

# **2023 IEEE 11th International Conference on Systems and Control (ICSC 2023)**

**Sousse, Tunisia  
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**Pages 1-486**



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## Technical Program for Monday December 18, 2023

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Alshalman, Mousa.	AI & computer System
Gargoum, Bothaina	University of Benghazi
Nagem, Tarek	University of Benghazi
Kenz, Bozed	University of Benghazi
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Mohsen, Machhout	Electronics and Micro-Electronic Laboratory (LEME), University O
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Albagul, Abdulgani	Libyan Centre for Engineering Research and Information Technolog
Moamer, Ahmad	Baniwalid University
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Mohsen, Machhout	Electronics and Micro-Electronic Laboratory (LEME), University O
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Kenz, Bozed	University of Benghazi
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Eldrogi, Nawal	University of Derna
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Mohammed, Asmaa	College of Electronic Technology - Bani Walid
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Nazlibilek, Sedat	Baskent University
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Ait Ziane, Meziane	FEMTO-ST & ENERGY-Lab,
Hugues, Rafaralahy	Lorraine University
Zasadzinski, Michel	Université De Lorraine, CRAN, CNRS UMR 7039
Join, Cédric	Nancy University
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Medhaffar, Hanene	ENIS-Sfax
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Kraiem, Youssef	Junia
Abbes, Dhaker	Junia High Engineering School of Lille (Junia-HEI-Lille)
Aitouche, Abdel	CRISTAL/JUNIA
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Graine, Aghyles	Universite De Poitiers, SRD, Poitiers, France
Karnib, Nour	Ensm Chasseneuil Du Poitou, France
Gaubert, Jean-Paul	Univerty of Poitiers
Bertout, Antoine	Universite De Poitiers, Poitiers, France
Grolleau, Emmanuel	Laboratoire d'Informatique Et d'Automatique Pour Les Systèmes (L
Larraillet, Didier	SRD, Poitiers, France
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Maghrebi, Mohamed	ENSIT
Ben Azza, Hechmi	ENSIT
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Ngada, Haran Nathan	National Engineering School of Sfax(ENIS)
Ben Ammar, Mohsen	National Engineering School of Sfax(ENIS)
Zdiri, Mohamed Ali	National Engineering School of Sfax(ENIS)
Djemel, Mohamed	National Engineering School of Sfax(ENIS)
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Chair: Chaabane, Mohamed	National Engineering School of Sfax, Tunisia
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Pigeon, Eric	LAC
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Leko, Dorijan	University of Zagreb, Faculty of Electrical Engineering and Comp
Rukavina, Filip	University of Zagreb Faculty of Electrical Engineering and Compu
Matijašić, Matija	Rimac Technology D.o.o
Bralić, Ivan	Rimac Technology D.o.o
Vasak, Mario	University of Zagreb Faculty of Electrical Engineering and Compu
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Malli, Ioanna	National Technical University of Athens
Vlachos, Christos	Department of Electrical and Computer Engineering, University Of

Bechlioulis, Charalampos Kyriakopoulos, Kostas J.	University of Patras National Tech. Univ. of Athens
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Yurchenkov, Alexander Kustov, Arkadiy	V.A. Trapeznikov Institute of Control Sciences of Russian Academ Institute of Control Sciences
Å	
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Chair: Zerek, Amer Co-Chair: Naifar, Omar	Aziwa University University of Sfax, National School of Engineering, Control and Energy Management Laboratory (CEM Lab), Department of Electric
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Almejrab, Rafea Sallabi, Omar Fawzi Faragg Bushaala, Bushaala Mohamed, Abdelhafid Ali Altajori, Abdelgader Bubaker	College of Computer Technology, Benghazi, Libya Benghazi University College of Computer Technology, Benghazi, College of Computer Technology, Benghazi, College of Computer Technology, Benghazi,
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Bouchemal, Nardjes Djaaboub, Salim	Abdelhafid Boussouf University Center of Mila Abdelhafid Boussouf University Center of Mila
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Baraeen, Abdullah Kassas, Mahmoud Bawazir, Ahmed	Department of Electrical Engineering, College of Engineering And Interdisciplinary Research Center for Renewable Energy and Power Interdisciplinary Research Center for Communication Systems And

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Chair: Farza, Mondher	Universite De Caen, Ensicaen, Cnrs
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Zetina Rios, Israel Isaac Alma, Marouane Osorio-Gordillo, Gloria-Lilia Darouach, Mohamed Astorga-Zaragoza, Carlos	Tecnológico Nacional De México/CENIDET CRAN, Université De Lorraine Centro Nacional De Investigación Y Desarrollo Tecnológico CRAN CNRS UMR 7039, Université De Lorraine Tecnológico Nacional De México - Cenedet
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Han, Xue Farza, Mondher M'saad, Mohammed Dahhou, Boutaieb	ENSICAEN Universite De Caen, Ensicaen, Cnrs ENSICAEN LAAS-CNRS
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Ramírez-Rasgado, Felipe Farza, Mondher Hernandez Gonzalez, Omar M'saad, Mohammed Astorga-Zaragoza, Carlos	Tecnológico Nacional De México - Cenedet Universite De Caen, Ensicaen, Cnrs TECNM ENSICAEN Tecnológico Nacional De México - Cenedet
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Jmel, Ines Dimassi, Habib Hadj Said, Salim Farza, Mondher	National Engineering School of Monastir Namur Center for Complex Systems (NAXYS) School of Engineering of Monastir (ENIM) Universite De Caen, Ensicaen, Cnrs

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Fatma, Bouaziz	ENIS

Abdelkarim, Masmoudi	ENIS
Achraf, Abdelkafi	ENIS
Lotfi, Krichen	ENIS
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Mouna, Rekik	ENIS
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Omoora, Eliana	Benghazi University
Hajer, Al_taweil	Benghazi University
Nagem, Tarek	University of Benghazi
Kenz, Bozed	University of Benghazi
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Triban, Saad	Libyan Academy of Benghazi
Lawgali, Ahmed	Benghazi University

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Ament, Christoph	Universitaet Augsburg
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Delattre, Cédric	Université De Lorraine
Zasadzinski, Michel	Université De Lorraine, CRAN, CNRS UMR 7039
Kamel, Abderrahim	National School of Engineers of Gabes

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<b>MoCD</b>	Room 4
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Chair: Messaoud, Anis	National School of Engineering of Gabes, Tunisia
Co-Chair: Triki, Moncef	ENETCOM
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Bhatt, Pramath  
Patil, Khushali  
Ghosh Roy, Abhishek  
Roy, Anirban

IIT Kanpur  
Defence Institute of Advanced Technology, Pune  
Defence Institute of Advanced Technology, Pune  
Tata Aerospace and Defence Pvt. Ltd  
TATA Aerospace and Defense Pvt. Ltd

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Khadija-Ikram, Mahider  
Ferfra, Mohammed  
Rabeh, Reda

RTEEC Team, Ecole Mohammadia d'Ingenieurs (EMI), Mohammed V Univ  
University Mohammed V  
International University of Rabat

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**MoDA**

Room 1

**Image Processing II** (Regular Session)

Chair: Kallel, Fathi

Sfax University

16:45-17:05

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Hamid, Mabroukah Mohammed  
Hammad, Fatimah Fathi  
Hmad, Nadia

Department of Software Engineering and Development College of Co  
Department of Software Engineering and Development College of Co  
College of Sciences and Natural Resources Aljafara University

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Nouira, Ibtihel  
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Selmi, Ahmed  
Bedoui, Mohamed Hédi

Private Polytechnic School of Monastir/Technology and Medical Im  
Technology and Medical Imaging Laboratory1 /Faculty of Sciences  
Private Polytechnic School of Monastir  
Technology and Medical Imaging Laboratory

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Elkawafi, Salma Mohamed Mohamed  
Abubakr, Hussameldin

University of Benghazi  
University of Benghazi  
University of Benghazi  
University of Benghazi  
University of Benghazi

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Mentouri, Zoheir  
Boualleg, Abdelhalim  
Bourouba, Hocine  
Sedraoui, Moussa

PIMIS Laboratory, Université 8 Mai 1945 Guelma Algérie  
University Souk Ahras  
Research Centre in Industrial Technologies (CRTI)  
LAIG Laboratory, Université 8 Mai 1945 Guelma, Algérie  
University 08 Mai 1945 Guelma  
University of Guelma

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BENDJOURI, Salim, Salim  
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Mentouri, Zoheir  
Bourouba, Hocine

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University 08 Mai 1945 Guelma

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**MoDB**

Room 2

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16:45-17:05

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Bhiri, Bassem

LTDS UMR 5513 CNRS Universit{e} De Lyon,



Delattre, Cédric Zasadzinski, Michel Kamel, Abderrahim	ENISE/CONPRI-Universi Université De Lorraine Université De Lorraine, CRAN, CNRS UMR 7039 National School of Engineers of Gabes
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Amarif, Mabroukah Alfitouri, Aisha Allag, Zaydan	Sebha University of Libya Sebha University Sebha University
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Salem, Atia Hashem, Gamal Abdalla, Ayad A Elabeedy, Esam	University of Benghazi University of Benghazi University of Benghazi University of Benghazi
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Okaf, Abdanaser Ahteewish, Fathi Jernaz, Mohamed	Higher Institute of Science and Technology, Nalut Zintan University Nalut University
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Alkhazmi, Esmaeil Elkawafi, Salma Mohamed Mohamed AlDarrar, Assem Abdulhakeem, Mohammed Abubakr, Hussameldin Shamatah, Hana	University of Benghazi University of Benghazi University of Benghazi University of Benghazi University of Benghazi University of Benghazi
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Awlad Busaif, Mohamed Nouh, Aiman	Department of Electrical and Electronic Engineering, University Department of Electrical and Electronic Engineering, University
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Alkar, Khaled M. Khanan, Maulod Issaa, Mohammed	Higher Institute of Science and Technology Subratha Higher Institute of Science and Technology Subratha-Libya Maintenance and Operation Mellitah Oil & Gas B.V. Libyan Branch
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Kermia, Mohamed Hamza Aiwansedo, Konstandinos Djadane, Oussama Bosche, Jerome Abbes, Dhaker	University of Picardie Jules Verne University of Picardie Jules Verne MIS Lab University of Picardie Jules Verne of Amiens Junia High Engineering School of Lille (Junia-HEI-Lille)
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El-Saeiti, Intesar Ben-Farag, Suaad	Benghazi Benghazi
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MoDD		Room 4
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Chair: Drid, Said	Higher National School of Renewable Energy, Environment and Sustainable Development	
Co-Chair: Allouche, Moez	Engineering School of Sfax, Tunisia	
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Mars, Abdelkarim		FSM
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Swibki, Taheni	Research Laboratory Smart Electricity & ICT, SEICT, LR18ES44 Nat	
Ben Salem, Ines	Research Laboratory Smart Electricity & ICT, SEICT, LR18ES44 Nat	
Kraiem, Youssef		Junia
El Amraoui, Lilia	Research Laboratory Smart Electricity & ICT, SEICT, LR18ES44 Nat	
Abbes, Dhaker		Junia High Engineering School of Lille (Junia-HEI-Lille)
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Ben Arab, Marwa		ENIS
Mouna, Rekik		ENIS
Lotfi, Krichen		ENIS
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Abdulrahman, Alzarouq		ENIS
Ben Arab, Marwa		ENIS
Mouna, Rekik		ENIS
Lotfi, Krichen		ENIS
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Triantafyllou, Ioannis		University of West Attica

**Technical Program for Tuesday December 19, 2023**

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Co-Chair: Dahech, Karim	Lab-STA, National School of Engineers of Sfax
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Salem, Fatma	Tobruk University
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<i>Small Signal Stability Analysis of Multi-Machine Power System Using Genetic Algorithm Technique</i> , pp. 396-402.	
Triki, Moncef	ENETCOM
Dhouib, Bilel	Sfax Engineering National School, Institut International De Tech
Hajji, Sofien	ENETCOM
Hadj Abdallah, Hsan	ENIS
09:55-10:15	TuAA.3
<i>Examining the Effects of STATCOM and MBPSS on the Integration of High-Level Wind Power into the Power Grid under Fault Conditions</i> , pp. 403-409.	
Dhouib, Bilel	Sfax Engineering National School, Institut International De Tech
Triki, Moncef	ENETCOM
Zdiri, Mohamed Ali	National Engineering School of Sfax(ENIS)
Hadj Abdallah, Hsan	ENIS

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<b>TuAB</b>	Room 2
<b>Renewable Energy I (Regular Session)</b>	
09:15-09:35	TuAB.1
<i>Marine Predators Algorithm-Based Model Predictive Controller for MPPT of Grid-Tied PV System</i> , pp. 410-415.	
Ghazi A., Ghazi	King Saud University
Essam, Al-Ammar	King Saud University
Hany, Hasanien	Ain Shams University
09:35-09:55	TuAB.2
<i>Control and Supervision of a Hybrid Production Unit Based on Renewable Energies</i> , pp. 416-420.	
Abdelkarim, Masmoudi	ENIS
Achraf, Abdelkafi	ENIS
Lotfi, Krichen	ENIS
09:55-10:15	TuAB.3
<i>Energy Management Strategies for Hybrid Micro Grid System</i> , pp. 421-426.	
Ghoudelbourk, Sihem	Université Badji Mokhtar Annaba , Algérie
Nadia, Ben Si Ali	Badji Mokhtar Annaba University Annaba, Algeria
Rached, Yousfi	Department of of English / Badji Mokhtar Annaba University, Alge
Mebarka, Bayaud	Department of Electrical Engineering / Badji Mokhtar Annaba Univ

À

<b>TuAC</b>	Room 3
<b>Observer Design II (Regular Session)</b>	
Chair: Triki, Moncef	ENETCOM
Co-Chair: Gassara, Hamdi	University of Sfax, Tunisia
09:15-09:35	TuAC.1
<i>Contribution to the Sensors Faults Diagnosis of a Variable Speed Wind Turbine : Multimodel Approach</i> , pp. 427-432.	
Sayahi, Yosra	University of Sfax, National Engineering School of Sfax ENIS
Allouche, Moez	Engineering School of Sfax, Tunisia
Ghamgui, Mariem	Université De Sfax
Moreau, Sandrine	Poitiers University
Mehdi, Driss	Université De Poitiers
09:35-09:55	TuAC.2
<i>Robust <math>\mathcal{H}_\infty</math> Observer-Based Control Synthesis for a Class of One-Sided Lipschitz Uncertain Systems with Quantized-Input</i> , pp.	

433-439.

El Haiek, Badreddine  
Zoulagh, Taha  
Barbosa, Karina A.  
El hajjaji, Ahmed  
Hmamed, Abdelaziz

Faculty of Science Dhar El Mahraz  
Department of Electrical Engineering, University of Santiago De  
Universidad De Santiago De Chile  
University of Picardie Jules Verne  
Private University of Fez

09:55-10:15

TuAC.3

*Observer-Based State Estimation of Conformable Fractional Systems, for Various Nonlinearities*, pp. 440-443.

Jmal, Assaad  
Naifar, Omar  
Ben Makhoulouf, Abdellatif

University of Sfax, National School of Engineering, Control And  
University of Sfax, National School of Engineering, Control And  
University of Sfax

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**TuAD**

Room 4

**Embedded Systems (Regular Session)**

Chair: Jmal, Wassim  
Co-Chair: Abdaljlil, Sana

ENET'COM, CES Laboratory ENIS, University of Sfax  
Sabratha University

09:15-09:35

TuAD.1

*Embedded Vision Solution for Defect Detection and Counting in Industry 4.0*, pp. 444-448.

Zaway, Lassaad  
Ktari, Jalel  
Ben Amor, Nader  
Jallouli, Mohamed  
Talmoudi, Maher

CESlab  
CES\_Lab ENIS  
National School of Engineering of Sfax  
CES\_Lab ENIS  
Sagemcom

09:35-09:55

TuAD.2

*Enhancing E-Health with Secure IoT Architecture Leveraging Blockchain and AI*, pp. 449-452.

Kessentini, Amina  
Wali, Ibtissem  
Jarray, Mayssa  
Masmoudi, Nouri

Laboratory of Electronics and Information Technology, LETI, ENIS  
LETI\_ENIS  
Department of Industrial Computing, ISIMG, Gabes, Tunisia  
National Engineering School of Sfax

09:55-10:15

TuAD.3

*Improving QoS in Next-Generation Cellular Networks Using Blockchain and Drone Technologies*, pp. 453-458.

Ktari, Jalel  
Ben Kalia, Mariem

CES\_Lab ENIS  
CES\_Lab

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**TuBA**

Room 1

**Robotics (Regular Session)**

Chair: Naifar, Omar  
Co-Chair: Boukattaya, Mohamed

University of Sfax, National School of Engineering, Control and  
Energy Management Laboratory (CEM Lab), Department of Electric  
ENIS

10:30-10:50

TuBA.1

*Evolved State Feedback Control for Manipulator Robots*, pp. 459-463.

Mezghani Ben Romdhane, Neila  
Hajji, Sofien  
Elghoul, Jihen  
Damak, Tarak  
Farza, Mondher

High Institute of Industrial Systems of Gabes  
ENETCOM  
High Institute of Industrial Systems of Gabes  
Lab-STA, National School of Engineering of Sfax, University of S  
Universite De Caen, Ensicaen, Cnrs

10:50-11:10

TuBA.2

*A Discrete-Time Trajectory Tracking Controller for an Underactuated Quadrotor UAV*, pp. 464-469.

Adiguzel, Fatih  
Kurtulus, Kadircan  
Akbatı, Onur

Yildiz Technical University  
Yildiz Technical University  
Yildiz Technical University

11:10-11:30

TuBA.3

*Optimal Control of a Single Drive Car*, pp. 470-473.

Busvelle, Eric

Université De Toulon

Dao, Fatoumata Aïssatou	Université De Toulon
11:30-11:50	TuBA.4
<i>Modeling of 3RRR Parallel Robot</i> , pp. 474-479.	
Saidi, Ahlem	University of Sfax (ENIS)
Mezghani Ben Romdhane, Neila	High Institute of Industriel Systems of Gabes
Damak, Tarak	Lab-STA, National School of Engineering of Sfax, University of S
11:50-12:10	TuBA.5
<i>Kinematics Model for Guiding a 3D Printing Nozzle Using a Continuum-Soft Arm</i> , pp. 480-486.	
Lakhal, Othman	University Lille 1, CRISAL, CNRS-UMR 9189,
Belarouci, Abdelkader	CRISAL-UNiversity of Lille
Yang, Xinrui	CRISAL-University Pf Lille
Aitouche, Abdel	CRISTAL/JUNIA
Merzouki, Rochdi	Ecole Polytechnique De Lille
12:10-12:30	TuBA.6
<i>Adaptive Non-Singular Fast Terminal Sliding Mode Control for Multilateral Teleoperation Systems with Varying-Time Delay</i> , pp. 487-492.	
Ounissi, Asma	ENIS
Mezghani Ben Romdhane, Neila	High Institute of Industriel Systems of Gabes
Boukattaya, Mohamed	ENIS

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<b>TuBB</b>	Room 2
<b>Control Applications I</b> (Regular Session)	
Chair: Gassara, Hamdi	University of Sfax, Tunisia
Co-Chair: Messaoud, Anis	National School of Engineering of Gabes, Tunisia
10:30-10:50	TuBB.1
<i>Optimal Cell Distribution Control for Cancer Chemotherapy</i> , pp. 493-498.	
Hamzeh Pahnehkolaei, Seyed Morteza	University of Texas at Arlington
Wang, Shuo	University of Texas at Arlington
10:50-11:10	TuBB.2
<i>Model Predictive Control Parameterized in Terms of Orthogonal Polynomials</i> , pp. 499-505.	
Dogruer, Can Ulas	Hacettepe University
11:10-11:30	TuBB.3
<i>Robust H-Infinity Controller Synthesis Approach for Uncertainties System</i> , pp. 506-511.	
Abougarair, Ahmed	University of Tripoli
Aboud, Mohammed	Academy
Emhemmed, Adel	University of Tripoli
11:30-11:50	TuBB.4
<i>Model Predictive Control Using First/Third Order Splines</i> , pp. 512-517.	
Dogruer, Can Ulas	Hacettepe University
11:50-12:10	TuBB.5
<i>Model Predictive Control Using Input Signal Approximated by Cubic LSE Splines</i> , pp. 518-523.	
Dogruer, Can Ulas	Hacettepe University

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<b>TuBC</b>	Room 3
<b>Autonomous Systems I</b> (Regular Session)	
Chair: Challal, Mouloud	Institute of Electrical and Electronic Engineering, University M'Hamed BOUGARA of Boumerdes
10:30-10:50	TuBC.1
<i>Active Leader-Following Robust Control for Uncertain Linear Multi-Agent Systems with Input Constraints</i> , pp. 524-529.	
Djadane, Oussama	MIS Lab
El Hajjaji, Ahmed	Univ. De Picardie-Jules Verne
10:50-11:10	TuBC.2
<i>Measurement of ChatGPT Performance in Mapping Natural Language Spelification into an Entity Relationship Diagram</i> , pp. 530-535.	
Omar, Mussa	University of Ajdabiya

11:10-11:30		TuBC.3
<i>Model-Free MIMO Design for Quad-Rotor Drone Attitude Control</i> , pp. 536-541.		
Yao, Tomonori		University of Hyogo
Kawaguchi, Natsuki		University of Hyogo
Sato, Takao		University of Hyogo
11:30-11:50		TuBC.4
<i>Autonomous Parking System for Vehicles: Trajectory Planning and Control</i> , pp. 542-547.		
Malfoy, Alexandre		Cappgemini Engineering
Ajwad, Syed Ali		Université De Poitiers
Fouka, Majda Amina Aida		Cappgemini Engineering
11:50-12:10		TuBC.5
<i>Unauthorized Drones: Classifications and Detection Techniques</i> , pp. 548-555.		
Al-Zahrani, Ali		University of Jeddah
12:10-12:30		TuBC.6
<i>Enhancing Hexapod Robot Locomotion Control through PID Controller Optimization Using Genetic Algorithm</i> , pp. 556-561.		
Benyoucef, Ahmed		Université 20 Août 1955 Skikda
Zennir, Youcef		Université 20 Aout 1955 Skikda
A		
<b>TuBD</b>		Room 4
<b>Renewable Energy II (Regular Session)</b>		
Chair: Allouche, Moez		Engineering School of Sfax, Tunisia
10:30-10:50		TuBD.1
<i>Maximum Power Harvest from Shadowed PV Panels Using PSO Algorithm</i> , pp. 562-566.		
Nadia, Ben Si Ali		Badji Mokhtar Annaba University Annaba, Algeria
Ghoudelbourk, Sihem		Université Badji Mokhtar Annaba , Algérie
Benalia, Nadia		Badji Mokhtar Annaba University Annaba, Algeria
Zerzouri, Nora		Badji Mokhtar Annaba University Annaba, Algeria
10:50-11:10		TuBD.2
<i>Mitigating Chattering Phenomenon for Photovoltaic System Using Sliding Mode Control under Rapid Irradiation Level Variation</i> , pp. 567-572.		
Bel Hadj Salah, Zahra		Laboratory of Electronic and Microelectronic at the FSM National
Krim, Saber		University of Monastir
Hajjeji, Mohamed ali		Faculty of Science , Monastir
11:10-11:30		TuBD.3
<i>Blockchain Based Energy Management: A Comprehensive Guide for Effective Energy Sharing</i> , pp. 573-579.		
Dhorbani, Amira		Junia - L2ep
Hassam-Ouari, Kahina		HEI Lille
Abbes, Dhaker		Junia High Engineering School of Lille (Junia-HEI-Lille)
Robyns, Benoit		HEI-L2EP
11:30-11:50		TuBD.4
<i>Proposal for Wind-Powered Irrigation in Tunisia</i> , pp. 580-585.		
Mbarek, Rahma		Univ. of Sfax
Ghamgui, Mariem		Université De Sfax
Chaabane, Mohamed		National Engineering School of Sfax, Tunisia
Ooualha, Abdelmajid		Univ. of Sfax
Tadeo, Fernando		Univ. of Valladolid
11:50-12:10		TuBD.5
<i>Online PV Monitoring and Prediction Using Tree-Based Method</i> , pp. 586-590.		
Ziane, Abderrezzaq		CDER
Dabou, Rachid		CDER
Necaibia, Ammar		URERMS
Rouabhia, Abdelkrim		CDER
Sahouane, Nordine		CDER
Lachtar, Salah		CDER

Khelifi, Seyfallah	CDER
Slimani, Abdeljalil	CDER
12:10-12:30	TuBD.6
<i>Analysis and Assessment of Grid Connected Photovoltaic Plant Performance in a Desert Climate of Southern Algeria</i> , pp. 591-595.	
Khelifi, Seyfallah	CDER
Rouabhia, Abdelkrim	CDER
Bouraiou, Ahmed	Cder
Bouraiou, Ahmed	Urerms Adrar
Necaibia, Ammar	URERMS
Lachtar, Salah	CDER
Ziane, Abderrezzaq	CDER
Dabou, Rachid	CDER

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<b>TuCA</b>	Room 1
<b>Estimations and Identification (Regular Session)</b>	
Chair: Bedoui, Saida	Gabes University, National Engineering School of Gabes
Co-Chair: Kharrat, Maher	LabSAT, National School of Electronics and Telecommunications of Sfax
14:30-14:50	TuCA.1
<i>Hierarchical Parameter and State Estimation of Fractional Nonlinear Systems</i> , pp. 596-601.	
Marzougui, Soumaya	National School of Engineers of Gabes
Bedoui, Saida	Gabes University, National Engineering School of Gabes
Abdeerrahim, Kamel	ISSIG, ENIG
14:50-15:10	TuCA.2
<i>New Identification Algorithm for Smartphone Simulation Use</i> , pp. 602-607.	
Khoury, Anthony	LIS Lab, Aix-Marseille
Outbib, Rachid	Lis
Younes, Rafic	Quartz Laboratory, ECAM-EPMI
15:10-15:30	TuCA.3
<i>A State-Space Based Interval Estimator for LTI Systems under <math>H_1</math> And/or <math>H^\infty</math> Constraints</i> , pp. 608-613.	
Mohammedi, Irryhl	Université De Bordeaux, Laboratoire IMS
Gucik-Derigny, David	Université De Bordeaux, Laboratoire IMS
Henry, David	Universite Bordeaux
15:30-15:50	TuCA.4
<i>Neural Network-Based Iterative Learning for Uncertain Non-Affine Dynamical Systems</i> , pp. 614-619.	
Vlachos, Christos	Department of Electrical and Computer Engineering, University Of
Tolis, Fotis	Department of Electrical and Computer Engineering, University Of
Bechlioulis, Charalampos	University of Patras
15:50-16:10	TuCA.5
<i>Identification of Output Error Model with Bounded Disturbances</i> , pp. 620-625.	
El Maizi, Hasna	Laboratoire d'Ingenierie Des Systemes - UR 7478 Normandie Univ,
Pouliquen, Mathieu	University of Caen
Safi, Said	Sultan Moulay Slimane University
Frikel, Miloud	Normandie Univ, UNICAEN, ENSICAEN
16:10-16:30	TuCA.6
<i>Factors Associated with Recurrence of Breast Cancer Using Cox Proportional Hazard Model</i> , pp. 626-631.	
Ashleik, Neima	University of Benghazi
Shembesh, Rehab	Benghazi Medical Centre
Saad, Salma	University of Benghazi
El Seaiti, Riham	University of Benghazi

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<b>TuCB</b>	Room 2
<b>Control of Telecommunications Systems I (Regular Session)</b>	
Co-Chair: Hajji, Sofien	ENETCOM

14:30-14:50		TuCB.1
<i>Smart Home Based on Internet of Things</i> , pp. 632-637.		
Smaoui, Mariem	National School of Engineering of Sfax	
Lotfi, Krichen	ENIS	
14:50-15:10		TuCB.2
<i>Wideband Printed Antenna for Wireless Communication Systems</i> , pp. 638-640.		
Challal, Mouloud	Institute of Electrical and Electronic Engineering, University M	
15:10-15:30		TuCB.3
<i>Energy-Efficient Asynchronous MAC Protocol for WSNs with Energy Harvesters</i> , pp. 641-646.		
Bengheni, Abdelmalek	Faculty of Math/CS, Laboratory of Research in Artificial Intelli	
15:30-15:50		TuCB.4
<i>Optimization of MIMO Antenna Approach for 5G Wireless Applications</i> , pp. 647-653.		
Atuwayr, Aqreerah	High Institution of Engineering Technology	
Aboabdulla, Akrem Asmeida	College of Computer Technology Zawia	
Ben Abdelmula, Haitham Saleh	College of Computer Technology Zawia	
Anaiba, Abdulhakim	Libyan Center for Electronic Systems, Programming and Aviation R	
15:50-16:10		TuCB.5
<i>A Comparison Study of BER Performance for 8-PSK and 8-QAM Trellis Coded Modulations in a 2x2 OSTBC-MIMO System</i> , pp. 654-660.		
Abdaljlil, Sana	Sabratha University	
Zerek, Amer	Aziwa University	
Thabit, Fursan	University of Chinese Academy of Sciences	
16:10-16:30		TuCB.6
<i>Analyzing the Effect of Phase Noise on 32-QAM Modulation Technique Performance Over AWGN Channel Using Matlab</i> , pp. 661-666.		
Musbah, Hanan	Faculty of Electronic Technology Bani Waleed	
Abdaljlil, Sana	Sabratha University	
Zerek, Amer	Aziwa University	
Boiprav, Olga	Belarusian State University of Informatics and Radioelectronics	

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<b>TuCC</b>		Room 3
<b>Modeling and Simulation I (Regular Session)</b>		
Chair: Aitouche, Abdel		CRISTAL/JUNIA
14:30-14:50		TuCC.1
<i>Structural and Electrical Properties of Ag/SnO2 for Photovoltaic Applications</i> , pp. 667-670.		
Djeffal, Faycal	Dept of Electronics, University of Batna	
Ferhati, Hichem	Dept of Electronics, University of Batna	
14:50-15:10		TuCC.2
<i>Identification of Equivalent Circuit Model Parameters for a Li-Ion Battery Cell</i> , pp. 671-676.		
Rukavina, Filip	University of Zagreb Faculty of Electrical Engineering and Compu	
Leko, Dorijan	University of Zagreb, Faculty of Electrical Engineering and Comp	
Matijašić, Matija	Rimac Technology D.o.o	
Bralić, Ivan	Rimac Technology D.o.o	
Ugalde, Juan M.	Rimac Technology D.o.o	
Vasak, Mario	University of Zagreb Faculty of Electrical Engineering and Compu	
15:10-15:30		TuCC.3
<i>The Simplified Modeling and Experimental Verification of a Heat Exchanger/Reactor</i> , pp. 677-682.		
He, Menglin	Guizhou University	
Han, Xue	ENSICAEN	
Di Miceli Raimondi, Nathalie	Université De Toulouse	
Cabassud, Michel	University Paul Sabatier, Toulouse, France; CNRS, Laboratoire De	
Dahhou, Boutaieb	LAAS-CNRS	
Lahcen, Farhi	LGC, Université De Toulouse, CNRS, INPT	
15:30-15:50		TuCC.4
<i>Numerical Elucidation of the Electrothermal Characteristics of Gate-All-Around FET Devices</i> , pp. 683-687.		



Nasri, Faouzi  
Salama, Husien

Center for Research in Microelectronics and Nanotechnology Souss  
Computer Systems Institute

15:50-16:10

TuCC.5

*Gravity Drained Tank Modeling*, pp. 688-693.

Rohman Setiawan, Iwan  
Ibnu Salim, Taufik  
Munandar, Aris

National Research and Innovation Agency (BRIN)  
National Research and Innovation Agency (BRIN)  
National Research and Innovation Agency (BRIN)

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**TuCD**

Room 4

**Renewable Energy III** (Regular Session)

Co-Chair: Maamri, Nezha

Ecole Nationale Supérieure d'Ingénieurs De Poitiers

14:30-14:50

TuCD.1

*Design and Implementation of Dual-Output Solar Smart Inverter for Emergency and Off-Grid Applications: A Comparative Study*, pp. 694-699.

Mayouf, Omar  
Mouna, Rekik  
Lotfi, Krichen

National Engineering School of Sfax Tunisia  
ENIS  
ENIS

14:50-15:10

TuCD.2

*Photovoltaics Systems Performances Improvement: Problematic of Dust Waterless Automatic Cleaning on the Photovoltaic Solar Pannels Surface*, pp. 700-705.

Ndiaye, Mouhamadou Falilou  
Mamadou, Bop  
Aidara, Mohamed cherif  
Nkouna, Willy Magloire  
Ndiaye, Ababacar

Université Cheikh Anta DIOP  
Ecole Supérieure Polytechnique / Université Cheikh Anta DIOP  
École Supérieure Polytechnique/Université Cheikh Anta Diop De Da  
Associate Researcher  
Ecole Supérieure Polytechnique (ESP) - Université Cheikh Anta Di

15:10-15:30

TuCD.3

*Numerical Derivative Estimation for Improving the Performance of MPPT Algorithms in Photovoltaic Systems*, pp. 706-712.

Rouphael, Rosalie  
Maamri, Nezha  
Gaubert, Jean-Paul

University of Poitiers, LIAS  
Ecole Nationale Supérieure d'Ingénieurs De Poitiers  
Univerty of Poitiers

15:30-15:50

TuCD.4

*Simulation Study for an Adjustable Ejector Used in Solar Air-Conditioning Systems*, pp. 713-718.

Elhub, Bashir  
Nasir, Albrki  
Abdulati muftah ibrahim, Abdulati  
Ahmida, Mustafa  
Ammar, Alhadi  
Mohamed, Fasil

Elmergib University  
Authority of Natural Science Research and Technology, Tripoli, L  
Higher Institute of Science and Technology Alkhomes  
Higher Institute of Refrigeration and Air Condition Technologies  
Higher Institute of Science and Technology - Zawia  
Libyan Authority for Scientific Research, Benghazi, Libya

15:50-16:10

TuCD.5

*Implementation of MPPT Algorithms to a Developed Photovoltaic Emulator: Study and Comparative Analysis*, pp. 719-724.

Ben Mahmoud, Zouhaira  
Moussa, Intissar  
Kheder, Adel

University of Sousse\_ LATIS Laboratory  
Université De Sousse, Ecole Nationale d'Ingénieurs De Sousse, LA  
ENISo , University of Sousse

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**TuDA**

Room 1

**Control Applications III** (Regular Session)

Co-Chair: Dahech, Karim

Lab-STA, National School of Engineers of Sfax

16:45-17:05

TuDA.1

*Study of a Four-Terminal VSC-HVDC Transmission System Operation for Onshore Integration of Offshore Wind-Farms*, pp. 725-730.

Rekik, Asma  
Boukettaya, Ghada

University of Sfax National School of Engineering  
University of Sfax, National School of Engineering, Control And

17:05-17:25

TuDA.2

*Trajectory Tracking Control of an Autonomous Electric Wheelchair Using Particle Swarm Optimization Based PID Controller*, pp. 731-736.

Amrane, Ali

Université 20 Août 1955 Skikda

17:25-17:45 TuDA.3

*Robustness Improvement and Cost Reduction of a Control System Based on a Sensorless Field-Oriented Control for an Electric Vehicle Based on an Induction Machine*, pp. 737-742.

Tarkhani, Rakia Laboratory of Automatic Electrical System and Environment, Facult  
 Krim, Saber University of Monastir  
 Mohamed Faouzi, Mimouni National Engineering School of Monastir

17:45-18:05 TuDA.4

*Observer Based Tracking Control for Diesel Engine Air Path Subject to Inputs Saturation*, pp. 743-747.

Makni, Salama UPJV, France  
 El hajjaji, Ahmed University of Picardie Jules Verne  
 Djadane, Oussama MIS Lab  
 Chaabane, Mohamed National Engineering School of Sfax, Tunisia

18:05-18:25 TuDA.5

*Multimodel Control of Nonlinear Systems Using a New Weighting Method Based on Gap Metric*, pp. 748-753.

Elkhalil, Khouloud Research Laboratory: Numerical Control of Industrial Processes,  
 Ali, Zribi Research Laboratory: Numerical Control of Industrial Processes,

À

**TuDB** Room 2  
**Linear and Nonlinear Systems** (Regular Session)

Chair: Nouri, Ahmed Said National School of Engineering of SFAJ  
 Co-Chair: Djeflal, Faycal Dept of Electronics, University of Batna

16:45-17:05 TuDB.1

*Comparing LQR and PID Controllers for Quadcopter Control Effectiveness and Cost Analysis*, pp. 754-759.

Abu Ihnak, Mahmoud University of Tripoli  
 Edardar, Mohamed University of Tripoli

17:05-17:25 TuDB.2

*Fault Detection and Estimation for a Nonlinear System Based on Interval Multiobservers*, pp. 760-765.

Abderrahim, Oumayma ENIG  
 Messaoud, Anis National School of Engineering of Gabes, Tunisia

17:25-17:45 TuDB.3

*Solvability of Semilinear Operator Equations with Growing Nonlinearity Using Tikhonov Regularization*, pp. 766-769.

Katta, Ravinder Indian Institute of Information Technology Design and Manufactur  
 Sukavanam, N. Indian Institute of Technology Roorkee

17:45-18:05 TuDB.4

*Optimal Model-Following Design of Input-Output Quantization Control Systems*, pp. 770-773.

Nagao, Kenta University of Hyogo  
 Sato, Takao University of Hyogo  
 Kawaguchi, Natsuki University of Hyogo

18:05-18:25 TuDB.5

*Design of Robust Output Feedback Controllers for Discrete-Time Systems with Polynomial Uncertainties*, pp. 774-781.

Dehnert, Robert Wuppertal University  
 Lerch, Sabine University of Wuppertal  
 Rosik, Michelle Bergische Universität Wuppertal  
 Rauh, Andreas Carl Von Ossietzky Universität Oldenburg  
 Tibken, Bernd Wuppertal University

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**TuDC** Room 3  
**Autonomous Systems II** (Regular Session)

Chair: Mehdi, Driss Université De Poitiers  
 Co-Chair: Hajji, Sofien ENETCOM

16:45-17:05 TuDC.1

*A Tricycle Model to Accurately Control an Autonomous Racecar with Locked Differential*, pp. 782-789.

Raji, Ayoub	University of Modena and Reggio Emilia
Musiu, Nicola	University of Modena and Reggio Emilia
Toschi, Alessandro	University of Modena and Reggio Emilia
Prignoli, Francesco	University of Modena and Reggio Emilia
Mascaro, Eugenio	University of Modena and Reggio Emilia
Musso, Pietro	University of Modena and Reggio Emilia
Amerotti, Francesco	Hipert Srl
Liniger, Alexander	ETH Zürich
Sorrentino, Silvio	University of Modena and Reggio Emilia
Bertogna, Marko	University of Modena and Reggio Emilia

17:05-17:25 TuDC.2

3 DOF Quanser's Quadrotor Control Using LQR Based on PSO, FPA & ACO with Input Saturation, pp. 790-795.

Ghiloubi, Imam Barket	Identification Command Control Communication LI3CUB Laboratory,
Abdou, Latifa	Mostapha Ben Boulaid (Batna2) University
Lahmar, Oussama	Identification Command Control Communication LI3CUB Laboratory,
Dahnoun, Ilyes	Electrical Engineering Laboratory of Biskra LGEB, University Of

17:25-17:45 TuDC.3

Survey and Real Implementation of Lateral Controllers for Automated Driving, pp. 796-803.

Kascha, Marcel	Technische Universität Braunschweig, Institute of Automotive Eng
Gierke, Stephan	Technische Universität Braunschweig, Institute of Automotive Eng
Frede, Marvin	Technische Universität Braunschweig, Institute of Automotive Eng
Henze, Roman	Institut Für Fahrzeugtechnik, TU Braunschweig

17:45-18:05 TuDC.4

Segmented Polytopic LPV Control: A Novel Method for Relaxed Constraints on Operating Regimes, pp. 804-810.

Téczy, Zoltán	Budapest University of Technology and Economics
Kiss, Bálint	Budapest University of Technology and Economics

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**TuDD** Room 4

**Fault Detection and Diagnostics** (Regular Session)

Chair: Gassara, Hamdi	University of Sfax, Tunisia
Co-Chair: Makni, Salama	ENIG

16:45-17:05 TuDD.1

A Fault Tolerant Second Order Sliding Mode Control, pp. 811-816.

Elghoul, Khoulood	Research Laboratory of Numerical Control of Industrial Processes
Dehri, Khadija	University of Gabes
Ben Abdennour, Ridha	National School of Engineering of Gabes

17:05-17:25 TuDD.2

Autoencoder-Based Unsupervised Anomaly Detection in Induction Motors Diagnosis, pp. 817-822.

Aroui, Tarek	The National Engineering School of Sousse
Marmouch, Sameh	The National Engineering School of Sousse

17:25-17:45 TuDD.3

Actuator Fault Estimation in Robot Platoons, pp. 823-828.

Kurniawan, Wijaya	University of Pannonia
Marton, Lorinc	Sapientia - Hungarian University of Transylvania

17:45-18:05 TuDD.4

Integrated Design of Fault-Tolerant Control for a Class of Switching Systems with Sensor Faults, pp. 829-835.

Elouni, Mohamed	LSA/EPT
Hamdi, Habib	LSA/EPT
Rabaoui, Bouali	LSA/EPT
Rodrigues, Mickael	Universite Claude Bernard Lyon 1
Benhadj Braïek, Naceur	Polytechnic School of Tunisia

18:05-18:25 TuDD.5

A Robust Sensor Fault Detection Based on Residual Intervals Generator, pp. 836-843.

Tahri, Fida	Research Laboratory of Numerical Control of Industrial Processes
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Ben Atia, Samah  
Messaoud, Anis  
Ben Abdennour, Ridha

ENIG  
National School of Engineering of Gabes, Tunisia  
National School of Engineering of Gabes

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18:05-18:25

TuDD.6

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*Adaptive Sensor Fault Tolerant Control for Hybrid Systems with Unpredicted Switching Signals*, pp. 844-848.

Yahia, Salwa  
Bedoui, Saida  
Kamel, Abderrahim

Research Unit: Numerical Control of Industrial Processes, Nation  
Gabes University, National Engineering School of Gabes  
National School of Engineers of Gabes

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**Technical Program for Wednesday December 20, 2023**

<b>WeAB</b>		Room 2
<b>Industrial Control &amp; Image Processing (Regular Session)</b>		
09:15-09:35		WeAB.1
<i>Texture Features Extraction Using Wavelet-Based CLBP for Surface Defects Retrieval of Hot Rolled Steel Strip</i> , pp. 849-854.		
Boudani, Fatma Zohra		USTHB, Algeria
Nacereddine, Nafaa		CRTI
Laiche, Nacéra		USTHB, Algeria
09:35-09:55		WeAB.2
<i>Corneal Endothelial Images Segmentation Using Deep Learning Model</i> , pp. 855-861.		
Chaari, Abir		Enet'com, ATSIP, Sfax
Kallel Fourati, Imen		Sfax University
Ben Hammouda Faten, Faten		Enet'com, ESSE Laboratory, Sfax
Frikha, Mondher		ENET'COM
09:55-10:15		WeAB.3
<i>Analysis of the Effectiveness of Moving Object Management in Virtual Reality</i> , pp. 862-865.		
Kurasov, Pavel		Volga State University of Technology
Petukhov, Igor		Volga State University of Technology
Steshina, Liudmila		Volga State University of Technology
Tanryverdiev, Ilya		Volga State University of Technology
À		
<b>WeBA</b>		Room 1
<b>Fractional Order Systems (Invited Session)</b>		
Chair: Maamri, Nezha		Ecole Nationale Supérieure d'Ingénieurs De Poitiers
10:30-10:50		WeBA.1
<i>Asymptotic Stability of Discrete Two Dimensional Fractional Order Positive Systems</i> , pp. 866-869.		
Dami, Laila		Cadi Ayad University
Benzaouia, Abdellah		Faculty of Science Semlalia
10:50-11:10		WeBA.2
<i>On the Stabilization of a Class of OSL Conformable Fractional Order Nonlinear Systems</i> , pp. 870-874.		
Alsharif, Ali Omar M.		Sfax University, Engineering National School, Electrical Engin
Jmal, Assaad		University of Sfax, National School of Engineering, Control And
Naifar, Omar		University of Sfax, National School of Engineering, Control And
Ahmed, Ausama H.		Elmergib University
Gassara, Hamdi		University of Sfax, Tunisia
Ben Makhoulouf, Abdellatif		University of Sfax
11:10-11:30		WeBA.3
<i>Distributed State Estimation for Fractional-Order Linear Systems Based on a Network of Reduced-Order Centralized Observers (I)</i> , pp. 875-880.		
Zhang, Yuqing		INSA CVL
Liu, Da-Yan		INSA Centre Val De Loire, Campus De Bourges
Boutat, Driss		INSA Centre Val De Loire
Wei, Yan-Qiao		Yanshan University
11:30-11:50		WeBA.4
<i>Simultaneous Algebraic Estimation of Pseudo-State and Disturbance for a Class of Fractional Order Linear Systems (I)</i> , pp. 881-885.		
Wei, Yan-Qiao		Yanshan University
Liu, Da-Yan		INSA Centre Val De Loire, Campus De Bourges
Hua, Changchun		Yanshan University
11:50-12:10		WeBA.5
<i>Fast and Robust Differentiator for Non-Commensurate Fractional-Order Linear Systems (I)</i> , pp. 886-891.		
Liu, Chang		University of Science and Technology of China
Liu, Da-Yan		INSA Centre Val De Loire, Campus De Bourges
Boutat, Driss		INSA Centre Val De Loire

Wang, Yong	University of Science and Technology of China
Wei, Yan-Qiao	Yanshan University
12:10-12:30	WeBA.6
<i>Modeling and Characterization of a Fractional Lorenz Chaotic Variant with the Infinite State Representation (I)</i> , pp. 892-898.	
Maamri, Nezha	Ecole Nationale Supérieure d'Ingénieurs De Poitiers
Trigeassou, Jean-claude	University of Poitiers

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<b>WeBB</b>	Room 2
<b>Linear and Nonlinear Systems II (Regular Session)</b>	
Chair: Messaoud, Anis	National School of Engineering of Gabes, Tunisia
Co-Chair: Chaabane, Mohamed	National Engineering School of Sfax, Tunisia
10:30-10:50	WeBB.1
<i>Utilising BCI Techniques for Controlling Robotic Arm Movements by Motor Imagery Signals</i> , pp. 899-904.	
Mohammed, Asmaa	College of Electronic Technology - Bani Walid
Ghait Alfughi, Hana	The College of Electronic Technology/ Bani Walid
Alneqrat, M, Fatima	College of Electronic Technology / Bani-Walid
aboalqasem ,Aghnaya, Hajer	The College of Electronic Technology/ Bani Walid
Mohammed mohammed, Amal	The College of Electronic Technology/ Bani Walid
10:50-11:10	WeBB.2
<i>Enhancing Knee Rehabilitation Exoskeleton Control Via a Robust LMI-Based Strategy and by Considering State Constraints</i> , pp. 905-911.	
Jenhani, Sahar	Laboratory of Robotics, Informatics and Complex Systems (RISC La
Gritli, Hassène	Université De Tunis El Manar, Ecole Nationale d'Ingénieurs De Tu
11:10-11:30	WeBB.3
<i>Support Vector Machine for Cardiac Catheterization</i> , pp. 912-918.	
Hamad, Tahani Muftah Abdulsalam	University of Benghazi
Eltarhouni, Wafa Ibrahim	Benghazi University
11:30-11:50	WeBB.4
<i>Reduced-Order Observer Design for Time-Delay Systems Using Partial Pole Placement</i> , pp. 919-924.	
Sassi, Ahlem	ESME Sudria
Boussaada, Islam	University Paris Saclay & IPSA
Niculescu, Silviu-Iulian	University Paris-Saclay, CNRS, CentraleSupélec, Inria
11:50-12:10	WeBB.5
<i>Analysis of a Sensor Switching Approach for State Estimation with Applications to Electrochemical Power Converters and Energy Storage Systems (I)</i> , pp. 925-930.	
Rauh, Andreas	Carl Von Ossietzky Universität Oldenburg
Lahme, Marit	Carl Von Ossietzky Universität Oldenburg
12:10-12:30	WeBB.6
<i>Observability Analysis of Nonlinear Input-Linear Systems Based on Lie Derivations Using Interval Arithmetic (I)</i> , pp. 931-937.	
Rosik, Michelle	Bergische Universität Wuppertal
Dehnert, Robert	Wuppertal University
Lerch, Sabine	University of Wuppertal
Tibken, Bernd	Wuppertal University
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<b>WeBC</b>	Room 3
<b>Real Time Systems &amp; Renewable Energy (Regular Session)</b>	
10:30-10:50	WeBC.1
<i>Security Measures for Ensuring Confidentiality of Information Using Encryption by Elliptic Curve with Precomputation</i> , pp. 938-942.	
Mousay, Fatimah	The Libyan Academy
Mousey, Fatima	Libyan Academy
Budalal, Asma	College of Electrical and Electronic Engineering Technology
10:50-11:10	WeBC.2
<i>Novel SnS Absorber Film Based on Grooves and Au-Nanoparticles for Photovoltaic Applications</i> , pp. 943-947.	
Ferhati, Hichem	Dept of Electronics, University of Batna

11:10-11:30

WeBC.3

*Integrated Ultrasound Pulser for NDT Applications*, pp. 948-952.

Abaravicius, Bartas  
 Moldovan, Alexandru  
 Borges, Clara  
 Cochran, Sandy  
 Saillant, Jean-Francois  
 Mitra, Srinjoy

University of Edinburgh  
 University of Glasgow  
 Framatome  
 University of Glasgow  
 Framatome  
 University of Edinburgh

11:30-11:50

WeBC.4

*Clot Monitoring through Electromechanical Analysis*, pp. 953-958.

Abu Qamar, Hamzeh  
 Mohammed, Khaled  
 Meetani, Sami  
 Alketbi, Rashed  
 Umar, Malik  
 Al Ahmad, Mahmoud

United Arab Emirates University  
 United Arab Emirates University  
 United Arab Emirates University  
 United Arab Emirates University  
 UAE University  
 United Arab Emirates University

11:50-12:10

WeBC.5

*Impact of Dust Accumulation on Photovoltaic System Performance in a Coast Environment—Case Study in Libya*, pp. 959-963.

Elbaz, Abdurazaq  
 Elfaqih, Albashir

The Libyan Center for Solar Energy Research and Studies Tripoli  
 The Libyan Center for Solar Energy Research and Studies

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**WeBD**

Room 4

**Control Applications IV (Regular Session)**

Chair: Ghamgui, Mariem  
 Co-Chair: Mehdi, Driss

Université De Sfax  
 Université De Poitiers

10:50-11:10

WeBD.2

*Anisotropy-Based Analysis Problem for Linear Discrete Time Invariant Systems with Fixed-Point Arithmetic in Control Actions Space*, pp. 964-968.

Kustov, Arkadiy  
 Yurchenkov, Alexander

Institute of Control Sciences  
 V.A. Trapeznikov Institute of Control Sciences of Russian Academ

11:10-11:30

WeBD.3

*A Bond Graph Approach to Detect and Isolate Fault on Hybrid Multi-Source System*, pp. 969-974.

Boukerdja, Mahdi

CRISTAL UMR CNRS 9189, Université De Lille, Villeneuve d'Ascq, F

11:30-11:50

WeBD.4

 *$H^\infty$  Control for 2D Continuous Singular Systems Described by the Roesser Model*, pp. 975-979.

Dami, Laila  
 Benzaouia, Abdellah

Cadi Ayad University  
 Faculty of Science Semlalia

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