

June 25 – June 27, 2020

International Conference on Electronics, Computers and Artificial Intelligence (ECAI)  
ECAI 2020, 12<sup>th</sup> Edition, <http://ecai.ro/>.



The very rapid growth of global energy demand over the last decade and the demand for sustainable development are in the attention of governments and specialists from all countries, being also a topic of high interest under the ECAI 2020 Conference with Energy - MDPI as media and publishing partner, where will be organized special workshops on

**"Advanced techniques to increase the autonomy of the plug-in electric vehicles - AT2APEV",**

**"Fuel Cell Renewable Hybrid Power Systems",**

**"Advanced Modeling, Control, and Optimization Methods in Power Hybrid Systems",**

which will covered specific subjects on Energy & Environmental issues:

- Advanced Modeling and Optimization methods for automotive applications
- Advanced Modeling and Optimization methods for stationary applications
- Advanced Modeling and Optimization methods for microgrid
- Mathematical modeling for power hybrid system
- Real time simulation for power hybrid systems
- Fuel Cell (FC) systems: modeling, control, optimization, and innovative technologies to improve the fuel economy, lifetime, reliability and safety in operation;
- Hybrid Power Systems (HPSs) based on Renewable Energy Sources (RESs) (RES HPS): optimized RES HPSs architectures; Global Maximum Power Point Tracking (GMPPT) control algorithms to improve the energy harvesting from RESs; advanced Energy Management Strategies (EMSs) to optimally ensure the power flow balance on DC (and/or AC bus) for stand-alone RES HPSs or grid-connected RES HPSs (micro-, nano-grids etc.);
- RES HPS with FC system as backup energy source (FC RES HPS): innovative solutions to mitigate the RES power variability and load dynamics to Energy Storage Systems (ESSs) by control of the generated FC power; DC voltage regulation and/or load pulses mitigation by active control of the power converters from hybrid ESS;
- FC vehicles (FCVs) and electric vehicles (EV): FCV and EV powertrain, ESSs topologies and hybridization technologies and EMSs to improve the fuel economy;
- Optimal sizing of FC RES HPSs, and EVs and FCVs;
- Microgrids, nanogrids, smart-grids, smart cities, and smart associations of farms, buildings, parking and homes;
- Smart-grid cyber security using the Energy Internet, blockchain and smart contracts -based applications;
- Operations of smart associations integrated with distributed generation;
- Business opportunities, open issues and future trends.

Besides the topic on Energy & Environmental issues, other ECAI topics will be related to:

- ✓ Electronic circuits and equipment;
- ✓ Communications;
- ✓ Software, databases, and computer applications;
- ✓ Artificial Intelligence, including Expert systems;
- ✓ Signal and image processing;
- ✓ Microwaves - techniques and technologies & EMC;
- ✓ Bio-medical applications & biomaterials;
- ✓ Control, robotics and mechatronics;
- ✓ Electrical engineering applications;
- ✓ Educational multimedia applications;

The best papers will be selected for the Special Issues in Energies ([Impact factor 2.707] Fuel Cell Renewable Hybrid Power System), Guest Editor, Nicu Bizon ([nicubizon@yahoo.com](mailto:nicubizon@yahoo.com)) – general chair of ECAI conference, <http://ecai.ro/>.