# STA'2017

## 18th International conference on Sciences and Techniques of Automatic control & computer engineering

# Program

## STA'2017

**December 21-23, 2017**
**Monastir – Tunisia**

# Eighteenth International conference on Sciences and Techniques of Automatic Control & computer engineering

# STA′2017

*Organized by*

**Laboratory of Sciences and Techniques of Automatic control & computer engineering (Lab-STA) of National Engineering School of Sfax, University of Sfax (ENIS)**

**and**

**Tunisian Association of Numeric Techniques and Automatic - *ATTNA***

*Technical Co-sponsorship*

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**Tunisia Section RAS (Robotics and Automation Society) Chapter**

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*with the participation of the*

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# Preface

The Eighteenth international conference on *Sciences and Techniques of Automatic control & computer engineering* (STA′2017) will take place in Monastir-Tunisia on December, 21-23, 2017. The previous STA conferences have been held in Kerkennah (November 2000), in Douz (November 2001), in Monastir (December 2002), in Sousse (December 2003), in Hammamet (December 2004), in Sousse (December 2005), in Hammamet (December 2006), in Monastir (November 2007) in Sousse (December 2008), in Hammamet (December 2009) in Monastir (December 2010), in Sousse (December 2011), in Monastir (December 2012), in Sousse (December 2013), in Hammamet (December 2014), in Monastir (December 2015) and in Sousse (December 2016). This conference unites several participants descended of various national and international academics and industrial enterprises.

The Eighteenth international conference STA'2017 aims to create a discussion field between academics and industrials implied in the domains of automatic. The conference STA has the ambition to promote research in the *Automatic control, computer engineering* and their industrial applications while publishing the mean research results developed recently. These international conferences unite several national and international participants of universities and industry and give the opportunity of exchanges and interesting communications between the community of the academics and the industrial staff.

Along the international conference, two plenary lectures and many Communications will be presented and discussed, dealing with various themes bound to the automatic, computer engineering and industrial applications. About one hundred eighty communications in scientific and technological domains (electrical machines, agricultural systems, biotechnical processes, heating transfer, transportation, imagery, robotics, mechanical systems and electronic devices etc.), will be presented along the three days of this international conference. The best papers will be selected by theme to be published in one of the four following journals: the *"International Journal* on *Sciences and* Techniques of Automatic control & computer engineering, *IJ-STA"*, *"Journal of Electrical Systems*, *JES"*, *"Journal of Automation Systems Engineering*, *JASE"*, *"International Journal of Automation and Computing IJAC"* and *"International Journal of Innovative Computing, Information and Control IJICIC"*..

We wish the welcome to all participants of the Eighteenth international conference STA'2017, while wishing them an agreeable stay in Monastir - Tunisia.

**Abdelwaheb AITOUCHE, Mohamed CHAABANE and**

**Fernando TADEO**

Presidents of the international conference *STA′*2017



**2017**

# Avant-propos

La dix-huitième conférence internationale des *Sciences et Techniques de l'Automatique et de l'ingénierie informatique* (STA′2017), qui se déroulera du 21 au 23 décembre 2017 à Monastir, Tunisie, fait suite aux autres manifestations STA organisées à Kerkennah (novembre 2000), à Douz (novembre 2001), à Monastir (décembre 2002), à Sousse (décembre 2003), à Hammamet (décembre 2004) à Sousse (décembre 2005), à Hammamet (décembre 2006), à Monastir (Novembre 2007), à Sousse (décembre 2008), à Hammamet (décembre 2009), à Monastir (décembre 2010), à Sousse (décembre 2011), à Monastir (décembre 2012), à Sousse (décembre 2013), à Hammamet (décembre 2012), à Monastir (décembre 2015) et à Sousse (décembre 2016) qui avaient réuni plusieurs participants issus de diverses institutions universitaires nationales et internationales, et entreprises industrielles.

La conférence internationale STA′2017 vise à créer une synergie entre les universitaires et les industriels impliqués dans les domaines liés à l'Automatique. Elle se donne comme objectifs de promouvoir la recherche en Automatique et ses applications dans l'industrie et de garantir la diffusion des principaux résultats développés récemment par les chercheurs (automaticiens, électrotechniciens, informaticiens industriels, etc.) de la discipline Génie Electrique et des disciplines apparentées (Génie Mécanique, Génie des Procédés, etc.). En outre, cette conférence internationale STA′2017 est l'occasion d'échanges et de communications fructueuses au sein de la communauté des universitaires et avec le monde industriel.

Au cours de la conférence internationale STA′2017 deux conférences plénières et un workshop seront présentées, en abordant différents thèmes liés à l'Automatique et ses applications  industrielles. Aux alentours de cent quatre vingt communications, traitant de divers thèmes de l'Automatique et ses applications dans divers domaines scientifiques et technologiques (machines électriques, serres agricoles, procédés biotechnologiques, souffleries, transport, imagerie, robotique, mécatronique etc.),  seront présentées tout au long des trois jours de cette conférence internationale. Les meilleurs papiers seront sélectionnés en vue de leur publication dans *"International Journal on Sciences and Techniques of Automatic control & computer engineering*, IJ-STA"*, "Journal of Electrical Systems*, JES"*, "Journal of Automation Systems Engineering*, JASE"*, "International Journal of Automation and Computing IJAC"* et *"International Journal of Innovative Computing, Information and Control IJICIC"*.

Nous souhaitons la bienvenue à tous les participants de la dix-huitième conférence internationale STA′2017 tout en leur souhaitant de passer un agréable séjour à Monastir, Tunisie.

**Abdelwaheb AITOUCHE, Mohamed CHAABANE et**

**Fernando TADEO**

Présidents de la conférence internationale *STA*′2017



2017

# توطئة

المؤتمر الدولي الثامن عشر للعلوم والتقنيات في التحكم الآلي والهندسة الإعلامية هو تواصل للملتقيات السابقة المنعقدة بقرقنة (نوفمبر 2000) ودوز (نوفمبر 2001) والمنستير (ديسمبر 2002) وسوسة (ديسمبر 2003) والحمامات (ديسمبر 2004) وسوسة (ديسمبر 2005) والحمامات (ديسمبر 2006) والمنستير (نوفمبر 2007) وسوسة (ديسمبر 2008) والحمامات (ديسمبر 2009) والمنستير (ديسمبر 2010) وسوسة (ديسمبر 2011) والمنستير (ديسمبر 2012) وسوسة (ديسمبر 2013) والحمامات (ديسمبر 2014) والمنستير (ديسمبر 2015) وسوسة (ديسمبر 2016) والتي جمعت عدة مشاركين من مختلف المؤسسات الجامعية و الصناعية من تونس ومن الخارج. نسعى من خلال هذا المؤتمر الدولي إلى تعزيز صلة التقارب بين الجامعيين والصناعيين في ميدان التحكم الآلي والإعلامية الصناعية حتى يتسنى لهم إمكانية تبادل المعلومات والخبرات في هذا الميدان.

وتجدر الإشارة بأن هذا المؤتمر الدولي يهدف إلى الارتقاء بالبحث العلمي و التكنولوجيات الحديثة في التحكم الآلي وتطبيقاته في مجالي الصناعة و الفلاحة وبالعمل على نشر أهم النتائج المتحصل عليها حديثا من طرف الباحثين في التحكم الآلي والهندسة الإعلامية بالمجلات و النشريات و إدماجها في التدريس عبر دورات التكوين في مجالي الهندسة الكهربائية والهندسة الإعلامية.

هذا ويحتوي برنامج المؤتمر الدولي على عدة محاضرات يلقيها أساتذة مدعوون من تونس، من المغرب العربي ، من فرنسا، و من عدة دول أخري ومن المنتظر أن حوالي مائة وثمانون مداخلة تعرض خلاله مبينة أهم وأحدث الأعمال العلمية المنجزة من طرف الباحثين المنتمين إلى عدة مخابر ووحدات بحث من تونس ومن الخارج. يختتم المؤتمر الدولي المذكور بتنظيم مائدة مستديرة حول سبل تثمين نتائج الأبحاث التونسية وتطبيقاتها في ميداني الصناعة و الفلاحة.

يسهر مخبر البحث علوم وتقنيات التحكم الآلي و الإعلامية الصناعية علي تنظيم هذا المؤتمر الدولي للعلوم والتقنيات في التحكم الآلي والهندسة الإعلامية. إن هذا المؤتمر يحضى بالدعم المادي والمعنوي من وزارة التعليم العالي والبحث العلمي، من جامعة صفاقس، من المدرسة الوطنية للمهندسين بصفاقس، من جمعية التقنيات الرقمية والتحكم الآلي وعدة مخابر و وحدات بحث من تونس و من الخارج و أطراف أخرى.

**رؤساء المؤتمر الثامن عشر للعلوم والتقنيات في التحكم الآلي والهندسة الإعلامية**

**محمد شعبان          عبد الوهاب عيتوش          فرنندو تدايو**

# 18th international conference on Sciences and techniques of automatic control & computer engineering - STA 2017

**December 31-23, 2017, Monastir, TUNISIA**

## Program at a Glance

**STA'2017 Technical Program Thursday December 21, 2017**

| STA'2017 Technical Program Thursday December 21, 2017 | | | |
|---|---|---|---|
| Track T1 | Track T2 | Track T3 | Track T4 |
| 08:30-08:45<br>Room A<br>Opening | | | |
| 08:45-09:45<br>Room A<br>**MonPS1 (Pr. Horst SCHULTE)** | | | |
| 09:45-10:05<br>Coffee break | | | |
| 10:05-12:25<br>Room A<br>Regular Session **ThuA1**<br><br>S1: **RAC** (7) | 10:05-12:25<br>Room B<br>Regular Session **ThuA2**<br><br>S2: **FTCS** (6) | 10:05-12:25<br>Room C<br>Regular Session **ThuA3**<br><br>S3: **CEM** (7) | 10:05-12:25<br>Room D<br>Regular Session **ThuA4**<br><br>S4: **TCE** (7) |
| 12:25-15:00<br>Lunch | | | |
| 15:00-17:00<br>Room A<br>Regular Session **ThuB1**<br><br>S5: **NTA+ACSE** (7) | 15:00-17:00<br>Room B<br>Regular Session **ThuB2**<br><br>S6: **REC** (7) | 15:00-17:00<br>Room C<br>Regular Session **ThuB3**<br><br>S7: **NEM + PEC** (7) | 15:00-17:00<br>Room D<br>Regular Session **ThuB4**<br><br>S8: **SIP** (7) |

**STA'2017 Technical Program Friday December 22, 2017**

| STA'2017 Technical Program Friday December 22 2017 | | | |
|---|---|---|---|
| **Track T1** | **Track T2** | **Track T3** | **Track T4** |
| 08:30-09:30<br>Room A<br>**TuePS2 (Pr. Abdelouhab AITOUCHE)** | | | |
| 09:30-10:30<br>Room A<br>Regular Session **FriA1**<br><br>S9 : **ASS** (3) | 09:30-10:30<br>Room B<br>Regular Session **FriA2**<br><br>S10 : **MRS** (3) | 09:30-10:30<br>Room C<br>Regular Session **FriA3**<br><br>S11 : **MES** (3) | 09:30-10:30<br>Room D<br>Regular Session **FriA4**<br><br>S12 : **CRS** (3) |
| 10:30-10:50<br>Coffee break | | | |
| 10:50-12:30<br>Room A<br>Regular Session **FriB1**<br><br>S13 : **ACS** (5) | 10:50-12:30<br>Room B<br>Regular Session **FriB2**<br><br>S14 : **SCC+SGPS** (5) | 10:50-12:30<br>Room C<br>Regular Session **FriB3**<br><br>S15 : **CEM** (5) | 10:50-12:30<br>Room D<br>Regular Session **FriB4**<br><br>S16 : **CES+ACSE** (5) |
| 12:30-15:00<br>Lunch | | | |
| 15:00-17:00<br>Room A<br>Regular Session **FriC1**<br><br>S17 : **REC** (6) | 15:00-17:00<br>Room B<br>Regular Session **FriC2**<br><br>S18 : **CAD** (6) | 15:00-17:00<br>Room C<br>Regular Session **FriC3**<br><br>S19 : **SIP** (6) | 15:00-17:00<br>Room D<br>Regular Session **FriC4**<br><br>S20 : **ISC** (6) |

**STA'2017 Technical Program Saturday December 23, 2017**

| STA'2017 Technical Program Saturday December 23, 2017 | | | |
|---|---|---|---|
| Track T1 | Track T2 | Track T3 | Track T4 |
| 08:30-10:10<br>Room A<br>Regular Session **SatA1**<br><br>S21 : **CRS** (5) | 08:30-10:10<br>Room B<br>Regular Session **SatA2**<br><br>S22 : **SMC** (5) | 08:30-10:10<br>Room C<br>Regular Session **SatA3**<br><br>S23 : **FOSC** (5) | 08:30-10:10<br>Room D<br>Regular Session **SatA4**<br><br>S24 : **REC** (5) |
| 10:30-10:50<br>Coffee break | | | |
| 10:30-11:50<br>Room A<br>Regular Session **SatB1**<br><br>S25: REC (4) | 10:30-11:50<br>Room B<br>Regular Session **SatB2**<br><br>S26: TCE (4) | 10:30-11:50<br>Room C<br>Regular Session **SatB3**<br><br>S27 : CEV&DSI (4) | 10:30-11:50<br>Room D<br>Regular Session **SatB4**<br><br>S28 : BSP (4) |
| **11:50-12:30**<br>**Conference close** | | | |
| 12:30-15:00<br>Lunch | | | |

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|---|---|
| **ACSE:** Advanced Control Systems Engineering | **MRS:** Mechatronics and Robotics Systems |
| **ASE:** Advances in Software Engineering | **MES:** Modeling of Engineering Systems |
| **ACS:** Automatic Control Systems | **NEM:** Networks and Electrical Machines |
| **ASS:** Automation and Supervision Systems | **NTA:** Nonlinear Theory and Application |
| **CEM:** Circuits, Electronics and Micro-electronics | **PEC:** Power Electronics and Control |
| **CES:** Control and Embedded System | **REC:** Renewable Energy Conversion |
| **CEV:** Control of Electrical Vehicles | **RAC:** Robust and Adaptive Control |
| **CRS:** Control of Robotics Systems | **SIP:** Signal and Image Processing |
| **CAD:** Control, Automation and Diagnosis | **SMC:** Sliding Mode Control |
| **FTCS:** Fault Tolerant Control Systems | **SCC:** Smart City Control |
| **FOSC:** Fractional-Order Systems and Controls | **SGPS:** Smart Grid Power System |
| **ISC:** Intelligent Systems Control | **TCE:** Tele Communications Engineering |

*Inscription for the conference* : **14h00–21h00**

*Inscription for the conference : 7h30-8h30*

*Opening of the* 18th *international conference  STA'2017* : **08h30–08h45**

**Plenary Session SP1**

**Presidents:  Fernando TADEO  & Driss MEHDI**

| 08h45–09h45 | **Model-based Control Design for Ancillary Services of Wind Farms under Realistic Conditions: Need of Model Based Approaches and Overview** <br> **Prof. Dr.-Ing Horst SCHULTE, University of Applied Sciences HTW Berlin Germany** | *STA'2017–SP1* |
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*Coffee break* : **09h45–10h05**

**Session S1 : ThuA1:** *Robust and Adaptive Control*  (*RAC*)

**Presidents:  Tarek DAMAK & Hamdi GASSARA**

| 10h05–10h25 | **Applications to Function Approximation and System Control based on Wavelet Neural Network** <br> **Ameni JOUILA and Khaled NOURI** | *PID4448–RAC* |
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| 10h25–10h45 | **Robust Control of a DC-DC Buck Converter** <br> **Fouad MESQUINE and Hamza KHALLOUK** | *PID4477–RAC* |
| 10h45–11h05 | **Adaptive state observer for time delay systems with uncertainties and delayed state perturbation** <br> **Nouha BOUSSHMINE and Dahou SOUDANI** | *PID4484–RAC* |
| 11h05–11h25 | **Delay-dependent H∞ controller design for discrete Switched system: an average dwell time approach** <br> **Mohamed Amin REGAIEG, Mourad KCHAOU, Hamdi GASSARA, Ahmed EL HAJJAJI and** | *PID4578–RAC* |

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| | **Mohamed CHAABANE** | |

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| **11h25–11h45** | **Analysis and robust LSDP control of a car suspension system with disturbance**<br>**Marwa YOUSFI, Ali Ameur HAJ SALAH and Tarek GARNA** | *PID4601–RAC* |

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| **11h45–12h05** | **H2 - H∞ Static Output feedback control for Vehicle Chassis Stability with input saturation**<br>**Amal FERJANI, Ines ZAIDI, Ahmed EL HAJJAJI, Abdelhamid RABHI and Mohamed CHAABANE** | *PID4626–RAC* |

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| **12h05–12h25** | **Structural Active Control Using µ-Synthesis**<br>**Karima CHAKER and Badreddine SBARTAI** | *PID4647–RAC* |

## Session S2: ThuA2:   *Fault Tolerant Control Systems  (FTCS)*

**Presidents: Driss MEHDI & Maha BOUATTOUR**

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| **10h05–10h25** | **A Data-Driven Approach Based Health Indicator for Remaining Useful Life Estimation of Bearings**<br>**Mufutau AKURUYEJO,  Samuel KOWONTAN and Jaouher BEN ALI** | *PID4520–FTCS* |

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| **10h25–10h45** | **State Feedback Control Against Sensor Faults for Uncertain T-S Fuzzy System: Descriptor Approach**<br>**Imen HAJ BRAHIM, Maher KHARRAT, Mohamed CHAABANE and Driss MEHDI** | *PID4563–FTCS* |

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| **10h45–11h05** | **Neighbor Machines Effects on the Efficiency of Electromagnetic Signatures-based Diagnosis Techniques**<br>**Mohamed SALAH, Ahmed SBOUI, Mohamed GHARBI, Khmais BACHA and Abdelkader CHAARI** | *PID4571–FTCS* |

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| **11h05–11h25** | **H_=H∞ observer design for nonlinear T-S fuzzy systems subject to sensor and actuator faults**<br>**Salama MAKNI, Maha BOUATTOUR, Ahmed EL HAJJAJI and Mohamed CHAABANE** | *PID4582–FTCS* |

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| **11h25–11h45** | **The fault detection approach using bond graph model**<br>**Maroua SAID, Nadia HAJJI, Okba TAOUALI and Kais BOUZRARA** | *PID4600–FTCS* |

| 11h45–12h05 | Active Fault Tolerant Control using Bond graph formalism: the hydraulic system case study<br>Hajer NAJARI, Rafika EL HARABI and Mohamed Naceur ABDELKRIM | *PID4649–FTCS* |

**Session S3: ThuA3:** *Circuits, Electronics and Micro-electronics (CEM)*

**Presidents:** Mounir SAMET & Nouri MASMOUDI

| 10h05–10h25 | Immunity Test of RF MEMS of Non Uniform Test Radiation Techniques<br>Bassem JMAI, Paulo MENDES, Adnen RAJHI and Ali GHARSALLAH | *PID4420–CEM* |
| 10h25–10h45 | Propagation of electromagnetic wave in biological tissue: Theoretical approach of wave-tissue interactions<br>Khaoula TAYARI, Houda WERFELLI, Mondher CHAOUI, Hamadi GHARIANI and Mongi LAHIANI | *PID4474–CEM* |
| 10h45–11h05 | Design of High Performance and Low Power Dissipation Operational Transconductance Amplifier By Using Matlab Optimization<br>Radhouane LAAJIMI and Abdelhamid BARHOUMI | *PID4525–CEM* |
| 11h05–11h25 | Hardware implementation of 1-D 8-point Adaptive Multiple Transform in Post-HEVC standard<br>Sonda BEN JDIDIA, Ahmed KAMMOUN, Fatma BELGHITH and Nouri MASMOUDI | *PID4566–CEM* |
| 11h25–11h45 | Early depth partitioning determination algorithm for SHVC encoding standard<br>Ibtissem WALI, Amina KESSENTINI, Mohamed Ali BEN AYED and Nouri MASMOUDI | *PID4572–CEM* |
| 11h45–12h05 | Role of High-k dielectric gate Materials in improving the Power 4HSiC MOSFET performance<br>B. ZERROUMDA, Faycal DJEFFAL, H. FERHANI and T. BENTRCIA | *PID4546–CEM* |
| 12h05–12h35 | Low Voltage Low Power Current Comparator Circuit<br>Mounira BCHIR, Nèjib HASSEN and Kamel BESBES | *PID4606–CEM* |

**Session S4: ThuA4:** *Tele Communications Engineering (TCE)*

**Presidents:** Hikmet SAMET & Amer ZEREK

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| 10h05–10h25 | **Measurements and Calculations of the Electromagnetic Radiation in Tripoli**<br>Isslam Ali FADEL, Mohamed M. ELFITURI and Amer R. ZEREK | *PID4280–TCE* |

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| 10h25–10h45 | **Modeling and Performance Analysis of the Transceiver Duplex Filter using SIMULINK**<br>Amer M. DAERI, Amer R. ZEREK and Awatif Abobakr ALI | *PID4333–TCE* |

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| 10h45–11h05 | **New Study on the Distribution of EM Fields near the Gsm Cellular Networks in the Urban Area of Greater Tunis**<br>Said GHNIMI, Chaouki GUESMI, Fakhreddine KHELIFA and Ali GHARSALLAH | *PID4410–TCE* |

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| 11h05–11h25 | **Prediction of Rain Attenuation at the C, X, Ku and Ka Bands for Fixed Satellite System Based on ITU-R Model in Libya**<br>Nafaa M. SHEBANI, Amer R. ZEREK, Zeyad M. ELKWASH and Rowaida K. ALMONEER | *PID4494–TCE* |

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| 11h25–11h45 | **Multiple Ultra Wide Band Sources Localization with Time Reversal Technique using FDTD**<br>Marwa DAGHARI, Kamel NAFKHA and Hedi SAKLI | *PID4595–TCE* |

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| 11h45–12h05 | **Small size Cubic Antenna Design For WSN**<br>Salem GAHGOUH, Hedi RAGAD and Ali GHARSALLAH | *PID4604–TCE* |

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| 12h05–12h25 | **Impact of layout on the conducted emissions of a dc-dc converter using numerical approach**<br>Wided BELLOUMI, Arnaud BRÉARD, Jaleleddine BEN HADJ SLAMA and Christian VOLLAIRE | *PID4629–TCE* |

*Lunch:* **12h25–15h00**

**Session S5: ThuB1:** *Nonlinear Theory and Application (NTA) & Advanced Control Systems Engineering (ACSE)*

**Presidents:** Mondher FARZA & Sofien HAJJI

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| **15h00–15h20** | **High gain observer design for a class of MIMO nonlinear systems triangular with respect to an order**<br>Clément TRÉANGLE, Tomas MÉNARD and Mondher FARZA | **PID4467–NTA** |

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| **15h20–15h40** | **Non-dominated sorting genetic algorithm for the high gain observer optimization. Application to chaos synchronization**<br>Ines DALDOUL and Ali Sghair TLILI | **PID4512–NTA** |

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| **15h40–16h00** | **Decentralized Optimal Control for Nonlinear Interconnected Dynamical Systems with Fixed Final Time Using SDRE Approach**<br>Ahmed FEYDI, Salwa ELLOUMI and Naceur Benhadj BRAIEK | **PID4535–NTA** |

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| **16h00–16h20** | **A simple filtered high gain observer for a class of uncertain nonlinear systems**<br>Clement TRÉANGLE, Mondher FARZA and Mohamed M'SAAD | **PID4556–NTA** |

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| **16h20–16h40** | **Observer-based control for a class of polynomial systems with Time Delay**<br>Imen IBEN AMMAR, Hamdi GASSARA, Ahmed EL HAJJAJI and Mohamed CHAABANE | **PID4594–NTA** |

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| **16h40–17h00** | **Decentralized observer based Control Design of Nonlinear Polynomial Interconnected Systems**<br>Basma ABIDI and Salwa ELLOUMI | **PID4461–ACSE** |

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| **17h00–17h20** | **Deep MLP for systems modeling**<br>Latifa BEL HAJ SALAH and Fathi FOURATI | **PID4522–ACSE** |

**Session S6: ThuB2:** *Renewable Energy Conversion (REC)*

**Presidents: Fernando TADEO & Ahmed TOUMI**

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| **15h00–15h20** | **Development of control strategies in energy conversion wind turbine system based on PMSG**<br>Hedi Ben MAHDHI, Hechmi BEN AZZA and Mohamed JEMLI | **PID4548–REC** |

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| **15h20–15h40** | **Nonlinear Control of a Permanent Magnet Synchronous Generator in Wind Energy Conversion System with Maximum Power Extraction**<br>Ameni KCHAOU, Aziz NAAMANE, Yassine KOUBAA and Nacer M'SIRDI | **PID4554–REC** |

| 15h40–16h00 | **MPPT algorithm for wind energy conversion system based on PMSG**<br>Asma TOUNSI,  Hafedh ABID, Maher KHARRAT and Khaled ELLEUCH | *PID4617–REC* |

| 16h00–16h20 | **Modelling and control of greenhouses powered by a renewable energy system**<br>Manel JOMAA, Fernando TADEO and Abdelkader MAMI | *PID4540–REC* |

| 16h20–16h40 | **MPPT controllers for PV array panel connected to Grid**<br>Hedi TRABELSI, Mourad ELLOUMI, Hafedh ABID and Maher KHARRAT | *PID4573–REC* |

| 16h40–17h00 | **Comparative study of fuzzy logic peak power trackers for a photovoltaic system**<br>Naziha Harrabi,  Maher KHARRAT, Mansour SOUISSI and Abdel AITOUCHE | *PID4622–REC* |

**Session S7: ThuB3:** *Networks and Electrical Machines  (NEM) & Power Electronics and Control  (PEC)*

**Presidents:  Hafedh ABID & Moez ALLOUCHE**

| 15h00–15h20 | **PSpice and Simulink co-simulation for diode and AC-DC converter using SLPS interface software**<br>Wasma HANINI and Moez AYADI | *PID4552–PEC* |

| 15h20–15h40 | **Impact of the modulation technique on overvoltage at the terminals of the induction machine fed by a voltage inverter**<br>Henda BOUYAHI, Khaled BEN SMIDA and Adel KHEDHER | *PID4561–PEC* |

| 15h40–16h00 | **Electric appliance type detection: Approach for estimating residential energy consumption**<br>Marwa HAMDI, Hassani MESSAOUD, Nasreddine BOUGUILA and Larbi CHRIFI-ALAOUI | *PID4599–PEC* |

| 16h00–16h20 | **Improved mobile base station model for satisfying delay and energy constraints in wireless sensor networks**<br>Mehdi ACHOUR and Jamel BELHAJ TAHER | *PID4534–NEM* |

| 16h20–16h40 | Inter-Turn Short-Circuit Fault Detection in the Vectorial Control PMSM Drive<br>Fatma SDIRI, Yemna BENSALEM, Hafedh TRABELSI and Mohamed Naceur ABDELKRIM | **PID4620–NEM** |
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| 16h40–17h00 | Study And Simulation Of Three-Phase Seven-Level Packed U Cells Inverter<br>Alaeddine BEN ZID, Abdelkarim AOUITI and Faouzi BACHA | **PID4632–NEM** |
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| 17h00–17h20 | Fusion of ANN and SVM Classifiers for Network Attack Detection<br>Takwa OMRANI, Adel DALLALI, Belgacem Chibani RHAIMI and Jaouhar FATTAHI | **PID4651–NEM** |
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### Session S8: ThuB4: *Signal and Image Processing (SIP)*

**Presidents: Abdellatif MTIBAA & Amer ZEREK**

| 15h00–15h20 | A New Gases Identification Method Based on Noise Spectroscopy Using Metal-Oxide Gas Sensors<br>Basma MESSAOUD, Sami GOMRI, Abdennaceur KACHOURI, Jean-Luc SEGUIN, Thierry CONTARET, Tomas FIORIDO and Khalifa AGUIR | **PID4574–SIP** |
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| 15h20–15h40 | Suspicious behavior detection based on DECOC classifier<br>Mossaad BEN AYED and Mohamed ABID | **PID4577–SIP** |
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| 15h40–16h00 | Distributed OS-CFAR System Optimization by using Particle Swarm technique<br>Abdeldjabar SEKSAF and Latifa ABDOU | **PID4588–SIP** |
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| 16h00–16h20 | FPGA-Based Implementation of TZ Search Algorithm for H.265/HEVC Standard<br>Rahma HADDAR, Asma CHAARI, Hassan KIBEYA and Nouri MASMOUDI | **PID4598–SIP** |
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| 16h20–16h40 | An MR brain images classification technique via the Gaussian Radial Basis Kernel and SVM<br>Syrine NEFFATI and Okba TAOUALI | **PID4607–SIP** |
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| 16h40–17h00 | Signal Coverage Assessment and Analysis of Instrument landing system Equipment<br>Huan LIN, QingDong LI and CongPei LAI | **PID4406–SIP** |
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| 17h00–17h20 | ECG Signal Parameters Extraction Using Intelligent Adaptive Algorithm<br>**Sana KTATA, Seifallah TROUDI, Salem RAHMANI and Kamal AL-HADDAD** | *PID4646–SIP* |

## Friday, December 22, 2017

**Plenary Session SP2**

**Presidents: Driss MEHDI & Horst SCHULTE**

| 08h30–09h30 | Challenges on Fault Tolerant Control based on LPV or TS fuzzy models<br>**Prof. Abdelouhab AITOUCHE, CRIStAL, Research Center in Computer Science, Signal and Automatic of Lille, University Lille 1, France** | *STA'2017–SP2* |

**Session S09 : FriA1:** *Automation and Supervision Systems* (*ASS*)

**Presidents: Abdellatif MTIBAA & Hana GHORBEL**

| 09h30–09h50 | Neutral system with variable time- delay: Stability Analysis and diagnosis<br>**Marwa BETTAHER, Aïcha ELHSOUMI and Saloua Bel Hadj Ali NAOUI** | *PID4369–ASS* |

| 09h50–10h10 | Implementation of remote control for time delay systems based on adaptive and internal model approaches<br>**Olfa YAHYA, Saida BEDOUI and Kamel ABDERRAHIM** | *PID4618–ASS* |

| 10h10–10h30 | Cascade Temperature Control of an Automotive Turbocharger Hot-Gas Test-Stand<br>**Benjamin ATTARD and Mario FARRUGIA** | *PID4476–ASS* |

**Session S10: FriA2:** *Mechatronics and Robotics Systems* (*MRS*)

**Presidents: Neila MEZGHANNI & Mourad ELLOUMI**

| 09h30–09h50 | Experimental Investigation on Automotive Valve Jump/Bounce Detection<br>**Jean Paul FARRUGIA, Daniel BUSUTTIL, Jean Paul AZZOPARDI and Mario FARRUGIA** | *PID4506–MRS* |

| 09h50–10h10 | **Comparison between ultra-local model and Auto-tuning PID controls strategies applied to the redundant manipulator robot for several inputs** <br> Sameh ZRIBI, Wissem BOUSSETTA, Hatem TLIJANI, Jilani KNANI and Vicenç PUIG | *PID4564–MRS* |
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| 10h10–10h30 | **Localization of a mobile robot based on a particle filter approach** <br> Takoua GRAMI and ALI Sghaier TLILI | *PID4630–MRS* |
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**Session S11: FriA3:** *Modeling of Engineering Systems (MES)*

**Presidents: Maher KHARRAT & Mansour SOUISSI**

| 09h30–09h50 | **Nonlinear Modeling Impedance Electrochemical of PEM Fuel Cell** <br> Mohamed Selmene BEN YAHIA, Wahib ANDARI, Hatem ALLEGUI and Abdelkader MAMI | *PID4407–MES* |
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| 09h50–10h10 | **Structural and Parametric Identification of Linear Systems With Delay or a Slow Initial Onset** <br> Safa MARAOUI, Abdelkader KRIFA and Kais BOUZRARA | *PID4478–MES* |
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| 10h10–11h30 | **Acoustic impact Assessment for the wind farm; using ISO 9613-2 Standard Method** <br> Miloud BENMEDJAHED and Rachid MAOUEDJ | *PID4596–MES* |
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**Session S12: FriA4:** *Control of Robotics Systems (CRS)*

**Presidents: Chokri REKIK & Karim DAHECH**

| 09h30–09h50 | **Multi-Robot navigation in an environment containing moving target based on hybrid approach** <br> Dorra AYEDI, Maissa BOUJELBEN and Chokri REKIK | *PID4580–CRS* |
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| 09h50–10h10 | **Multisensor Data Fusion for Electrical Wheelchair Localization using Extended Kalman Filter** <br> Khaoula MAATOUG, Malek NJAH and Mohamed JALLOULI | *PID4643–CRS* |
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| 10h10–10h30 | **Navigation and trajectory tracking of mobile robot based on kinematic PI controller** <br> Donia BEN HALIMA ABID, Najah YOUSFI | *PID4639–CRS* |
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| | ALLAGUI and Nabil DERBEL | |
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*Coffee break : 10h30-10h50*

**Session S13: FriB1:** *Automatic Control Systems (ACS) & Advanced Control Systems Engineering (ACSE)*

**Presidents:** **Abdelwaheb AITOUCHE & Tarak MAATOUG**

| 10h50–11h10 | **Robust LPV Control Applied to a Personal Pendulum Vehicle**<br>Seif-El-Islam HASSENI and Latifa ABDOU | *PID4475–ACS* |
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| 11h10–11h30 | **PI Controller Design for Linear Systems With Delay or a Slow Initial Onset**<br>Safa MARAOUI, Abdelkader KRIFA and Kais BOUZRARA | *PID4479–ACS* |
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| 11h30–11h50 | **Output Regulation of Nonlinear Systems with FOPI Controller based on Two Time-Scale Separation**<br>Mohamed Lazhar WARDI, Messaoud AMAIRI and Mohamed Naceur ABDELKRIM | *PID4528–ACS* |
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| 11h50–12h10 | **Recovery of linear local models of a system**<br>Khaled DAHMANI, Khaled ELLEUCH and Fathi FOURATI | *PID4551–ACSE* |
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| 12h10–12h30 | **Simultaneous Fault and State Estimation For Linear Discrete-time Stochastic Systems**<br>Faten GANNOUNI and Fayçal BEN HMIDA | *PID4638–ACSE* |
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**Session S14: FriB2:** *Smart Grid Power System (SGPS)*

**Presidents:** **Ahmed FAKHFAKH & Hafedh TRABELSI**

| 10h50–11h10 | **New approach and layers designs of sharing energy system for interconnected microgrid**<br>Maroua BEN BELGACEM, Bilel GASSARA and Ahmed FAKHFAKH | *PID4490–SGPS* |
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| 11h10–11h30 | **Diagnosis of sensor grids in a building system using BRIDGE approach** | *PID4533–SGPS* |
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| | Houda NAJEH, Mahendra Pratap SINGH, Karim CHABIR, Stéphane PLOIX and Mohamed Naceur ABDELKRIM | |

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| 11h30–11h50 | **Modeling of a Single-Phase Grid-Connected Photovoltaic System**<br>Sabri RHILI, Hafedh TRABELSI and Jihed HMAD | *PID4560–SGPS* |

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| 11h50–12h10 | **A Methodology for thermal modelling and predictive control for building heating systems**<br>Maha MASTOURI and Naserddine BOUGUILA | *PID4616–SGPS* |

**Session S15: FriB3:** *Circuits, Electronics and Micro-electronics (CEM)*

**Presidents:** Mounir SAMET & Mohamed MASMOUDI

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| 10h50–11h10 | **Design of 10.6 GHZ low phase noise LC-Voltage controlled oscillator in 0.18µm CMOS Technology**<br>Hanen SAOUDI, Mohamed DHIEB, Hamadi GHARIANI and Mongi LAHIANI | *PID4468–CEM* |

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| 11h10–11h30 | **A 5.2 GHz High Gain High Isolation Double Balanced Gilbert Cell down Conversion Mixer in TSMC 180nm CMOS Technology for WLAN application**<br>Hanen SAOUDI, Mohamed DHIEB, Hamadi GHARIANI and Mongi LAHIANI | *PID4530–CEM* |

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| 11h30–11h50 | **SIMO High Frequency Active Universal Current Mode Filter with Independent Control of Pole Frequency and Quality Factor**<br>Thouraya ETTAGHZOUTI, Néjib HASSEN, Karima GARRADHI and Kamel BESBES | *PID4591–CEM* |

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| 11h50–12h10 | **Low-Voltage Low-Power Four-Quadrant Analog Multiplier In Current-Mode**<br>Imen ALOUI, Néjib HASSEN and Kamel BESBES | *PID4603–CEM* |

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| 12h10–12h30 | **Performance Evaluation of RPL Objective Functions for multi-Sink**<br>Ibtissem ZAATOURI, Nouha ALYAOUI, Awatef Benfradj GUILOUFI and Abdennaceur KACHOURI | *PID4584–TCE* |

**Session S16: FriB4:** *Control and Embedded System (CES) & Smart City Control (SCC)*

**Presidents:** Abderazek BEN ABDALLAH & Nouri MASMOUDI

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| **10h50–11h10** | **Study and design of a controlled oscillator for an embedded system to measure the complex impedance of a PEM fuel cell**<br>Arafet BOUAICHA, Ahmed TRABELSI, Hatem ALLAGUI, El-Hassane AGLZIM, Abdelkader MAMI and Amar ROUANE | *PID4592–CES* |

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| **11h10–11h30** | **A Low-overhead Fault-tolerant Algorithm for TSV-based Interconnects in 3D-IC Systems**<br>Abderazek BEN ABDALLAH, Khanh N. DANG and Yuichi OKUYAMAI | *PID4611–CES* |

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| **11h30–11h50** | **FPGA Implementation of Matrix-Vector Multiplication Using Xilinx System Generator**<br>Intissar SAYAHI, Mohsen MACHHOUT and Rached TOURKI | *PID4627–CES* |

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| **11h50–12h10** | **Hadoop based Optimized Mining of Distributed Association Rules from Big Data**<br>Marwa BOURAOUI, Ines BOUZOUITA and Amel Grissa TOUZI | *PID4654–CES* |

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| **12h10–12h30** | **Optimal appliances scheduling for demand response strategy in smart home**<br>Siwar KHEMAKHEM, Mouna REKIK and Lotfi KRICHEN | *PID4593–SCC* |

*Lunch:* **12h30–15h00**

**Session S17: FriC1:** *Renewable Energy Conversion (REC)*

**Presidents: Mansour SOUISSI & Naziha HARRABI**

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| **15h00–15h20** | **Closed Loop for Regulation of AC Voltages of Cascaded PV Generator-Boost Converter-Five Levels NPC Inverter**<br>Thameur ABDELKRIM, Abdelkader LAKHDARI, Abdelhalim BORNI, Karima BENAMRANE, Noureddine BOUARROUDJ and B. BENLAHBIB | *PID4473–REC* |

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| **15h20–15h40** | **The Rotor-Flux-Oriented Control of the Induction Machine Used the Multicarrier Strategies for Multilevel NPC Inverter**<br>Waad RTIBI, Lotfi M'BARKI and Moez AYADI | *PID4480–REC* |

| 15h40–16h00 | Developping an MPPT Controller for an Off-Grid photovoltaic Generator Feeding a 3 Phased Asynchronous Machine<br><br>Chaima RKIAI, Houssem CHAOUALI, Dhafer MEZGHANI and Abdelkader MAMI | *PID4496–REC* |
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| 16h00–16h20 | Bond Graph modeling and simulation of Buck-Boost Converter for PEM Fuel Cell application<br><br>Wafa BEN SALEM, Dhia MZOUGHI and Abdelkader MAMI | *PID4529–REC* |
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| 16h20–16h40 | Sizing optimization of a stand-alone photovoltaic system using genetic algorithm<br><br>Safa FEZAI and Jamel BELHADJ | *PID4557–REC* |
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| 16h40–17h00 | Dynamic simulation of adsorber for solar adsorption refrigeration system<br><br>Hamou SOUALMI, Rachid KHELFAOUI, Brahimi DENNAI and Zine SAADI | *PID4576–REC* |
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| 17h00–17h20 | Evaluation of PV Module Failures in Field-Aged after Long-term Exposure under Desert Climate<br><br>Ahmed BOURAIOU, Messaoud HAMOUDA, Ammar NEÇAIBIA, Mohammed MOSTEFAOUI, Rachid DABOU and Sahouane NORDINE | *PID4590–REC* |
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**Session S18: FriC2:** *Control, Automation and Diagnosis (CAD)*

**Presidents:  Donia BEN HALIMA & Sinda ALOUI**

| 15h00–15h20 | Fault Diagnosis and Accommodation For Singularly Perturbed Time-delayed Systems: Descriptor Approach<br><br>Zina BOUGATEF, Nouceyba ABDELKRIM, Adel TELLILI and Mohamed Naceur ABDELKRIM | *PID4455–CAD* |
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| 15h20–15h40 | Security Issues in Controller Area Networks in Automobiles<br><br>Robert BUTTIGIEG, Mario FARRUGIA and Clyde MELI | *PID4481–CAD* |
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| 15h40–16h00 | Induction machine faults diagnosis by statistical neural networks with selection variables based  on Principal component analysis<br><br>Sameh MARMOUCH, Tarek AROUI and Yassine KOUBAA | *PID4516–CAD* |
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| **16h00–16h20** | **Interval Type-2 Takagi-Sugeno Fuzzy Model Based Control Design For Nonlinear Stochastic System**<br>Imen MAALEJ, Donia BEN HALIMA and Chokri REKIK | *PID4609–CAD* |

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| **16h20–16h40** | **Modeling and Fuzzy Logic Controller of humidity inside an greenhouse**<br>Amira LABIDI,  Amine CHOUCHAINE and Abdelkader MAMI | *PID4615–CAD* |

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| **16h40–17h00** | **Open-Switch Fault Detection In Three-Phase Symmetrical Cascaded Multilevel Inverter Using Conducted Disturbances**<br>Ibtissem ABARI, Mahmoud HAMOUDA and Jaleleddine BEN HADJ SLAMA | *PID4636–CAD* |

**Session S19: FriC3:**  *Signal and Image Processing (SIP)*

**Presidents:  Mohamed ABDELMOULA & Abdellatif MTIBAA**

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| **15h00–15h20** | **A Novel Method for Optimising the Ratio of Image Compression**<br>Saleh ABOUKHRES and Amer ZEREK | *PID4320–SIP* |

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| **15h20–15h40** | **3D Gabor-Edge Filters Applied to Face Depth Images**<br>Ghada TORKHANI, Anis LADGHAM and Anis SAKLY | *PID4518–SIP* |

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| **15h40–16h00** | **An Outlier Detection/Rejection Method for Single-Trial EEG Signals Classification**<br>Rafik DJEMILI, Aissa BELMEGUENAI, Salim OUCHTATI and Salah DJELLEL | *PID4521–SIP* |

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| **16h00–16h20** | **Blind equalization of OFDM systems based an Optimal Bounding Ellipsoid under different channels**<br>Ali MOUSSA, Mathieu POULIQUEN, Miloud FRIKEL, Saida BEDOUI, Kamel ABDERRAHIM and Mohammed M'SAAD | *PID4583–SIP* |

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| **16h20–16h40** | **Neuronal network and correlation measurement for vehicles detection**<br>Amine MAZOUZI and Mohamed Faouzi BELBACHIR | *PID4443–SIP* |

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| **16h40–17h00** | **Defect detection in gearbox systems based on the instantaneous phase of signals**<br>Azeddine RATNI, Chemseddine RAHMOUNE  and | *PID4487–SIP* |

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**Session S20: FriC4:** *Intelligent Systems Control (ISC)*

**Presidents:** Fathi FOURATI & Mariem GHAMGUI

| 15h00–15h20 | Neuro-Fuzzy methods coupled to operational PID, to improve the flight parameters of an drone<br>Brahim SELLALI and Abderrazek ALLALI | *PID4527–ISC* |
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| 15h20–15h40 | Artificial Intelligence-based control for torque ripple minimization in switched reluctance motor drives<br>Mohamed YAICH and Moez GHARIANI | *PID4541–ISC* |
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| 15h40–16h00 | Study comparative between two approaches with controls in the nonlinear system<br>Samia CHARFEDDINE and Lassaad SBITA | *PID4543–ISC* |
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| 16h00–16h20 | Fuzzy logic Controller for Autonomous Vehicle Path Tracking<br>Sami ALLOU, Youcef ZENNIR and Aissa BELMEGUENAI | *PID4642–ISC* |
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| 16h20–16h40 | Improvement on Power Transformer Protection using Matlab Simulink and Fuzzy Logic<br>Vishavdeep JINDAL, Lakhvinder SINGH, Jashandeep SINGH and Preeti KHURAN | *PID4362–ISC* |
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| 16h40–17h00 | An optimal reduction of the gradual rules<br>Maya ASSEUM, Allel HADJ ALI and Rassoul IDIR | *PID4550–ISC* |
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## Saturday, December 23, 2017

**Session S21: SatA1:** *Control of Robotics Systems* (*CRS*)

**Presidents:** Hafedh ABID & Maher KHARRAT

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| 08h30–08h50 | **A Fault Tolerant Control for Robot Manipulators against Actuator Fault**<br>Aymen ELGHOUL, Adel BOUZIRI, Adel TELLILI and Mohamed Naceur ABDELKRIM | **PID4274–CRS** |

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| 08h50–09h10 | **Optimal Trajectory Generation and Flatness Tracking Control for a Mobile Robot**<br>Amine ABADI, Hassen MEKKI, Anis BEN HADJ BRAHIM, Adnen EL AMRAOUI and Nacim RAMDANI | **PID4491–CRS** |

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| 09h10–09h30 | **A novel frictional force control of a wheeled robot**<br>Radwen BAHRI, Rahma BOUCETTA and Saloua BEL HADJ ALI NAOUI | **PID4542–CRS** |

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| 09h30–09h50 | **Decentralized Model Reference Adaptive Control for interconnected robotic systems**<br>Rabeb BEN AMOR and Salwa ELLOUMI | **PID4545–CRS** |

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| 09h50–10h10 | **Linear SVM Classifier Based HOG Car Detection**<br>Sana BOUGHARRIOU, Fayçal HAMDAOUI and Abdellatif MTIBAA | **PID4568–CRS** |

**Session S22: SatA2:** *Sliding Mode Control (SMC)*

**Presidents: Ahmed Saïd NOURI & Assil AYADI**

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| 08h30–08h50 | **On the use of differentiator in sliding mode control Of uncertain robot manipulator**<br>Fatma MASSAOUDI, Dorsaf ELLEUCH and Tarak DAMAK | **PID4493–SMC** |

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| 08h50–09h10 | **Delayed Sliding Surface For Time Delay System**<br>Yassine BENYAZID, Driss MEHDI and Ahmed Saïd NOURI | **PID4499–SMC** |

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| 09h10–09h30 | **Optimal sliding mode control for a class of uncertain discrete-time systems**<br>Wafa BOUKADIDA, Anouar BENAMOR and Hassani MESSAOUD | **PID4513–SMC** |

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| 09h30–09h50 | **Synergetic Control for three-tanks system: a Comparison with the Sliding Mode control**<br>Radhia ETTOUIL, Karim CHABIR and Mohamed Naceur ABDELKRIM | **PID4539–SMC** |

| 09h50–10h10 | Comparative analysis of first order and second order discret sliding mode control for non-minimum phase systems<br><br>Laila MOKHTAR, Houda BEN MANSOUR and Ahmed Said NOURI | *PID4555–SMC* |
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**Session S23: SatA3**: *Fractional-Order Systems and Controls (FOSC)*

**Presidents:** Mohamed CHAABANE & Omar NAIFAR

| 08h30–08h50 | Orthotopic approach of Set-membership Parameters Estimation for LPV system using Fractional models<br><br>Saif Eddine HAMDI, Messaoud AMAIRI and Mohamed AOUN | *PID4469–FOSC* |
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| 08h50–09h10 | Design of a MRAC-Based Fractional order PI$\lambda$D$\mu$ Regulator for DC Motor Speed Control<br><br>Bouziane KEZIZ, Samir LADACI and Abdelbaki DJOUAMBI | *PID4569–FOSC* |
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| 09h10–09h30 | A reduced-order Unknown Input Observer design for a class of nonlinear fractional-order systems<br><br>Assaad JMAL, Omar NAIFAR, Abdellatif BEN MAKHLOUF and Nabil DERBEL | *PID4579–FOSC* |
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| 09h30–09h50 | Performance Evaluation of fractional order controller for Induction Machine control and comparative study between FOC PI & FOC FOPI<br><br>Rahma HAMMAMI, Imène Ben AMEUR and Khaled JELASSI | *PID4581–FOSC* |
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| 09h50–10h10 | Comparative study of some fractional PI controllers for first order plus time delay systems<br><br>Amina BEN HMED, Messaoud AMAIRI, Mohamed AOUN and  Saif Eddine HAMDI | *PID4644–FOSC* |
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**Session S24: SatA4**: *Renewable Energy Conversion (REC)*

**Presidents:** Lotfi KRICHEN & Abdelmajid OUALHA

| 08h30–08h50 | Impact of dust accumulation on PV panel performance in the Saharan region<br><br>Abderrezzaq ZIANE, Mohammed MOSTEFAOUI, Ammar NEÇAIBIA, Nordine SAHOUANE, Rachid DABOU and Ahmed BOURAIOU | *PID4531–REC* |
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| 08h50–09h10 | Impact of partial shading and PV array power on the performance of grid connected PV station<br><br>Rachid DABOU, Farid BOUCHAFAA, Nordine | *PID4538–REC* |
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| | SAHOUANE, Ammar NEÇAIBIA, Mohammed MOSTEFAOUI, Abdelkrim ROUABHIA, Abderrezzaq ZIANE and Ahmed BOURAIOU | |

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| **09h10–09h30** | **Comparative study between three control technics for photovoltaic voltage regulation** Asma MLAYAH and Adel KHEDHER | *PID4602–REC* |

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| **09h30–09h50** | **Real Time Implementation of Perturb and Observe Algorithm and PI Controller for DC/DC Converter** Abdelhamid BARHOUMI and Radhouane LAAJIMI | *PID4605–REC* |

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| **09h50–10h10** | **Modeling and Control of a Photovoltaic Generator Connected to a Medium Voltage Tunisian Feeder** Amal JENNI, Jamel BELHADJ, Monji CHAMMAKHI and Radhouane DAKHLI | *PID4608–REC* |

**Coffee break: 10h10-10h30**

**Session S25: SatB1:** *Automatic Control Systems (ACS)*

**Presidents: Samira KAMOUN & Dorsaf ELLEUCH**

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| **10h30–10h50** | **Stability Bound Analysis of Slow Sampling Discrete-Time Singularly Perturbed Systems with Time-Delay** Rakia ABDELJAWAD, Nesrine BAHRI and Majda LTAIEF | *PID4441–ACS* |

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| **10h50–11h10** | **Synthesis of decentralized optimal control of non-linear interconnected systems with block pulse functions Application to a double-parallel inverted pendulum** Soumaya GHALI, Ines SANSA Aousgi and Salwa ELLOUMI | *PID4544–ACS* |

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| **11h10–11h30** | **Model-free Control of LTI systems: An Algebraic State Estimation Approach** Sonia MAALEJ, Alexandre KRUSZEWSKI and Lotfi BELKOURA | *PID4610–ACS* |

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| **11h30–11h50** | **Parametric and State Estimation For Nonlinear Polynomial systems** Afef Marai GHANMI, Sofien HAJJI and Samira KAMOUN | *PID4612–ACS* |

**Session S26: SatB2:** *Tele Communications Engineering (TCE)*

**Presidents: Moez ALLOUCHE & Amer ZAREK**

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| 10h30–10h50 | **Design of patch array antennas for future 5G applications**<br>Ilhem GHARBI, Rim BARRAK, Mourad MENIF and Hedi RAGAD | *PID4613–TCE* |
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| 10h50–11h10 | **Statistical Interference Description in 4G Mobile Communications Networks**<br>Selma SBIT, Mohamed Bechir DADI and Belgacem Chibani RHAIMI | *PID4640–TCE* |
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| 11h10–11h30 | **Evaluation the QoS parameters in differents SDN architectures using Omnet 4.6++**<br>Fatima LAASSIRI, Mohamed MOUGHIT and Noureddine IDBOUFKER | *PID4656–TCE* |
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| 11h30–11h50 | **New chaotic encryption algorithm for WSN and implementation with sensors AS-XM1000**<br>Tarek FARAH and Safya BELGHITH | *PID4641–TCE* |
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| 11h50–12h10 | **A Roadmap for SDN-based Network Management: Al-Zaytoonah University of Jordan Case**<br>Yousef JARADAT, Ismael JANNOUD, Mohammad MASOUD and Wejdan ABU ELHAIJA | *PID4536–TCE* |
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**Special Session S27: SatB3:** *Control of Electrical Vehicles (CEV)*

**Presidents:  Badreddine LOUHICHI & Moncef TRIKI**

| 10h30–10h50 | **Comparaison of fuel consumption and emissions of two hybrid electric vehicle configurations**<br>Rihab ABDELMOULA, Naourez BEN HADJ, Mohamed CHAIEB and Rafik NEJI | *PID4503–CEV* |
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| 10h50–11h10 | **Steady-State Analysis of a Variable Speed Traction System Using DFI-Motor**<br>Mouna ZERZERI, Faiçal JALLALI and Adel KHEDHER | *PID4565–CEV* |
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| 11h10–11h30 | **Control of five-phase PMSM for electric vehicle application based on drive cycle analysis**<br>Abir HEZZI, Seifeddine BEN ELGHALI, Yemna BEN SALEM and Mohamed Naceur ABDELKRIM | *PID4619–CEV* |
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| 11h30–11h50 | **Improvement of Energy management Algorithm for Fuel Cell Electrical Vehicle with Fuzzy Logic**<br>Hajer MARZOUGUI, Ameni KADRI, Mansour AMARI and Faouzi BACHA | *PID4631–CEV* |
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### Session S28: SatB4: *Circuits, Electronics and Micro-electronics (CEM)*

**Presidents:** Ahmed FAKHFAKH & Hekmet SAMET

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| **10h30–10h50** | **Impact of graded Ge-content in improving the Si/SiGe heterojunction-based solar cell efficiency** <br> **K. KACHA, H. FERHATI, Faycal DJEFFAL and D. ARAR** | *PID4553–CEM* |

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| **10h30–10h50** | **Impact of graded Ge-content in improving the Si/SiGe heterojunction-based solar cell efficiency** <br> **Afef SALHI, Yacine MORESLY, Fahmi GHOZZI and Ahmed FAKHFAKH** | *PID4559–CEM* |

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| **10h50–11h10** | **Maximizing Reliability of Heterogeneous Distributed System under Task Allocation Problem using an Enhanced Discrete Cuckoo Search Algorithm** <br> **Farid ABBACHE and Hamoudi KALLA** | *PID4471–CEM* |

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| **11h10–11h30** | **Electromagnetic time reversal for radiating source identification in time domain** <br> **Hedia SASSIA, Bessem ZITOUNA, Jaleleddine BEN HADJ SLAMA and Lionel PICHON** | *PID4633–CEM* |

*Conference close: 11h50-12h30*

*Lunch:* **12h30–14h00**

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