Detailed Schedule DoCEIS'19

08:00 – 09:00   **Registration**

09:00 – 09:30   **Opening session**

09:30 –10:30   **Keynote 1**

Sustainable Cybernetic Manufacturing in the Era of Industry 4.0

Room Pablo Neruda 2

Lihui Wang

Professor and Chair of Sustainable Manufacturing

Department of Production Engineering

KTH Royal Institute of Technology

Stockholm, Sweden

10:30 – 11:00   **Coffee Break**

11:00 – 12:30   **Session A**

A1 – Collaborative Systems *(Room Pablo Neruda 1)*

Chairs: Ricardo Lopes Almeida and David Borges

- **A Model to Assess Collaboration Performance in a Collaboration Business Ecosystem;**
  Paula Graça, Luis M. Camarinha-Matos and Filipa Ferrada
- **Organizational Structure for Mass Collaboration and Learning;**
  Majid Zamiri and Luis M. Camarinha-Matos
- **Emerging Community Energy Ecosystems: Analysis of Organizational and Governance Structures of Selected Representative Cases;**
  Kankam Adu-Kankam and Luis M. Camarinha-Matos

A2 – Smart Environments *(Room Pablo Neruda 2)*

Chairs: José Lima de Oliveira and Ricardo Santos

- **Basis for a Design Methodology for Collaborative Cyber-Physical Systems;**
  Artem Nazarenko and Luis M. Camarinha-Matos
- **A Group Evacuation Method in Smart Buildings;**
  Qasim Khalid, Alberto Fernandez, Marin Lujak and Arnaud Doniec
- **Optimized Electrification of Subsea Oil & Gas Infrastructures based in Genetic Algorithms;**
  Tiago A. Antunes, Rui Castro, P. J. Santos, A. J. Pires and Matthias Foehr

12:30 – 13:45	Lunch

13:45 – 15:00	Horizontal Topic 1

Enhancing the PhD process: personal and professional development of the PhD candidate. *(Room Pablo Neruda 2)*

Patrícia Pinto

Head of NOVA Doctoral School; Invited Professor at NOVA Medical School

15:00 – 16:30	Session B

B1 – Collaboration and Resilient Systems *(Room Pablo Neruda 1)*

Chairs: Paula Graça and Fábio Lopes

- **Novel Approaches to Handle Disruptions in Business Ecosystems;**
  Javaneh Ramezani and Luis M. Camarinha-Matos
- **Proposing a Risk Management Model in Construction of Combined-cycle Power Plant Projects;**
  Shakib Zohrehvandi and Alexandra Tenera
- **voteChain: Community Based and Scalable Internet Voting Framework;**
  Ricardo Almeida, Luis M. Camarinha-Matos and Laura Ricci

B2 – Energy Markets *(Room Pablo Neruda 2)*

Chairs: José Lima de Oliveira and João Gião

- **Variable Generation Integration in Electricity Markets: A Systematic Analysis of Key European and American Markets;**
  Hugo Algarvio, Fernando Lopes and João Santana
- **A New Approach to Provide Sustainable Solutions for Residential Sector;**
  Ricardo Santos, João Matias and Antonio Abreu
- **Electric Vehicles Aggregation in Market Environment: A Stochastic Grid-To-Vehicle and Vehicle-To-Grid Management**
  Isaias Gomes, Rui Melicio and Victor Mendes

16:30 – 17:00	Coffee Break

17:00 – 18:30	Session T

BigDataOcean: exploiting oceans of data for wave power characterization *(Room Pablo Neruda 2)*

Rui Lopes

Invited Assistant Professor at FCT-NOVA and Researcher at CTS-UNINOVA

Nuno Amaro

Researcher at R&D NESTER

19:00 Welcome Reception

Day 2 – Thursday 9 May 2019

09:00 – 10:30	**Session C**

C1 – Water Monitoring Systems *(Room Pablo Neruda 1)*

Chairs: Ricardo Lopes Almeida and Isaias Gomes

- **Artificial Neural Networks Application to Support Plant Operation in the Wastewater Industry;**
  Ivan Pisa, Ramon Vilanova, José López Vicario, Antoni Morell and Ignacio Santin
- **Towards a Modern Water Monitoring Solution;**
  João Marques, Brígida Lopes, Carlos Ferreira, Henrique Pinho, Manuel Barros, Pedro Granchinho and Pedro Neves
- **Smart Cities: Non Destructive Approach for Water Leakage Detection;**
  Lucas Nunes Monteiro, Felipe Crispim da Rocha Salvagnini, Edinei Peres Legaspe, Sidney José Montebeller, Diolono José Dos Santos Filho, Fernando Deluno Garcia and Andréa Lucia Braga Vieira Rodrigues

C2 – Decision Systems *(Room Pablo Neruda 2)*

Chairs: Duarte Alemão and Rui A. Antunes

- **Terrain Classification Based on Wiener-Khinchin and EMD Algorithms from UAV Downwash-effect to Cooperate and Improve the Autonomous Navigation;**
  João Pedro Carvalho, Raúl Rato, Ricardo Mendonça, José Manuel Fonseca and André Mora
- **A Markov Process-based Approach for Reliability Evaluation of the Propulsion System in Multi-Rotor Drones;**
  Koorosh Aslansefat, Francisco Marques, Ricardo Mendonça and José Barata Oliveira
- **A New Approach for Crop Rotation Problem in Farming 4.0;**
  Bruno Santos de Miranda, Akebo Yamakami and Priscila Rampazzo

10:30 – 11:00	**Coffee Break**

11:00 – 12:00	**Keynote 2**

Digital Twins: path for better real-time decisions

Room Pablo Neruda 2

Américo Azevedo

Associate Professor with Aggregation at Faculty of Engineering of University of Porto (FEUP)

Head of CESE – Centre for Enterprise Systems Engineering at INESCTEC – Institute for Systems and Computer Engineering, Technology and Science

12:00 – 13:00	**Horizontal Topic 2**

GDPR (General Data Protection Regulation) Impact on Research

(Room Pablo Neruda 2)

Rodrigo Adão da Fonseca

Data Protection Office

NOVA University of Lisbon

13:00 – 14:15	Lunch

14:15 – 15:15	Horizontal Topic 3

PhD and Creativity *(Room Pablo Neruda 2)*

Sanaz Nikghadam

Post-Doc Researcher at CTS-UNINOVA

15:15 – 16:45	Session D

D1 – Optimization Systems *(Room Pablo Neruda 1)*

Chairs: José Lima de Oliveira and Humberto Queiroz

- **Application of Monte Carlo Methods in Probability-based Dynamic Line Rating Models;**
  Levente Rácz, Dávid Szabó, Bálint Németh and Gábor Göcsei
- **Theory of Constraints Thinking Processes on Operational Lean Programs;**
  Margarida Gaspar, Alexandra Tenera and Luis Cristovão
- **Dynamic Search Tree Growth Algorithm for Global Optimization;**
  Ivana Strumberger, Eva Tuba, Miodrag Zivkovic, Nebojsa Bacanin, Marko Becko and Milan Tuba

D2 – Power Systems *(Room Pablo Neruda 2)*

Chairs: João Pedro Carvalho and Amineh Mazandarani

- **Effect of Combined Stresses on the Electrical Properties of Low Voltage Nuclear Power Plant Cables;**
  Ramy Afia, Ehtasham Mustafa, Tamus Zoltán Ádám and Angel Asipuela
- **Thermal Degradation and Condition Monitoring of Low Voltage Power Cables in Nuclear Power Industry;**
  Ehtasham Mustafa, Ramy Afia, Tamus Zoltán Ádám and Angel Asipuela

- **Novel Design Converter for a 40kVA Interactive UPS Application based on Marx Modulator Concept;**
  Hiren Canacsinh, Miguel Chaves, Paulo Gamboa, Armando Cordeiro, Ricardo Luís, Ana Martins, Luís Encarnação, Fernando Pereira, José Silva, Nuno Santos and Celso Pestana

16:45 – 17:00	Coffee Break

17:00 – 18:45	Panel Session

"My Research and Society"

(Room Pablo Neruda 2)

João Leite,

Associate Professor at Computer Science Department,

FCT-NOVA;

António Pedro Mano,

Assistant Professor at Environmental Sciences and Engineering Department,

FCT-NOVA

Ruben Costa,

Researcher at CTS – UNINOVA

Centre for Technology and Systems

Sofia Simões,

Researcher at CENSE –

Centre for Environmental and Sustainability Research

Collen Masilo,

PhD Student/Researcher;

Nazanin Vafaei,

PhD Student/Researcher

19:30	Conference Dinner

Day 3 – Friday 10 May 2019

*See also detailed program for **YEF-ECE 2019** in following sections.*

09:30 – 11:00	Session E

Assistive Systems *(Room Pablo Neruda 1)*

Chairs: Ricardo Lopes Almeida and Arthem Nazarenko

- **Intelligent HCI Device for Assistive Technology;**

  Rui Azevedo Antunes, Luís Brito Palma, Hermínio Duarte-Ramos and Paulo Gil

- **Real-Time Human Body Pose Estimation for in-Car Depth Images;**

  Helena Torres, Bruno Oliveira, Sandro Queirós, João Borges, Nélson Rodrigues, Victor Coelho, Johannes Pallauf, José Brito, José Mendes and Jaime Fonseca

- **Treatment of Ventricular Assist Device Test Bench Data for Prediction of Failures and Improvement of Inherent Reliability;**

  Jeferson Dias, Jonatas Cerqueira Dias, Rodrigo Lima Stoeterau, Paulo Miyagi and Diolino J. Santos Filho

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Y1 – Process Systems 1 *(Room Pablo Neruda 2)*

Chair: Rodolfo Oliveira

- **An Application of Ethereum Smart Contracts and IoT to logistics;**

  Leonor Augusto, Ruben Costa, José Ferreira and Ricardo Jardim-Gonçalves

- **Designing Convolutional Neural Network Architecture by the Firefly Algorithm;**

  Ivana Strumberger, Eva Tuba, Nebojsa Bacanin, Miodrag Zivkovic, Marko Beko and Milan Tuba

- **An approach to provide efficient choices to a household consumer;**

  Ricardo Santos, João Matias and António Abreu

- **Identification and Ranking of Effective Criteria in Evaluating Resilient IT Project Contractors;**

  Javaneh Ramezani, Mahmood Sadraei and Mahdi Nasrollahi

- **Design and Implementation of a Monitoring and Remote-Control System for Energy Consumption Management Purposes;**

  Juan Lucas Sánchez and Enrique Romero-Cadaval

Y2 – Control Issues *(Room Pablo Neruda 3)*

Chair: Rui Neves da Silva

- **CBPTracker – a web tool to detect and track Solar features from SDO/AIA images;**

  Ricardo Pires, Ivan Dorotovic, Rita Ribeiro, José Manuel Fonseca, Ján Rybák and André Mora

- **Active wheel speed control to avoid lifting the swingarms in rocker-bogie suspension;**

  Piotr Tomaszuk, Aneta Łukowska, Maciej Rećko, Kazimierz Dzierżek and Paweł Straszyński

- **The Integrated Controller Dedicated to Multi-Coil Electromagnetic Launcher for Micro Class Unmanned Aerial Vehicles;**

  Barbara Kuc, Mirosław Kondratiuk, Leszek Ambroziak and Kazimierz Dzierżek

- **A Low-Cost Sun Tracking System Based on Image Processing and a Robot Arm;**

  João Pombas and João Murta-Pina

- **Position control in simulated airplanes;**
  Luis Alves, Vasco Brito, Luis Brito Palma and Paulo Gil

11:00 – 11:30	Coffee Break

11:30 – 12:30	Keynote 3

Integration of Photovoltaic Electric Energy Generation to Smart Grids

Room Pablo Neruda 2

Enrique Romero-Cadaval

Professor at University of Extremadura

Coordinator of the Energy Group for the Intelligent Specialization (RIS3) of the Extremadura Region,

Badajoz, Spain

12:30 – 13:45	Lunch

13:45 – 15:15	Session F

F1 – Energy Control *(Room Pablo Neruda 1)*

Chairs: KanKam Adu-KanKam and Collen Masilo
- **Integrated System for Traction and Battery Charging of Electric Vehicles with Universal Interface to the Power Grid;**
  Tiago J. C. Sousa, Vitor Monteiro and João L. Anfonso
- **Auxiliary Digital Control Prototype for Capacitor Banks;**
  Patrícia Nunes, Mafalda Seixas, Rui Melício and Victor Mendes
- **Modelling and Simulation of PV Panel under Different Internal and Environmental Conditions with Non-Constant Load**
  Masud Rana Rashel, Rui Melício, Mouhaydine Tlemçani and Teresa Gonçalves

F2 – Communication Systems *(Room Pablo Neruda 2)*

Chairs: Javaneh Ramezani and Majid Zamiri
- **Energy Efficient Massive MIMO Point-to-Point Communications with Physical Layer Security: BPSK vs QPSK Decomposition;**
  David Borges, Pedro Viegas, Paulo Montezuma and Rui Dinis
- **V-GRADIENT: A Density-Aware Geocast Routing Protocol for Vehicular Delay-Tolerant Networks;**
  Henrique Nascimento and Paulo Rogério Pereira
- **Simulation of an Early Warning Fire System;**
  Paulo Lourenço, Alessandro Fantoni and Manuela Vieira

Y3 – Process Systems 2 *(Room Pablo Neruda 3)*

Chair: Anabela Pronto
- **Analysing Public Transport data through the use of Big Data technologies for urban mobility;**

Hugo André dos Santos Antunes, Ruben Costa, Paulo Figueiras, Joel Teixeira and Ricardo Gonçalves

- **A Survey of IOPT-Flow for GALS System Development;**
  João Almeida, Filipe Moutinho and Rogério Campos-Rebelo
- **Jamming for Unauthorized UAV Operations Communications Link;**
  António Brito, Pedro Sebastião and Nuno Souto
- **Self-configurable Wireless Automatic Irrigation System;**
  César Penha, Rogério Campos-Rebelo and João Paulo Barros
- **A Novel Procedure for Chipless RFID Tags Design;**
  Bernardo Lopes and João Matos
- **SmartFloor for a more comfortable and safer life;**
  Karol Haraburda, Jakub Czygier and Maciej Rećko

15:15 – 15:45	**Coffee Break**

15:45 – 17:25	**Session G**

Smart Manufacturing *(Room Pablo Neruda 2)*

Chairs: Paulo Lourenço and Carolina Oliveira
- **Production Scheduling Requirements to Smart Manufacturing;**
  Duarte Alemão, André Dionísio Rocha and José Barata
- **Modular Components in the Industry Using vf-OS Components;**
  João Gião, João Sarraipa and Ricardo Jardim Gonçalves
- **Big Data on Machine to Machine Integration's Requirement Analysis within Industry 4.0**
  Felipe Alcarpe Coda, Rafael Machado de Salles, Henrique Abrantes Vitoi, Macosiris Amorim de Oliveira Pessoa, Diolino José dos Santos Filho, Fabrício Juqueira and Paulo Eigi Miyagi

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Y4 – Power Electronics and Energy *(Room Pablo Neruda 1)*

Chair: Pedro Pereira
- **Measurements of electromechanical forces in superconducting fault current limiters tapes under short circuit conditions;**
  Ricardo Mateus, Nuno Vilhena, Anabela Pronto and Rui Igreja
- **Characterization and Optimization of an inductive DC-DC Converter for Ultra-Low Power Energy Harvesting;**
  Duarte Batista, Luís Oliveira and Pedro Santos
- **Parallel Association of Power Semiconductors: An Experimental Evaluation with IGBTs and MOSFETs;**
  Tiago J. C. Sousa, Vitor Monteiro, Bruno Novam Frederico Passos, José Cunha and João L. Afonso
- **Comprehensive Analysis and Experimental Validation of Five-Level Converters for EV Battery Chargers Framed in Smart Grid;**
  Vitor Monteiro, Tiago J. C. Sousa and João Afonso
- **Study of Regenerative Braking Effects in Small Electric Race Car using Energetic Macroscopic Representation;**
  Tommaso Transi, Paulo G. Pereirinha, Alain Bouscayrol and Michele Degano

17:30 – 18:15	**Closing and Awards**