

Proceedings

**2021 International Young
Engineers Forum in Electrical
and Computer Engineering
(YEF-ECE)**

Web event hosted by UNINOVA
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Welcome to YEF-ECE 2021

On behalf of the Organization Committee of YEF-ECE 2021 it is our pleasure to welcome you to the fifth edition of the **International Young Engineers Forum on Electrical and Computer Engineering**. The Forum is organized by the Center of Technology and Systems (CTS) - UNINOVA, and School of Science and Technology of NOVA University of Lisbon. The Conference is technically co-sponsored by the IEEE Industrial Electronics Society, and organized in association with DoCEIS 2021 – 12th Advanced Doctoral Conference on Computing, Electrical and Industrial Systems.

Electrical engineers apply electrical and electronic theories and methods to obtain solutions for problems related to the development, design and operation of electrical hardware and software, control systems, electrical machines, and communication systems. Computer engineers are concerned with the design, development, and implementation of new and challenging computer technologies and solutions in a myriad of consumer, industrial, service, commercial, and military applications. All these areas are nowadays integrated in the so-called cyber-physical systems. Besides development, design, operation, and research, electrical and computers engineers are typically involved in the manufacture, installation, and maintenance of computational devices, electrical and electronic equipment and systems employed by a wide variety of organizations which produce, use, or provide services to such equipment, ranging from tiny electronic devices to large complex systems.

The International Young Engineers Forum looks for the latest contributions to systems development and innovative applications in electrical and computer engineering, dealing with systems' design and utilization, aiming at efficient devices and systems with appropriate control algorithms to meet the needs of society, business, and industry in a global economy. This event is a unique opportunity for young engineers to connect with each other, enabling experience's sharing and to become internationally involved.

Young engineers / graduating MSc students were encouraged to submit manuscripts with their latest innovative developments in Electrical and Computer Engineering, based on their MSc theses or early career projects. Each paper is jointly co-authored by a young engineer and his/her supervisor or mentor. The YEF-ECE International Program Committee reviewed all submitted full papers and

selected the best for presentation in the Forum based on their innovative and original contributions to engineering solutions.

Unfortunately, due to the ongoing COVID-19 pandemic, the Forum, like many other Human activities, was also affected. All the uncertainties and concerns regarding the evolution of the pandemic forced us to take some hard decisions in order to keep the Forum as close as possible to its original essence. All prospective Authors, Program Committee Members and Organization Team worked together to accomplish a high quality YEF-ECE 2021. The acceptance rate was 60%, with papers coming from nine different countries. Although the Forum must take place remotely, via ZOOM platform, we are certain that all participants will take the opportunities offered by the digital platforms to exchange experiences and knowledge with colleagues from different universities and areas of research.

During this one-day event, the Forum offers one keynote talk and 23 paper presentations. All accepted papers have been scheduled in inter-related oral sessions to allow a dynamic exchange of experiences among the researchers and a better understanding of the new concepts and presented ideas.

We would like to thank all authors, session chairs, and members of the International Program Committee, for their unconditional collaboration to make YEF-ECE 2021 an outstanding and unforgettable event.

We particularly would like to express our gratitude to the outstanding keynote speaker, Prof. Milos Manic, for adding significant scientific value to the event.

We hope that your participation in the YEF-ECE 2021 will be a rewarding experience and that you enjoy your participation in this online event.

Luís Camarinha-Matos and João Martins
YEF-ECE 2021 Forum Co-Chairs