mourad ELLOUMI			
Time	Paper ID	Paper Title	Authors

Time	Paper ID	Paper Title	Authors
16:50-17:10	27	Robust stability analysis for uncertain neutral systems with time-delays	Nidhal Khorchani, Wiem Jebri, Rafika El Harabi and Hassen Dahman
17:10-17:30	69	An intelligent guided-airborne virus detection	Ahmed Hadded, Ben Ayed Mossaad and Shaya Alshaya
17:30-17:50	76	V2X Communication Based System Development: Application on Intersection Assist with Co-Simulation	Sarp Kaya, Yetkin Mert Eren, Namık Zengin, Ender Ayhan Renc̈uzoˇgulları, Mert Tomruk and Hakan Yılmaz
17:50-18:10	80	A Digital Twin Study: Particle Swarm Optimization of ACC Controller for Follow Acceleration Maneuver	Batuhan Durukal, Batuhan Günaydın, Serdar Kınay, Bekir Öztürk, Namık Zengin and Sarp Kaya Yetkin
18:10-18:30	51	Analysis of Wound Rotor Induction Motors Operation under Unbalanced Supply	Djilali Kouchih and Redouane Hachelaf

ROOM 2

Session 10: Electrical Power System (EPS)			
Chairs: Hafedh ABID & Lotfi KRICHEN			
Time	Paper ID	Paper Title	Authors
16:50-17:10	77	Optimal Distribution Network Reconfiguration Using Ant Lion Optimizer	Haifa Souifi and Hsan Hadj Abdallah
17:10-17:30	181	Design and Performance Analysis of a Portable Solar PV Power Supply	Mounir Bouzguenda, Abduallatif A.Al-Omair and Abdurhman A. Al-Yamani
17:30-17:50	186	Comprehensive solutions to Dispatch and Control Renewables within the Saudi Electric Network	Abdurhman A. Al-Yamani, Mounir Bouzguenda, Mohammed A. Alaqil and Abduallatif A Al-Omair
17:50-18:10	170	Overview of Matrix Converter: Topologies and Modulation	Lazhar Rmili, Sana Ktata, Salem Rahmani and Kamal Al-Haddad
18:10-18:30	16	FEM and New Diffusive Representation Technique application for DSIM thermal transition analysis	Thouraya Guenenna and Adel Khedher

ROOM 3

Session 11: Nonlinear Controls and Applications (NCA)			
Chairs: Ahmed SAID NOURI & Mariem GHAMGUI			
Time	Paper ID	Paper Title	Authors
16:50-17:10	22	Gradient Boosting Regression Trees for Nonlinear Delay Identification in a Polymer Extrusion Process	Raphael Hartner, Martin Kozek, Stefan Jakubek and Barbara Mayer
17:10-17:30	38	A indirect adaptive neural control based on VLRs of nonlinear MIMO systems	Rabab Hamza, Yassin Farhat and Ali Zribi
17:30-17:50	48	Finite-time Second-order sliding mode control for master-slave manipulator with time delays	Neila Mezghani Ben Romdhane, Mohamed Boukattaya and Tarak Damak

Time	Paper ID	Paper Title	Authors
17:50-18:10	124	Modeling and Control Design of an Activated Sludge Process: a Multi-Model Approach	Saida Dhouibi and Soufiène Bouallegue
18:10-18:30	164	Adaptive global sliding mode control for multilateral teleportation systems with varying-time delay	Asma Ounissi, Neila Mezghani Ben Romdhane and Mohamed Boukattaya

ROOM 4

Session 12: Renewable Energy and Smart Grids (RESG)			
Chairs: Moez ALLOUCHE & Monia BOUZID			
Time	**Paper ID**	**Paper Title**	**Authors**
16:50-17:10	46	Enhanced dqPLL Architecture based on THD Compensation Blocs used in Three- Phase Smart Grid Synchronization	Khalil Gassara, Santiago De Pablo Gómez, Bilel Gassara and Ahmed Fakhfakh
17:10-17:30	52	Limits the Time Relay Coordination of Photovoltaic Power System using ETAP	Mohammed Jawad, Anis Mhalla and Nadheer A Shalash
17:30-17:50	57	An Observer-Based Inductor Current Control for a Bifunctional Three-Phase DG-Inverter	Ali Aillane, Tarak Damak, Karim Dahech, Aissa Chouder, Abdelhak Hadjkaddour and Abdelhafid Cherifi
17:50-18:10	66	Auxiliary PV power supply for commercial buses: A state-of-the-art review and research opportunities for Tunisia case study	Jihed Chaabani and Helmi Aloui
18:10-18:30	105	Sliding Mode Control In A Wind Turbine System	Atef Jemmali, Khaled Elleuch, Hafedh Abid and Ahmed Toumi

Second Day

Tuesday, December 20, 2022

ROOM 1

Plenary Session SP2	Time (08:30 -9:30)

Chairmen's: Tarek DAMAK & Karim DAHECH

Prof. Aissa CHOUDER. AC and DC microgrids: Concepts, Architectures and Control Challenges

ROOM 1

Plenary Session SP3	Time (09:30 -10:30)

Chairmen's: Driss MEHDI & Hafedh ABID

Prof. Ahmed RUBAAI. Hierarchical Control of Interconnected Power Systems: A Two-Level Supervisory Controller for Transient Stability Crisis

Coffee Break	Time (10:30-10:50)

ROOM 1

Session 13: Fault Tolerant Control Systems (FTCS)			
Chairs: Mohamed CHAABANE & Anis MESSAOUD			
Time	**Paper ID**	**Paper Title**	**Authors**
10:50-11:10	6	Bond Graph Modeling Impact on System's Supervision Precision	Siwar Bellahirich, Dhafer Mezghani and Abdelkader Mami
11:10-11:30	9	Actuator Fault Reconstruction for a Class of OSL Nonlinear Systems	Omar Naifar, Hamdi Gassara, Mourad Elloumi and Assaad Jmal
11:30-11:50	104	Attitude control of a drone subject to disturbance and structural fault	Hajer Mlayeh and Kamel Ben Othman
11:50-12:10	125	Fault detection in wheeled mobile robot based on extended kalman filter	Afrah Jouili, Boumedyen Boussaid, Ahmed Zouinkhi and Mohamed Naceur Abdelkrim
12:10-12:30	130	Fault detection and diagnosis system for power multicell converter using MLP Neural Networks based on sliding mode observer	Meradi Samir, Bouslimani Samir, Benmansour Khelifa, Souad Laribi, Tadjine Mohamed and Boucherit Mohamed Seghir

ROOM 2

Session 14: Circuits, Electronics & Microelectronics (CEM)			
Chairs: Mohamed MASMOUDI & Abdennaceur KACHOURI			
Time	**Paper ID**	**Paper Title**	**Authors**
10:50-11:10	92	Combining DNA encoding and chaos for Medical image encryption	Rim Amdouni, Mohamed Gafsi, Mohamed Ali Hajjaji and Abdellatif Mtibaa
11:10-11:30	93	FPGA implementation of a chaos-Towfish-based cryptosystem for medical image security	Rim Amdouni, Mohamed Gafsi, Mohamed Ali Hajjaji and Abdellatif Mtibaa

Time	Paper ID	Paper Title	Authors
11:30-11:50	18	Design Validation of Compact UWB Bandpass Filter using Stepped-Impedance Stub and DGS Techniques	Mouloud Challal, Abdelhamid Skoudarli and Mohamed Abdelbasset Aliouane
11:50-12:10	33	Impact of RF Sputtering Power on the Structural and Electrical Properties of Amorphous AZO Thin-Films	Hichem Ferhati, K. Kacha, A. Bendjerad, F Djeffal and A. Benhaya
12:10-12:30	7	Charcoal- and Foil-Containing Materials for Radio Electronic Control Systems Protection from Electromagnetic Interferences	Olga Boiprav, Hisham Ayad, Sana Abdaljlil, Leonid Lynkou and Moudah Abdulmawlay

ROOM 3

Session 15: Signal and Image Processing (SIP)			
Chairs: Nouri MASMOUDI & Hedi AMRI			
Time	Paper ID	Paper Title	Authors
10:50-11:10	28	Machine learning based CAD system	Syrine Neffati and Mohsen Machhout
11:10-11:30	98	System for Coronavirus classification based on new a new textural descriptor	Fathia Boubakri, Norhene Gargouri and Alima Damak Masmoudi
11:30-11:50	131	Modified U-Net Architecture based Ischemic Stroke Lesions Segmentation	Nabil Abdmouleh, Amira Echtioui, Fathi Kallel and Ahmed Ben Hamida
11:50-12:10	180	Comparative Analysis to Identify Efficient Method for SSVEP based BCI	Hibatallah Akermi, Omar Trigui and Mohamed Ghorbel
12:10-12:30	99	A Novel CPKM-DLNN Based Deepfake Detection Using EP-SURF and PSKF Techniques	Anesa Al-Najeh and Sana Abouljam

ROOM 4

Session 16: Electrical Power System (EPS)			
Chairs: Mansour SOUISSI & Said DRID			
Time	Paper ID	Paper Title	Authors
10:50-11:10	21	Analysis of microgrid with wind-turbine and batteries optimized for load shedding in Tunisia	Gaith Baccouche, Abdelaziz Salah Saidi, Ruben Zieba Falama and Chokri Ben Salah
11:10-11:30	23	Sizing and economic analysis of a grid-connected photovoltaic system for a residential load of three Tunisian cities	Gaith Baccouche and Chokri Ben Salah
11:30-11:50	41	Off-grid house energy management system powered by photovoltaic energy	Samir Arfa, Mohsen Ben Ammar, Mohamed Ali Zdiri and Hsan Hadj Abdallah
11:50-12:10	132	Voltage Sensorless Sliding Mode Control for Stand Alone Five Level Packed U-Cell Inverter	Boutheyna Hadmer, Said Drid, Abdellah Abdellah Kouzou, Farouk Mechnane, Larbi Chrifi-Alaoui and Mohamed Dhiaeddine Drid
12:10-12:30	115	Performance Comparison of Two Structures of Electric Vehicle Permanent Magnet Machines	Hela Kolsi, Naourez Benhadj, Dorra Abdeljelil, Manel Krichen, Chaieb Mohamed and Rafik Neji

ROOM 1

Session 17: Control of Electrical Vehicles (CEV)

Chairs: Yassine KOUBAA & Youssef AGREBI

Time	Paper ID	Paper Title	Authors
14:30-14:50	106	Investigation of the combined static eccentricity and Partial demagnetization faults in PMSM	Manel Krichen, Naila Ben Halima, Dorra Abdeljalil, Naourez Ben Hadj and Rafik Neji
14:50-15:10	117	Energy Management of Electrical Vehicle Charging Station Based on Photovoltaic System	Nahla Ben Halima, Hela Kolsi, Naila Ben Halima and Abdelmajid Oualha
15:10-15:30	122	Permanent magnet synchronous motor performance study dedicated to parallel hybrid electric vehicle	Naila Ben Halima, Naourez Ben Hadj, Manel Krichen and Rafik Neji
15:30-15:50	151	Improving the quality of the power supply during the period of covid-19 using plug-in electric vehicles and artificial intelligence	Kouame Emmanuel Kouakou, Mouna Rekik and Lotfi Krichen
15:50-16:10	197	Formal Model for Control of Autonomous Navigation	Hela Kadri, Riheb Cherif, Abdel Aitouche and Rochdi Merzouki

ROOM 2

Session 18: Artificial Intelligence Based Control (AIBC)

Chairs: Ahmed TOUMI & Ahmed RUBAAI

Time	Paper ID	Paper Title	Authors
14:30-14:50	70	Fuzzy- PI Controller design for maximum power tracking of wind turbine	Yosra Sayahi, Moez Allouche and Maher Kharrat
14:50-15:10	126	Dual Fuzzy Logic Controllers for Omnidirectional Robot Navigation and Obstacle Avoidance	Sana Hanana, Najla Krichen and Mohamed Slim Masmoudi
15:10-15:30	143	An Efficient Battery-Charging Algorithm with ANN based MPPT Method for Off-Grid PV Systems	Yacine Triki, Ahcene Triki, Ali Bechouche, Djaffar Ould Abdeslam and Radu Porumb
15:30-15:50	108	An Alternative Stabilization Approach for Delayed Takagi Sugeno Discrete Fuzzy Systems	Meroua Hamadou and Khaled Belarbi
15:50-16:10	128	Intelligent Energy Management for a Building DC Nanogrid	Youssouf Amrane and Kouba Nour El Yakine
16:10-16:30	157	Improving the faults diagnosis of power transformer using Fuzzy Rule and Decision tree based on Dissolved Gas Analysis (Rogers and IEC Methods)	Abdelmoumene Hechifa, Abdelaziz Lakehal, Ridha Kelaiaia and Mohammed El Amine Senoussaoui

ROOM 3

Session 19: Energy Management Systems (EMS)

Chairs: Ahmed FAKHFAKH & Omar NAIFAR

Time	Paper ID	Paper Title	Authors
14:30-14:50	152	Prosumer and Small-Scale Prosumer Energy management system	Marwa Ben Arab, Mouna Rekik and Lotfi Krichen
14:50-15:10	13	A comparison of optimal sizing methods for Microgrid applications and description of a proposed iterative algorithm	Sihem Amara, Sana Toumi and Chokri Ben Salah
15:10-15:30	19	Impact of Autonomy days in Microgrid Sizing	Sihem Amara and Chokri Ben Salah
15:30-15:50	60	Energy Management Strategy for Parallel Hybrid Electric Vehicle	Mariem Boujneh, Nesrine Majdoub, Taoufik Ladhari and Sakly Anis
15:50-16:10	118	Simulation of Highly Sensitive, Ultra-Low Power and Energy-Autonomous Wake-Up Receiver for Improving Wireless Sensor Network Performances	Ilef Ketata, Mohamed Khalil Baazaoui, Ahmed Fakhfakh and Faouzi Derbel
16:10-16:30	71	Comparison of Decomposition Techniques in Forecasting the Quarterly Numbers of Pole-Mounted Transformer Failures	Nhlanhla Mbuli and Jan-Harm C. Pretorius

ROOM 4

Session 20: Renewable Energy and Smart Grids (RESG)

Chairs: Mansour SOUISSI & Sofien HAJJI

Time	Paper ID	Paper Title	Authors
14:30-14:50	107	MPPT of a PV panel based on fuzzy logic and sliding mode controller	Taleb Hamdi, Khaled Elleuche, Hafedh Abid and Ahmed Toumi
14:50-15:10	133	Modeling and Control of a Three-Phase DC-AC Inverter in Grid-connected PV Systems under Unbalanced Conditions	Samia Dziri, Mohammed Mazen Alhato, Soufiene Bouallègue and Patrick Siarry
15:10-15:30	147	Sizing Photovoltaic/Battery/EV systems for a stand-alone city at Tunisia	Roua Toujani, Achraf Abdelkafi and Lotfi Krichen
15:30-15:50	148	Using an FCL for the Improvement of the DFIG_WT LVRT Capability	Fatma Bouaziz, Achraf Abdelkafi, Abdelkarim Masmoudi and Lotfi Krichen
15:50-16:10	150	Designing a hybrid system using solar cells and batteries to power a clinic in Tajarhi desert village in the Libya-Niger border off-grid	Omar Mayouf, Mouna Rekik and Lotfi Krichen
16:10-16:30	168	Small-Signal Modeling and Voltage PID controller- Synthesis for Cascade Regulation of Renewable Energy Conversion System	Aissani Siham, Bechouat Mohcene, Menasria Azzeddine, Amieur Toufik Moussa, Sedraoui and Hakim Doghmane

Coffee Break   Time (16:30-16:50)

ROOM 1

Session 21: Signal and Image Processing (SIP)

Chairs: Mounir SAMET & Nessine ELLOUMI

Time	Paper ID	Paper Title	Authors
16:50-17:10	84	Design of Quantum/Reversible Ternary Adder Circuit	Chteoui Henchir, Lamjed Touil and Abdellatif Mtibaa
17:10-17:30	162	Improved face recognition under varying illumination conditions using webface-based local descriptors	Boualleg Abdelhalim, Doghmane Hakim, Deriche Mohamed, Bourouba Houcine, Sedraoui Moussa and Menasria Azzeddine
17:30-17:50	190	Single Sample Face Recognition: A Comparative Study between Texture and Deep-Learning-based Features	Insaf Adjabi and Amir Benzaoui
17:50-18:10	191	Identity Recognition based on Palmprints: A Preliminary Results	Nadia Amrouni, Amir Benzaoui and Insaf Adjabi
18:10-18:30	78	A New Encryption Approach for Color Image Using 3D Fractional Order Chaotic System	Ismail Haddad, Djamel Herbadji, Belmeguenai Aissa and Boumerdassi Selma

ROOM 2

Session 22: Electrical Power System (EPS)

Chairs: Larbi CHRIFI-ALAOUI & Said DRID

Time	Paper ID	Paper Title	Authors
16:50-17:10	154	MPPT Optimization using Ant Colony Algorithm: Solar PV applications	Youssef Dhieb, Mohamed Yaich, Mounir Bouzguenda and Moez Ghariani
17:10-17:30	134	SPWM and Third Harmonique Injection Techniques for 7-Level Packed U-Cell Inverter	Boutheyna Hadmer, Said Drid, Abdellah Kouzou, Farouk Mechnane, Larbi Chrifi-Alaoui and Mohamed Dhiaeddine Drid
17:30-17:50	136	Fuzzy-type-2 maximum power tracking controller of the double fed wind generator	Mouna Kaddache, Said Drid, Abderrahman Khemis, Djamel Rahem, Larbi Chrifi-Alaoui and Mohamed Dhiaeddine Drid
17:50-18:10	160	Overview of Multi-sources Microgrid Topologies and Design Aspects	Mohamed-Dhiaeddine Drid, Samir Hamdani and Amirouche Nait-Seghir
18:10-18:30	94	Harmonics compensation in the electrical network using photovoltaic generator	Abdallah Faleh and Ammar Medoued

ROOM 3

Session 23: TeleCommunication Engineering (TCE)

Chairs: Abdellatif MTIBAA & Lotfi KAMOUN

Time	Paper ID	Paper Title	Authors

Time	Paper ID	Paper Title	Authors
16:50-17:10	97	Link Performance Analysis for GFDM Wireless Systems	Amina Darghouthi, Abdelhakim Khlifi, Taoufik Benhmad and Belgacem Chibani
17:10-17:30	138	Designing Torus and HyperCube Network-on-Chip Systems Based-on MPLS Networking Technique	Azeddien Sllame and Malak Daddsh
17:30-17:50	142	300 Gb/s WDM-PON Downstream Model Performance Optimization for Co-Exist Approach	Mohammed Hamdan, Abdulhameed Almabrok Swedan and Bhseer Elgamodi
17:50-18:10	127	Performance Analysis of Downlink Non-Orthogonal Multiple Access Network with Harvesting Energy under Fading Rayleigh Distribution	Mounir Belattar, Chaabane Soumali and Mabrouk Atrouche

ROOM 4

Session 24: Online			
Chairs: Amer ZEREK & Maher KHARRAT			
Time	**Paper ID**	**Paper Title**	**Authors**
16:50-17:10	01	Wheeled Mobile Robot Path Planning and Path Tracking in a static environment using TLBO AND PID-TLBO control	Youcef Zennir and Mourad Achouri
17:10-17:30	02	Fuzzy Adaptive Sliding Mode Controller: applied to inverted pendulum	Youcef Zennir and Mourad Achouri
17:30-17:50	88	Fault Detection and Location for VSC-HVDC Systems with the Coexistence of AC and DC Faults by Using PSO-Neural Network	Raad Jawad and Hafedh Abid
17:50-18:10	83	Robustness analysis of a satellite attitude with feedback linearization and sliding mode control	Wafa Mezzi and Balin Kiss
18:10-18:30	58	Automatic Detection of Melanoma Skin Cancer from Dermoscopy Images based on Features Fusion	Lobna Abd Alaziz and Ahmed Lawgali
18:30-18:50	59	New Finite-Time Stability Criterion for Piecewise Linear Systems through a Finsler's Lemma Approach	Benkhaled Sana, Cédric Delattre, Bessem Bhiri, Zasadzinski Michel and Abderrahim Kamel

Third Day

Wednesday, December 21, 2022

ROOM 1

Chairmen's: Moez ALLOUCHE & Neila MEZGHANNI

Prof. Abdelkader SELLAMI. Modeling and control of a manipulator arm (CAPAX-4R)

ROOM 2

Session 25: Circuits, Electronics & Microelectronics (CEM)			
Chairs: Mohamed MASMOUDI & Abdennaceur KACHOURI			
Time	**Paper ID**	**Paper Title**	**Authors**
08:30-08:50	135	Improvement in isolation between MIMO antennas using MTM stop-band cells in the mm-Wave band	Linda Chouikhi, Chaker Essid, Hedi Sakli and Bassem Ben Salah
08:50-09:10	110	Rectifier Circuit at 3.5 GHz for 5G Applications	Mounira Ben Yamna, Nabil Dakhli and Hedi Sakli
09:10-09:30	185	Resonance Identification and Attenuation for EMC Study in AC-HERIC Topology	Sana Kraiem, Jaleleddine Ben Hadj Slama and Mahmoud Hamouda
09:30-09:50	155	Optical filters defected by magnetized cold plasma	Chouaib Chettah, Khaled Chettah and Ouarda Barkat
09:50-10:10	196	MEMS Inertial Measurement Unit Calibration Using Low Cost Hardware	Abdulbaset Eljubrani, Othman Maklouf and Aseel A.Mgig

ROOM 3

Session 26: Control, Automation and Diagnosis (CAD)			
Chairs: Anis MESSAOUD & Chokri REKIK			
Time	**Paper ID**	**Paper Title**	**Authors**
08:30-08:50	81	Interval Estimation for Discrete-Time Linear Systems: Tracking Control Strategy	Oumayma Abderrahim, Salama Makni and Anis Messaoud
08:50-09:10	86	Discrete modes faults diagnosis for hybrid dynamical systems using Petri nets	Fayssal Arichi, Brahim Cherki, Mohamed Djemai and Seref Naci Engin
09:10-09:30	100	Robust Static Output Feedback Control with Input Constraints for fuzzy systems: Descriptor Approach	Amel Ferjani, Maher Kharrat, Mariem Ghamgui and Mohamed Chaabane
09:30-09:50	114	Functional Interval-Observer-Based Fault Detection for Continuous-time Multivariable Linear Systems	Hanin Mizouri, Rihab Lamouchi and Messaoud Amairi
09:50-10:10	120	Improvement of the vibration analysis technique by optimizing the parameters of the piezoelectric accelerometer	Zine Ghemari, Salah Belkhiri and Mohamed Gazi Morakchi
10:10-10:30	141	Distributed geometric control of infinite dimensional systems described by the Korteweg-de Vries-Burgers equation	Ahcene Triki, Ahmed Maidi and Tean-Pierre Corriou

ROOM 4

		Session 27: Electrical Power System (EPS)	
Chairs: Ahmed TOUMI & Mourad ELLOUMI			
Time	**Paper ID**	**Paper Title**	**Authors**
08:30-08:50	24	Study of a PV/Battery System for Hydrogen production and storage	Mahmoud El Amri and Chokri Ben Salah
08:50-09:10	25	Study of Hydrogen production and storage PV system	Mahmoud El Amri, Ruben Zieba Falama, Abdelaziz Salah Saidi and Chokri Ben Salah
09:10-09:30	199	Application of PSO in the Design of Permanent Magnet Synchronous Generator for 1.5MW wind turbine	Dorra Abdeljalil, Naourez Benhadj, Hela Kolsi, Manel Krichen and Rafik Neji
09:30-09:50	179	Stator fault detection of the PMSG under the sliding mode control in wind energy conversion system	Samir Bouslimani, Larbi Chrifi-Alaoui, Said Drid, Laurant Delahoche and Pascal Bussy
09:50-10:10	188	PV Plant Integration Effect on Industrial Control Applied on DTC-SVM of PMSMG	Bourourou Fares, Tadjer Sid Ahmed and Idir Habi
10:10-10:30	198	Solar power plant data analysis and prediction using different techniques of machine learning	Marwa Ben Arab, Mouna Rekik and Lotfi Krichen

Coffee Break	**Time (10:30-10:50)**

ROOM 1

Workshop 1 P2	**Time (10:50 -12:10)**

Chairmen's: Moez ALLOUCHE & Neila MEZGHANNI

Prof. Abdelkader SELLAMI. Modeling and control of a manipulator arm (CAPAX-4R)

ROOM 2

Workshop 2	**Time (10:50 -12:10)**

Chairmen's: Abdelouaheb AITOUCHE & Mohamed CHAABANE

Prof. TOURNAKIS Alexandre. European projects: keys of success, learnings and examples

ROOM 3

		Session 28: IoT Networks & Industry 4.0 (IoTNI)	
Chairs: Slim Masmoudi & Adel EMHEMMED			
Time	**Paper ID**	**Paper Title**	**Authors**

Time	Paper ID	Paper Title	Authors
10:50-11:10	146	Smart home power monitoring based on Internet of Things paradigm	Siwar Khemakhem, Mouna Rekik and Lotfi Krichen
11:10-11:30	11	Internet of Things Security: Requirements, Attacks on SH-IoT platform	Mona El. Zuway and Hend Farkash
11:30-11:50	200	Energy efficiency approaches in Wireless Sensor Networks	Muteeah Aljawarneh, Rim Hamdaoui, Ahmed Zouinkhi, Boumedyen Boussaid and Mohamed Naceur Abdelkrim

ROOM 4

Session 29: Networks and Electrical Machines (NEM)

Chairs: **Yassine KOUBAA & Tarek MAATOUG**

Time	Paper ID	Paper Title	Authors
10:50-11:10	192	Optimized passivity-based control of Series Hybrid Fuel Cell Source	Said Bedda, Ilyes Tegani, Messaoud Mohammedi and Okba Kraa
11:10-11:30	144	Efficiency Optimization of Induction Motor Using a Modified Gray Wolf Optimization	Oussama Zeghba, Salim Chakroun and Ali Aillane
11:30-11:50	165	Design and Optimization of the Impact of the Polar arc Offset Geometry on Permanent Magnets of BLDC motors Performances	Moussa Khelifa, Ammar Medoued and Abdallah Faleh
11:50-12:10	45	Performance Investigation of Three-Stage Modular Smart Transformer with Sliding Mode Control	Hiba Helali and Adel Khedher

Closing Ceremony   Time (12:10-13:00)

Lunch   Time (13:00-14:30)

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Happy new year

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