

## Timetable A: SpliTech2020 Program

Thursday, September 24

TIME (CEST)	BRAČ	HVAR	KORČULA
09:00-10:30	S1: Special Session on Artificial Intelligence in IoT	S2: RFID-Performances and Applications	S3: Energy-Energy and Buildings I
<b>10:30-10:45</b>	<b>Break</b>		
10:45-12:15	S4: Symposium on IoT: Solutions	S8: RFID-Antennas and Improvements	S6: Energy-Energy and Buildings II
12:30-13:00	Invited: <b>S. Tedjini</b> , "Towards Augmented UHF RFID" (BRAČ)		
<b>13:00-13:30</b>	<b>Break</b>		
13:30-14:00	Invited: <b>G. Anastasi</b> , "Towards the Industrial Internet of Things for Industry 4.0" (BRAČ)		
14:00-14:30	Invited: <b>M. El Barachi</b> , "Combining AI, IoT, and Blockchain to build future smart systems" (BRAČ)		
14:30-15:30	<b>Workshop Meet the Editor: J. J. Klemeš</b>		
<b>15:30-15:45</b>	<b>Break</b>		
15:45-17:15	S7: Symposium on IoT-Software and Systems	S5: RFID-Wearables and Sensing	S9: Energy-Storage

Friday, September 25

TIME (CEST)	BRAČ	HVAR	KORČULA
09:00-10:30	S10: Symposium on IoT-Security	S11: eHealth-Solutions and Systems	S12: Energy-Advanced Energy Systems
<b>10:30-10:45</b>	<b>Break</b>		
10:45-11:15	Invited: <b>A. Sciarrone</b> , "Towards IoT in the eHealth: the role of Signal Processing"		
11:15-11:45	Invited: <b>B. Klarin</b> , "The drone air-path development" (BRAČ)		
11:45-12:15	Invited: <b>T. Theodosiou</b> , "High-performance buildings. Elevating the design from minimum requirements to optimum targets" (BRAČ)		
<b>12:15-12:30</b>	<b>Break</b>		
<b>OPENING CEREMONY</b>			
<b>Keynote speeches:</b>			
12:30-14:00	<b>S. Helal</b> , "The Importance of Being Thing: Or the Trivial Role of Powering Serious IoT Scenarios" <b>J. J. Klemeš</b> , "Plastic replacements: Win or loss?"		
<b>14:00-14:15</b>	<b>Break</b>		
14:15-15:45	S13: Symposium on IoT-Performance Evaluation and Applications	S14: eHealth-Modelling	S15: Energy-Renewable Energy
<b>15:45-16:00</b>	<b>Break</b>		
16:00-17:30	S16: Symposium on IoT-Smart Cities	S17: eHealth-Elderly Care and Monitoring	S18: Energy-Efficiency and System performance I

Saturday, September 26

TIME (CEST)	BRAČ	HVAR	KORČULA
09:00-10:30	S19: Symposium on IoT-Modeling	S20: Energy-Efficiency and System performance II	S21: Energy-Efficiency and System performance III
10:45-11:15	Invited: <b>J. Maroušek</b> , "Anthropogenic emissions alter arable land" (BRAČ)		
11:30-12:00	Invited: <b>P. A. Fokaides</b> , "How can Building Information Modelling make building smarter" (BRAČ)		
<b>12:00-12:15</b>	<b>Break</b>		
12:15-13:45	S22: Energy-Power Systems and Smart Microgrids I	S23: Energy-Power Systems and Smart Microgrids II	
14:00-15:30	S24: Energy-Cleaner Environment I	S25: Energy-Cleaner Environment II	

Special Session on Artificial Intelligence in IoT chair organizer: **C. Distanto**, CNR, Italy

Symposium on IoT organizer: **L. Patrono**, University of Salento, Italy

RFID Workshop organizer: **L. Catarinucci**, University of Salento, Italy

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## Timetable B: SpliTech2020 Program

**Thursday, September 24**

TIME (CEST)	VIS	MLJET	ŠOLTA
09:00-10:30	P1: Professional papers-Energy	SS1: Smart Distributed Electrical Network-special session	Workshop on Smart and Efficient Cooling Techniques for Photovoltaic Technologies
<b>10:30-10:45</b>	<b>Break</b>		
10:45-12:15	P2: Professional papers-Smart Solutions	SC1: Smart Cities-Government and Citizens	Tutorials on Electromagnetics Part I
12:30-13:00	Invited: <b>S. Tedjini</b> , "Towards Augmented UHF RFID" (BRAČ)		
<b>13:00-13:30</b>	<b>Break</b>		
13:30-14:00	Invited: <b>G. Anastasi</b> , "Towards the Industrial Internet of Things for Industry 4.0" (BRAČ)		
14:00-14:30	Invited: <b>M. El Barachi</b> , "Combining AI, IoT, and Blockchain to build future smart systems" (BRAČ)		
14:30-15:30	Workshop Meet the Editor: <b>J. J. Klemeš</b>		
<b>15:30-15:45</b>	<b>Break</b>		
15:45-17:15	S26: Engineering Modelling of Systems and Components I	SC2: Smart Cities-smart city solutions and artificial intelligence	Tutorials on Electromagnetics Part II

**Friday, September 25**

TIME (CEST)	VIS	MLJET	ŠOLTA
09:00-10:30	S27: Engineering Modelling of Systems and Components II	UAS1: Aerotech and Aerospace Applications for Unmanned Aerial Systems (UAS) I	Workshop on Smart and Efficient Cooling Techniques for Photovoltaic Technologies
<b>10:30-10:45</b>	<b>Break</b>		
10:45-11:15	Invited: <b>A. Sciarrone</b> , "Towards IoT in the eHealth: the role of Signal Processing"		
11:15-11:45	Invited: <b>B. Klarin</b> , "The drone air-path development" (BRAČ)		
11:45-12:15	Invited: <b>T. Theodosiou</b> , "High-performance buildings. Elevating the design from minimum requirements to optimum targets" (BRAČ)		
<b>12:15-12:30</b>	<b>Break</b>		
<b>OPENING CEREMONY</b>			
12:30-14:00	<b>Keynote speeches:</b> <b>S. Helal</b> , "The Importance of Being Thing: Or the Trivial Role of Powering Serious IoT Scenarios" <b>J. J. Klemeš</b> , "Plastic replacements: Win or loss?"		
<b>14:00-14:15</b>	<b>Break</b>		
14:15-15:45	S28: Engineering Modelling of Systems and Components III	UAS2: Aerotech and Aerospace Applications for Unmanned Aerial Systems (UAS) II	
<b>15:45-16:00</b>	<b>Break</b>		
16:00-17:30	S29: Engineering Modelling of Power Systems	UAS3: Aerotech and Aerospace Applications for Unmanned Aerial Systems (UAS) III	

**Saturday, September 26**

TIME (CEST)	VIS	MLJET	ŠOLTA
10:45-11:15	Invited: <b>J. Maroušek</b> , "Anthropogenic emissions alter arable land" (BRAČ)		
11:30-12:00	Invited: <b>P. A. Fokaides</b> , "How can Building Information Modelling make building smarter" (BRAČ)		

Special session on Smart Distributed Electrical Network organizer: **M. Kolhe, University of Agder, Norway**  
 Workshop on Smart and Efficient Cooling Techniques for Photovoltaic Technologies organizer: **S. Nizetic, University of Split, Croatia**  
 Special session on Aerotech and Aerospace Applications for Unmanned Aerial Systems organizers: **B. Klarin, G. Gasparovic, University of Split, Croatia**  
 Tutorials on Electromagnetics organizers: **D. Poljak, M. University of Split, Croatia; Sébastien Lalléchère, Clermont Auvergne University, France; Gregor Kosec, Jožef Stefan Institute, Slovenia**

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# 5th International Conference on Smart and Sustainable Technologies 2020

## Program



Time	BRAČ	HVAR	KORČULA	MLJET	VIS
<b>Thursday, September 24</b>					
09:00-10:30	S1: <i>Special Session on Artificial Intelligence in IoT</i>	S2: <i>RFID-Performances and Applications</i>	S3: <i>Energy-Energy and Buildings I</i>	SS1: <i>Smart Distributed Electrical Network-special session</i>	P1: <i>Professional papers - Energy</i>
10:45-12:15	S4: <i>Symposium on IoT: Solutions</i>	S8: <i>RFID-Antennas and Improvements</i>	S6: <i>Energy-Energy and Buildings II</i>	SC1: <i>Government and Citizens</i>	P2: <i>Professional papers - Smart Solutions</i>
15:45-17:15	S7: <i>Symposium on IoT - Software and Systems</i>	S5: <i>RFID-Wearables and Sensing</i>	S9: <i>Energy-Storage</i>	SC2: <i>Smart Cities-smart city solutions and artificial intelligence</i>	S26: <i>Engineering Modeling of Systems and Components I</i>
<b>Friday, September 25</b>					
09:00-10:30	S10: <i>Symposium on IoT - Security</i>	S11: <i>e-Health-Solutions and Systems</i>	S12: <i>Advanced Energy Systems</i>	UAS1: <i>Aerotech and Aerospace Applications for Unmanned Aerial Systems (UAS) I</i>	S27: <i>Engineering Modeling of Systems and Components II</i>
14:15-14:30				UAS2: <i>Aerotech and Aerospace Applications for Unmanned Aerial Systems (UAS) II</i>	S28: <i>Engineering Modeling of Systems and Components III</i>
14:30-15:45	S13: <i>Symposium on IoT - Performance Evaluation and Applications</i>	S14: <i>eHealth-Modelling</i>	S15: <i>Energy-Renewable Energy</i>		
15:45-16:00					
16:00-16:15				UAS3: <i>Aerotech and Aerospace Applications for Unmanned Aerial Systems (UAS) III</i>	S29: <i>Engineering Modeling of Power Systems</i>
16:15-17:30	S16: <i>Symposium on IoT - Smart Cities</i>	S17: <i>eHealth-Elderly Care and Monitoring</i>	S18: <i>Energy-Efficiency and System performance I</i>		
17:30-17:45					
<b>Saturday, September 26</b>					
09:00-10:30	S19: <i>Symposium on IoT - Modeling</i>	S20: <i>Energy-Efficiency and System performance II</i>	S21: <i>Energy-Efficiency and System performance III</i>		
12:15-13:45	S22: <i>Energy-Power Systems and Smart Microgrids I</i>	S23: <i>Energy-Power Systems and Smart Microgrids II</i>			
14:00-15:30	S24: <i>Energy - Cleaner Environment I</i>	S25: <i>Energy - Cleaner Environment II</i>			

## Thursday, September 24 9:00 - 10:30

### P1: Professional papers - Energy

Room: VIS

Chair: Ivan Pivac (FESB, University of Split, Croatia)

#### **Ex-situ measurement of charge carrier concentration in Nafion by Hall effect**

[Ivan Poljak](#) and [Paško Županović](#) (University of Split, Croatia); [Frano Barbir](#) (University of Split, FESB, Croatia)

#### **Analysis Of Power System Blackouts And Their Solutions**

[Shoaib Rauf](#) (University of Gujrat, Pakistan); [Ali Raza Kalair](#) (Swinburne University of Technology, Melbourne, Australia); [Naeem Abas](#) (University of Gujrat, Pakistan); [Nasrullah Khan](#) (COMSATS Institute of Information Technology, Pakistan); [Alex Stojcevski](#) and [Mehdi Seyedmahmousian](#) (Swinburne University of Technology, Australia)

#### **Live Load Management in Microgrid Using WiFi Controlled IoT Devices**

[Ali Raza Kalair](#) (Swinburne University of Technology, Melbourne, Australia); [Mehdi Seyedmahmousian](#) (Swinburne University of Technology, Australia); [Shoaib Rauf](#) and [Naeem Abas](#) (University of Gujrat, Pakistan); [Alex Stojcevski](#) (Swinburne University of Technology, Australia); [Nasrullah Khan](#) (COMSATS Institute of Information Technology, Pakistan)

#### **Optimal Placement and Sizing of Distributed Generation for Power Loss Mitigation and Voltage Profile Enhancement Using Atom Search Optimization**

[Hussain Shareef](#) (United Arab Emirates University, United Arab Emirates); [Ashwaq Alkhatib](#) (The United Arab Emirates University, United Arab Emirates)

#### **Determination of the metabolic rate using sensor (in the context of thermal comfort in buildings)**

[Ana Culic](#) (University of Split, Croatia); [Sandro Nizetic](#) (University of Split, FESB, Croatia)

### S1: Special Session on Artificial Intelligence in IoT

Room: BRAC

Chair: Cosimo Distante (CNR, Italy)

#### **RhinoSmart: a smartphone based system for rhino-cell segmentation**

[Giovanni Dimauro](#) (Università di Bari & Dipartimento di Informatica, Italy); [Davide Di Pierro](#) (Università di Bari - Dipartimento di Informatica, Italy); [Rosalia Maglietta](#) (Institute of Intelligent Systems for Automation - National Research Council, Italy); [Vito Renò](#) (STIIMA CNR - Bari, Italy); [Danilo Caivano](#) (Università di Bari, Italy); [Matteo Gelardi](#) (Università di Foggia, Italy)

#### **Innovative classification of dolphins using deep neural networks and GrabCut**

[Vito Renò](#) (STIIMA CNR - Bari, Italy); [Gennaro Gala](#), [Pierluigi Dibari](#) and [Roberto Carlucci](#) (University of Bari, Italy); [Carmelo Fanizza](#) (Jonian Dolphin Conservation, Italy); [Giovanna Castellano](#) and [Gennaro Vessio](#) (University of Bari, Italy); [Giovanni Dimauro](#) (Università di Bari & Dipartimento di Informatica, Italy); [Rosalia Maglietta](#) (Institute of Intelligent Systems for Automation - National Research Council, Italy)

#### **Pollution Prediction Model Using Data Collected by a Mobile Sensor Network**

[Pedro L Mariano](#) (ISCTE-IUL, Portugal); [Pedro Santana](#) (ISCTE - Instituto Universitário de Lisboa, Portugal)

#### **Self Attention based multi branch Network for Person Re-Identification**

[Asad Munir](#) and [Christian Micheloni](#) (University of Udine, Italy)

### S2: RFID-Performances and Applications

Room: HVAR

Chair: Luca Catarinucci (University of Salento, Italy)

#### **A machine learning approach to improve UHF RFID gate operation**

[Javier Vales-Alonso](#) (Universidad Politécnica de Cartagena, Spain); [Pablo Lopez-Matencio](#) (Technical University of Cartagena, Spain); [Juan Jose Alcaraz](#) (Universidad Politécnica de Cartagena, Spain)

#### **RFID Performance Evaluation in a Retail Store**

[Lea Đujić Rodić](#) (FESB, University of Split, Croatia); [Toni Perkovic](#) (University of Split, FESB, Croatia); [Petar Solic](#) (University of Split & FESB, Croatia); [Maja Škiljo](#) and [Zoran Blažević](#) (University of Split, Croatia)

#### **Indoor Object Positioning using Smartphone and RFID or QR Code**

[Riccardo Carotenuto](#) (University "Mediterranea" of Reggio Calabria, Italy); [Massimo Merenda](#), [Demetrio Iero](#) and [Francesco G. Della Corte](#) (University Mediterranea of Reggio Calabria, Italy)

#### **Augmented Information Discovery using NFC Technology within a Platform for Disaster Monitoring**

[Massimo Merenda](#), [Rosario Fedele](#), [Filippo G. Pratico](#) and [Demetrio Iero](#) (University Mediterranea of Reggio Calabria, Italy); [Riccardo Carotenuto](#) (University "Mediterranea" of Reggio Calabria, Italy); [Francesco G. Della Corte](#) (University Mediterranea of Reggio Calabria, Italy)

## S3: Energy-Energy and Buildings I

Room: KORČULA

Chair: Theodoros Theodosiou (Aristotle University of Thessaloniki, Greece)

#### **An Investigation Of The Greenhouse Gas Emissions In European Countries Buildings According To The Life-Cycle**

[Ismail Caner](#) (Mühendislik Fakültesi Makine Mühendisliği Bölümü Bigadiç Yolu 17. Km Çağış Kampüsü, Turkey); [Okan Kon](#) (Balıkesir University, Turkey)

#### **The occupants' comfort in non-residential nearly Zero Energy Buildings in the 21st century: A review**

[Panagiota Antoniadou](#), [Konstantinos Papakostas](#) and [Agis M. Papadopoulos](#) (Aristotle University of Thessaloniki, Greece)

#### **Improving the energy efficiency of school buildings by using passive design systems**

[Dušan J. Ranđelović](#), [Miomir Vasov](#) and [Marko Ignjatović](#) (University of Niš, Serbia); [M. Stojiljkovi](#) (University of Nis, Serbia); [Veliborka Bogdanović](#) (University of Niš, Serbia)

#### **Optimization of solar energy exploitation for a neighborhood towards nearly zero energy buildings**

[Fabrizio Ascione](#) and [Nicola Bianco](#) (Università degli studi di Napoli Federico II, Italy); [Gerardo Maria Mauro](#) (Università degli studi del Sannio, Italy); [Davide Ferdinando Napolitano](#) (Università degli studi di Bergamo, Italy); [Giuseppe Peter Vanoli](#) (Università degli studi del Molise, Italy)

#### **Energy Consumption in Public Buildings - A survey in Greece**

[Asimina Dimara](#), [Christos Timplalexis](#) and [Stelios Krinidis](#) (Centre for Research and Technology Hellas, Greece); [Konstantinos Arvanitis](#) (Anonomi Etairia Ekmatalleysis Enallaktikon Morfon Energeias, Greece); [Dimitrios Tzovaras](#) (Information Technologies Institute, Greece)

## SS1: Smart Distributed Electrical Network-special session

Room: MLJET

Chair: Mohan Kolhe (University of Agder, Norway)

#### **A deep reinforcement learning scheme for battery energy management**

[Sven Myrdahl Opalic](#) (University of Agder & Login Eiendom AS, Norway); [Morten Goodwin](#) (University of Agder, Norway); [Lei Jiao](#) (University of Agder & Department of Information and Communication Technology, Norway); [Henrik Nielsen](#) and [Mohan Kolhe](#) (University of Agder, Norway)

#### **Frequency Regulation of Hybrid Power System by Optimized Adaptive Fuzzy PID Controller**

[Mohan Kolhe](#) (University of Agder, Norway)

#### **Adaptive Energy Management Strategy for Optimal Power Flow Control of Hybrid DC Microgrid**

[K Raghavendra Naik](#), [Bhooshan Rajpathak](#) and [Arghya Mitra](#) (Visvesvaraya National Institute Of Technology, India); [Mohan Kolhe](#) (University of Agder, Norway)

#### **Priority based coordinated charging scheme for homogeneous and heterogeneous electric vehicles plugged in a smart grid**

[Sandun Konara](#) (University of Agder & Faculty of Engineering and Science, Norway); [Mohan Kolhe](#) (University of Agder, Norway)



## Techno-Economic Case Study of Microgrid System at Soccer Club's Skagerak Arena in Norway

[Arvind Sharma](#) (University of Agder & TERI, Norway); [Mohan Kolhe](#) (University of Agder, Norway)

## Thursday, September 24 10:45 - 12:15

### P2: Professional papers - Smart Solutions

Room: VIS

Chair: Maja Škiljo (University of Split, Croatia)

#### Life Cycle Analysis and Life Cycle Cost Analysis of green roofs in the Mediterranean

[Effrosyni Giama](#) (Aristotle University of Thessaloniki, Greece); [Charilaos Papageorgiou](#) and [Ifigeneia Theodoridou](#) (International Hellenic University, Greece); [Agis M. Papadopoulos](#) (Aristotle University of Thessaloniki, Greece)

#### Opportunities for Deploying Distributed Ledger Technologies in the Automotive Industry 4.0

[Natasa Zivic](#) (University of Siegen, Germany)

#### Life cycle cost optimization analysis of battery storage system for residential photovoltaic panels

[Maria Symeonidou](#) (Aristotle University Thessaloniki, Greece); [Chrysanthi Zioga](#) (Aristotle University, Greece); [Agis M. Papadopoulos](#) (Aristotle University of Thessaloniki, Greece)

#### Electrochemical Characterization Of Proton Exchange Membrane Electrolyzer Under Various Operating Conditions

[Andrej Zvonimir Tomić](#) and [Ivan Pivac](#) (FESB, University of Split, Croatia); [Frano Barbir](#) (University of Split, FESB, Croatia)

### S4: Symposium on IoT: Solutions

Room: BRAC

Chair: Luigi Patrono (University of Salento, Italy)

#### Smart Gate: a Modular System for Occupancy and Environmental Monitoring of Spaces

[Edoardo Longo](#), [Alessandro E. C. Redondi](#), [Patrizia Bolzan](#), [Massimo Bianchini](#) and [Stefano Maffei](#) (Politecnico di Milano, Italy)

#### An Affordable Vehicle-Mounted Sensing Solution for Mobile Air Quality Monitoring

[Pedro Santana](#) (ISCTE - Instituto Universitário de Lisboa, Portugal); [Alexandre P Almeida](#) (ISCTE-IUL & Instituto de Telecomunicações, Portugal); [Pedro L Mariano](#) (ISCTE-IUL, Portugal); [Carolina Correia](#), [Vânia Martins](#) and [Marta Almeida](#) (Centro de Ciências e Tecnologias Nucleares, Instituto Superior Técnico, Portugal)

#### Unconventional Audio Signal Processing: Aloe Vera Summing and Panning

[Zlatko Baracskai](#) (UWE Bristol, United Kingdom (Great Britain)); [Marija Šumarac](#) (University of Arts in Belgrade, Serbia); [Nicoletta Saulig](#) (University of Pula, Croatia)

#### Risk Management and Healthcare: IoT Technologies and Smart Monitoring System for a Good Cold Chain Management

[Teresa Bengiovanni](#) (Local Health Authority of Matera, Italy); [Roberto Rosito](#) and [Vincenzo Lacasa](#) (ITS, Italy); [Eugenio Simone](#) (Local Health Authority of Matera, Italy); [Ilaria Sergi](#) (University of Salento, Italy); [Vincenzo Iacovone](#) (ITS, Italy); [Michele Viggiano](#) (Authority of Matera, Italy); [Luigi Patrono](#) (University of Salento, Italy)

#### MGF Based Calculation of ABEP for Macrodiversity Receiver over Gamma-Shadowed Fading Environment with Line-of-Sight


[Dragana Krstić](#) (Faculty of Electronic Engineering, University of Niš, Serbia); [Selena Vasić](#) (Faculty of Information Technology, University of Metropolitan, Belgrade, Serbia); [Samir Konicanin](#) (University of Nis, Faculty of Electronic Engineering, Serbia); [Suad Suljovic](#) (Faculty of Electronic Engineering, University of Niš, Serbia); [Mihajlo Stefanović](#) (University of Nis, Serbia)

### S6: Energy-Energy and Buildings II

Room: KORČULA

#### Comprehensive insights into the influence of climatic stress on building heating demand

[Fabrizio Ascione](#) and [Nicola Bianco](#) (Università degli studi di Napoli Federico II, Italy); [Gerardo Maria Mauro](#) (Università degli studi del Sannio, Italy); [Davide Ferdinando Napolitano](#) (Università degli studi di Bergamo, Italy); [Giuseppe Peter Vanoli](#) (Università degli studi del Molise, Italy)

**A novel building ventilated façade with integrated bifacial photovoltaic modules: analysis of the electrical and thermal performances** 

[Giuseppe Marco Tina](#) (University of Catania, Italy); [Fausto Bontempo Scavo](#) (Università degli studi di Catania, Italy); [Stefano Aneli](#) (University of Catania, Italy); [Antonio Gagliano](#) (University of Catania & Italy, Italy)

**On the use of user profiles by forecasting the heat used for heating** 

[Tomasz Cholewa](#) (Lublin University of Technology, Poland)

**Optimal Recommendation Strategy Identification towards Energy Efficiency in Tertiary Buildings** 

[Ilias Kalamaras](#) (Information Technologies Institute - Centre for Research and Technology Hellas, Greece); [Apostolos C. Tsolakis](#) and [Stelios Krinidis](#) (Centre for Research and Technology Hellas, Greece); [Dimitrios Tzovaras](#) (Information Technologies Institute, Greece); [Adamantia Chouliara](#) (Centre for Research & Technology Hellas/ Information Technologies Institute, Greece)

**Optimal Comfort Conditions in Residential Houses** 

[Asimina Dimara](#), [Christos Timplalexis](#) and [Stelios Krinidis](#) (Centre for Research and Technology Hellas, Greece); [Christopher Schneider](#) (Stadtwerk Hassfurt GmbH, Germany); [Marco Bertocchi](#) (Societa Elettrica Sopracenerina SA, Greece); [Dimitrios Tzovaras](#) (Information Technologies Institute, Greece)

## S8: RFID-Antennas and Improvements

Room: HVAR

Chair: Luca Catarinucci (University of Salento, Italy)

**Passive Enhancement of Read Range of Miniaturized UHF RFID Tags** 

[Imbolatiana Rakotomalala](#) (University of Grenoble Alpes, France); [Pierre Lemaitre-Auger](#) (Institut Polytechnique de Grenoble & LCIS, France); [Smail Tedjini](#) (University Grenoble Alpes, France)

**SAR-based Localization of UHF-RFID Tags in Smart Warehouses** 

[Fabio Bernardini](#), [Andrea Motroni](#), [Paolo Nepa](#), [Alice Buffi](#) and [Bernardo Tellini](#) (University of Pisa, Italy)

**Compact Quasi-Yagi Reader Antenna for UHF RFID Smart-Glove** 

[Rajesh K Singh](#), [Andrea Michel](#) and [Paolo Nepa](#) (University of Pisa, Italy); [Alfredo Salvatore](#) (Sensor ID, Italy)

**Digital Light Processing as One of the Promising 3D Printing Technologies in Electromagnetics: Application on RFID** 

[Riccardo Colella](#) (National Research Council (CNR), Italy); [Francesco P. Chietera](#) and [Luca Catarinucci](#) (University of Salento, Italy)

## SC1: Government and Citizens

Room: MLJET

Chair: Zoran Blažević (University of Split, Croatia)

**Evaluating Citizens' Sentiments in Smart Cities: A Deep Learning Approach** 

[Abdallah Elabora](#) (British University in Dubai, United Arab Emirates); [Manar Alkhatib](#) (The British University in Dubai, United Arab Emirates); [Sujith Samuel Mathew](#) (Zayed University, United Arab Emirates); [May El Barachi](#) (University of Wollongong Dubai, United Arab Emirates)

**Using Artificial Intelligence to Monitor the Evolution of Opinion Leaders' Sentiments: Case Study on Global Warming** 

[Manar Alkhatib](#) (The British University in Dubai, United Arab Emirates); [May El Barachi](#) (University of Wollongong Dubai, United Arab Emirates); [Sujith Samuel Mathew](#) (Zayed University, United Arab Emirates); [Farhad Oroumchian](#) (University of Wollongong in Dubai, Iran)

**Blockchain-mediated Collaboration of Citizens in Open Government Processes** 

[Mikel Emaldi](#) (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain); [Koldo Zabaleta](#) and [Ibai Guillén](#) (Deusto Institute of Technology - DeustoTech, Spain); [Diego López-de-Ipiña](#) (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain)

Thursday, September 24 15:45 - 17:15

## S26: Engineering Modeling of Systems and Components I

Room: VIS

Chair: Damir Sedlar (University of Split, Croatia)

**Assessment of Incident Power Density at the Surface of Flat Lossy Medium in GHz Frequency Range - A case of Hertz dipole**



[Dragan Poljak](#) (University of Split, FESB, Croatia); [Mario Cvetković](#) (University of Split, Croatia)

**Time integration methods for flexible pendulum with slider**



[Damir Sedlar](#), [Željko Lozina](#) and [Andela Bartulovic](#) (University of Split, Croatia)

**Evaluation of the transient problem integration in vicinity of resonance**



[Željko Lozina](#), [Damir Sedlar](#) and [Andela Bartulovic](#) (University of Split, Croatia)

**Numerical Solution and Uncertainty Quantification of Bioheat Transfer Equation Using Neural Network Approach**



[Ante Lojić Kapetanović](#), [Anna Susnjara](#) and [Dragan Poljak](#) (University of Split, Croatia)

## S5: RFID-Wearables and Sensing

Room: HVAR

Chair: Luca Catarinucci (University of Salento, Italy)

**Experimentation and calibration of Near-Field UHF Epidermal Communication for emerging Tactile Internet**



[Giulio M. Bianco](#) (University of Roma Tor Vergata, Italy); [Cecilia Vivarelli](#) (University of Roma Tor Vergata, Italy); [Sara Amendola](#) (University of Roma Tor Vergata & Radio6ense srl, Italy); [Gaetano Marrocco](#) (University of Roma Tor Vergata, Italy)

**Towards a Compact UHF RFID Reader for Wearable Bio-sensing devices**



[Andrew J Mugisha](#) and [Amin Rigi](#) (University of Edinburgh, United Kingdom (Great Britain)); [Rahil Joshi](#) (Heriot Watt University, United Kingdom (Great Britain)); [Andreas Tsiamis](#) (University Of Edinburgh, United Kingdom (Great Britain)); [Symon Podilchak](#) and [Srinjoy Mitra](#) (University of Edinburgh, United Kingdom (Great Britain))

**Strategies for Synchronously Reading Microwave Encoders and Application to Sensors for Motion Control**



[Ferran Paredes](#) (Universitat Autònoma de Barcelona, Spain); [Cristian Herrojo](#) (Universitat Autònoma de Barcelona, Spain); [Ferran Martín](#) (Universidad autónoma de Barcelona, Spain)

**A Robust Wearable Textile SIW RFID Antenna**



[Giovanni Andrea Casula](#) (Università di Cagliari, Italy); [Giorgio Montisci](#) and [Giacomo Muntoni](#) (University of Cagliari, Italy); [Hendrik Rogier](#) (Ghent University, Belgium)

**Calibration Strategy for Tunable Devices Based of Artificial Neural Network Modelling**



[Leonardo Pantoli](#) (University of Laquila, Italy); [Alfiero Leoni](#) (University of L'Aquila, Italy); [Zlatica Marinković](#) (University of Nis, Serbia)

## S7: Symposium on IoT - Software and Systems

Room: BRAC

Chair: Luigi Patrono (University of Salento, Italy)

**Advanced Architectures for IoT Scenarios**



[Andriy Prof. Dr. habil. \(Dr. Sci. II\) Luntovskyy](#) (BA Dresden University of Cooperative Education & Staatliche Studienakademie BA Dresden, Germany); [Bohdan Shubyn](#) (Lviv Polytechnic National University & ITRE, Ukraine)

**IoT Wallet: Machine Learning-based Sensor Portfolio Application**



[Petar Solic](#) (University of Split & FESB, Croatia); [Ante Lojić Kapetanović](#), [Tomislav Zupanovic](#) and [Ivo Kovačević](#) (University of Split, Croatia); [Toni Perkovic](#) (University of Split, FESB, Croatia); [Petar Popovski](#) (Aalborg University, Denmark)

**Overview of JavaScript Engines for Resource-Constrained Microcontrollers**



[Kai Grunert](#) (Technische Universität Berlin & Telekom Innovation Laboratories, Germany)

**Data Management Mechanisms for IoT: Architecture, Challenges and Solutions**





[Bassirou Diène](#) and [Ousmane Diallo](#) (University of Assane Seck of Ziguinchor, Senegal); [Joel J. P. C. Rodrigues](#) (Federal University of Piauí (UFPI), Brazil & Instituto de Telecomunicações, Portugal); [EL Malick Hadji Ndoye](#) (University of Assane Seck of Ziguinchor, Senegal); [Ciprian Teodorov](#) (ENSTA Bretagne, France)

### **A Flexible System for Optimizing Green Spaces Irrigation**

[Sofia D Silva](#), [Telmo Cardoso](#), [Paulo Barros](#) and [Henrique Ribeiro](#) (Departamento de Informática, Universidade do Minho, Portugal); [Paulo Carvalho](#) (Centro Algoritmi, Universidade do Minho, Portugal); [Solange Rito Lima](#) (Centro Algoritmi, University of Minho, Portugal)

## S9: Energy-Storage

Room: KORČULA

### **Sustainable energy system combined biogas-feed-Solid Oxide Fuel Cell and microalgae technology**

[Araceli Fuerte](#), [Rita Valenzuela](#) and [Paloma Ferreira-Aparicio](#) (CIEMAT, Spain); [Beata Bochentyn](#) (Gdansk University, Poland)

### **CCHP Systems Analysis with Emphasis on Fuel Cells, Thermoelectricity and Power Converters**

[Nganyang Paul Bayendang](#) (Cape Peninsula University of Technology (CPUT) & Technical University of Sofia (TU-Sofia), South Africa); [Mohammed T. E. Kahn](#) and [Vipin Balyan](#) (Cape Peninsula University of Technology, South Africa); [Ivo Draganov](#) (Technical University of Sofia, Bulgaria)

### **BMS-oriented model for Li-ion batteries with mixed SiOx/graphite anodes**

[Sergio Rodríguez Cadavid](#) (Université de Bordeaux, Germany); [Joerg Poehler](#) and [Niklas Bless](#) (Robert Bosch GmbH, Germany); [Jocelyn Sabatier](#) (Université de Bordeaux, France); [Patrick Lanusse](#) (Université Bordeaux - IMS / IPB, France); [Christophe Farges](#) (Université de Bordeaux, France)

### **Control strategy of Fuel cell-Battery hybrid system for optimizing Lift truck load cycle**

[Gojmir Radica](#) (University of Split, Croatia); [Ivan Tolj](#) (University of Split, Faculty of Elect. Eng., Mech. Eng. and Naval Arch., Croatia); [Michael Lototsky](#) and [Sivakumar Pasupathi](#) (University of the Western Cape, South Africa)

## SC2: Smart Cities-smart city solutions and artificial intelligence

Room: MLJET

Chair: Zoran Blažević (University of Split, Croatia)

### **Detecting Underwater Sea Litter Using Deep Neural Networks: An Initial Study**

[Josip Music](#), [Stanko Kruzic](#) and [Ivo Stancic](#) (University of Split, Croatia); [Floris Alexandrou](#) (UCLan University, Cyprus)

### **Autonomous Underwater Vehicle Actuators Health Monitoring for Smart Harbour Application**

[Massimiliano Menghini](#), [Luca De Marchi](#) and [Paolo Castaldi](#) (University of Bologna, Italy); [Silvio Simani](#) (University of Ferrara, Italy)

### **Air Quality Visual Analytics with Kibana**

[Dessislava Georgieva Petrova-Antonova](#) (Sofia University "St. Kliment Ohridski", Bulgaria); [Stefan Baychev](#) and [Irena Pavlova](#) (SU "St. Kl. Ohridski", Bulgaria); [Georgi Pavlov](#) (University of Cologne, Germany)

### **Multiscale Optical PM2.5 Particles Recognition System in Air Pollution Research**

[Andrey N. Kokoulin](#) (Perm National Research Polytechnical University & Federal Scientific Center for Medical and Preventive Health Risk Management Technologies, Russia); [Aleksandr A. Yuzhakov](#) (PNIPU, Russia); [Rostislav Kokoulin](#) (Bauman Moscow State Technical University, Russia)

Friday, September 25

Friday, September 25 9:00 - 10:30

## S10: Symposium on IoT - Security

Room: BRAC

Chair: Luigi Patrono (University of Salento, Italy)

### **Smart Malware Detection: From Signatures to Artificial Intelligence**

[Jannatul Ferdaos](#), [Chandani Vaya](#), [Anchal Bhalla](#) and [Ami Tharayil](#) (University of Wollongong in Dubai, United Arab Emirates);  
[May El Barachi](#) (University of Wollongong Dubai, United Arab Emirates)

### **Blockchain based Device identification and authentication in a Smart Grid**

[Vasudev Dehalwar](#) (MANIT, Bhopal, India); [Mohan Kolhe](#) (University of Agder, Norway); [Surendra Solanki](#) and [Mahendra Kumar Jhariya](#) (MANIT, Bhopal, India); [Koki Ogura](#) (Kyushu Sangyo University, Japan)

### **Security challenges of Wi-Fi connected beer cooler and serving IIoT device**

[Nikolina Kasunic](#) and [Dunja Bjelobrck Knezevic](#) (Zagreb University of Applied Sciences, Croatia)

### **A Rapid Prototyping Approach in Industry4.0 based on Secure Hardware and Azure Sphere Cloud**

[Iaria Sergi](#) (University of Salento, Italy); [Luca Cremona](#) and [Nicola Carrus](#) (ROLD, Italy); [Luigi Patrono](#) (University of Salento, Italy)

## S11: e-Health-Solutions and Systems

Room: HVAR

Chair: Andrea Sciarrone (University of Genoa, Italy)

### **Efficient Spectrum Sensing for the Relay Based Cognitive Radio Network for Enhancing the Network Coverage for Wireless**

#### **Patient Monitoring System**

[Geoffrey Eappen](#) (VIT Vellore, India); [Shankar T](#) (VIT Vellore, United Kingdom (Great Britain)); [Rajagopal Nilavalan](#) (Brunel University, London, United Kingdom (Great Britain))

### **NeuroGlasses: A Wearable Prototype for Early Detection of Neurological Symptoms**

[Andrea Sciarrone](#), [Igor Bisio](#), [Chiara Garibotto](#), [Fabio Lavagetto](#), [Mehrnaz Hamedani](#), [Valeria Prada](#), [Silvia Stara](#) and [Angelo Schenone](#) (University of Genoa, Italy); [Federico Boero](#) and [Gianluca Gambari](#) (FOS, Italy)

### **Towards Wearable Dresses: Piezoelectric Glove Design and Test**

[Iolanda Ulisse](#) (University of L'Aquila, Italy); [Stefano Ricci](#) (Università L'aquila, Italy); [Giuseppe Ferri](#) (University of L'Aquila, Italy)

## S12: Advanced Energy Systems

Room: KORČULA

Chair: Aleksandar Andjelkovic (University of Novi Sad, Serbia)

### **Optimization of a Hedge-Algebra-Based Speed Controller in a Stand-Alone WECS**

[Dinko Vukadinović](#) (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Croatia); [Mateo Bašić](#) (University of Split, FESB, Croatia); [Nguyen Cat Ho](#) (Duy Tan University, Vietnam); [Nguyen T Duy](#) (Thainguyen University of Technology, Vietnam); [Nhu Lan Vu](#) (Tang Long University); [Matija Bubalo](#) (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Split, Croatia)

### **Barriers to Widespread the Adoption of Electric Flexibility Markets: A Triangulation Approach**

[Koldo Zabaleta](#) (Deusto Institute of Technology - DeustoTech, Spain); [Diego Casado-Mansilla](#) (University of Deusto, Spain); [Evgenia Kapassa](#) (University of Nicosia, Cyprus); [Cruz E. Borges](#) (University of Deusto, Spain); [Guntram Preßmair](#) (E-sieben, Austria); [Marinos Themistocleous](#) (University of Nicosia, Cyprus); [Diego López-de-Ipiña](#) (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain)

### **Dry reforming of methane over Ni-Ru/MgAl<sub>2</sub>O<sub>4</sub> catalyst with high coke resistance for syngas production**

[Dahye Song](#) (Korea Institute of Energy Research & Korea University, Korea (South)); [Unho Jung](#) and [Hyo Been Im](#) (Korea Institute of Energy Research, Korea (South)); [Ki Bong Lee](#) (Korea University, Korea (South)); [Kee Young Koo](#) (Korea Institute of Energy Research, Korea (South))

### **A Thermal Control Methodology Based on a Multiple Linear Regression Predictive Model for Indoor Heating**

[Makram Abdellatif](#) (University of Artois & Yncréa HEI, France); [Julien Chamoin](#) and [Jean-Marie Nianga](#) (Yncréa HEI, France); [Didier Defer](#) (University of Artois, France)

### **Monitoring of occupant metabolic responses with application of wearable sensors**

[Sandro Nizetic](#) (University of Split, FESB, Croatia); [Nikolina Pivac](#) (FESB University of Split, Croatia); [Filip Mustac](#) (School of Medicine, University of Zagreb, Croatia); [Vlasta Zanki](#) (Director at HEP ESCO, Croatia)

## S27: Engineering Modeling of Systems and Components II

Room: VIS

Chair: Dragan Poljak (University of Split, Croatia)

### **Neural network-integrated multiobjective optimization of the 3D-printed conformal cooling channels**

[Baris Burak Kanbur](#) (Nanyang Technological University & Singapore Centre for 3D Printing, Singapore); [Suping Shen](#), [Yi Zhou](#) and [Fei Duan](#) (Nanyang Technological University, Singapore)

### **Local Temperature Estimation in PEM Fuel Cell**

[Anamarija Stoilova](#) (Center of Excellence for Science and Technology, University of Split & FESB, University of Split, Croatia); [Frano Barbir](#) (University of Split, FESB, Croatia); [Željko Penga](#) (University of Split, Faculty of FESB, Croatia); [Ivan Pivac](#) (FESB, University of Split, Croatia)

### **Vehicle Thermal Modelling for Improved Drive Cycle Analysis of a Generic City Bus**

[Conor O'Boyle](#) and [Roy Douglas](#) (Queen's University Belfast, United Kingdom (Great Britain)); [Robert Best](#) (Bamford Bus Company Ltd., United Kingdom (Great Britain)); [Marco Geron](#) (Queen's University Belfast, United Kingdom (Great Britain))

### **Computational Fluid Dynamics Analysis and Experimental Validation of Propeller Flow**

[Luka Mihanović](#) (NAVAL STUDIES, Croatia); [Jure Penga](#) (University of Split, FESB, Croatia); [Željko Penga](#) (University of Split, Faculty of FESB, Croatia); [Gojmir Radica](#) (University of Split, Croatia)

### **Computational fluid dynamics analysis of water spray cooling for photovoltaic panels**

[Hrvoje Dedić-Jandrek](#) (University of Split & Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Croatia); [Željko Penga](#) (University of Split, Faculty of FESB, Croatia)

## UAS1: Aerotech and Aerospace Applications for Unmanned Aerial Systems (UAS) I

Room: MLJET

Chair: Branko Klarin (University of Split, FESB, Croatia)

### **Drone applications in transportation**

[Drazen Cvitanic](#) (Lovretska 19 & University of Split, Faculty of Civil Engineering, Architecture and Geodesy, Croatia)

### **Information Model for Evaluation and Selection of Instructor Pilots for Smart City Urban Air Mobility**

[Róbert Rozenberg](#) (Technical University of Košice, Slovakia); [Hélia Némethová](#) (Technical University of Košice & Faculty of Aeronautics, Slovakia); [Martin Kelemen](#) (SYTELI, Slovakia); [Stanislav Szabo](#) and [Jaroslav Jevčák](#) (Technical University of Košice, Slovakia); [Danijel Vuković](#) (ELEVON Tehnologije, Croatia); [Volodymyr Polishchuk](#) (Uzhgorod National University, Ukraine); [Ladislav Choma](#) (Technical University of Košice, Slovakia)

### **Municipality Management and Model of Evaluation and Selection of the Expert Group Members for Smart City Transportation and Mobility including UAV/UAS**

[Miroslav Kelemen](#) (Technical University of Košice, Slovakia); [Hélia Némethová](#) (Technical University of Košice & Faculty of Aeronautics, Slovakia); [Martin Kelemen](#) (SYTELI, Slovakia); [Volodymyr Polishchuk](#) (Uzhgorod National University, Ukraine); [Jaroslav Jevčák](#) (Technical University of Košice, Slovakia); [Danijel Vuković](#) (ELEVON Tehnologije, Croatia); [Ihor Liakh](#) (Uzhgorod National University, Ukraine); [Ladislav Choma](#) (Technical University of Košice, Slovakia)

### **Electronic Education in Aviation Technical Personnel Education**

[Stanislav Đurčo](#), [Martin Schrötter](#), [Dávid Megyesi](#) and [Jakub Leško](#) (Technical University of Košice, Slovakia); [Danijel Vuković](#) (ELEVON Tehnologije, Croatia); [Róbert Bréda](#) and [Róbert Rozenberg](#) (Technical University of Košice, Slovakia); [Hélia Némethová](#) (Technical University of Košice & Faculty of Aeronautics, Slovakia)

Friday, September 25 14:15 - 15:45

## S28: Engineering Modeling of Systems and Components III

Room: VIS

Chair: Dragan Poljak (University of Split, Croatia)

### **Exergy Analysis Of Hot-Windbox Repowering Option For A Coal-Fired Thermal Power Plant**

[Mustafa Yilmazoglu](#) (Gazi University, Turkey); [Altug Alp Erdogan](#) (Gazi University & Anadolu Plasma Technology Energy Center, Turkey)

### **Comparison of simple and full approach for non-associated formulation based on Karafillis-Boyce stress function**

[Vedrana Cvitanić](#) (University of Split, Croatia); [Maja Džoja](#) (University of Split & The Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Croatia)

### **Multi-zone engine combustion model calibration using genetic algorithms**

[Nikola Matulic](#) (University of Split FESB, Croatia); [Toni Šantić](#) (University of Split, FESB, Croatia); [Gojmir Radica](#) (University of Split, Croatia)

## **UAS2: Aerotech and Aerospace Applications for Unmanned Aerial Systems (UAS) II**

Room: MLJET

Chair: Goran Gasparovic (UNIST-FESB, Croatia)

### **Use of progressive cement-concrete mixtures for runway construction and repair**

[Stanislav Szabo](#), [Patrik Šváb](#), [Michaela Kešelová](#), [Dorota Liptáková](#) and [Peter Koščák](#) (Technical University of Košice, Slovakia); [Danijel Vuković](#) (ELEVON Tehnologije, Croatia); [Hélia Némethová](#) (Technical University of Košice & Faculty of Aeronautics, Slovakia)

### **Economic comparison of UAV's and helicopters used for terrain mapping**

[Jozef Sabo](#), [Marek Pilát](#), [Stanislav Szabo](#) and [Peter Dzurovčín](#) (Technical University of Košice, Slovakia); [Danijel Vuković](#) (ELEVON Tehnologije, Croatia); [Sebastian Makó](#) and [Alica Tobisová](#) (Technical University of Košice, Slovakia); [Hélia Némethová](#) (Technical University of Košice & Faculty of Aeronautics, Slovakia)

### **Application of YOLO algorithm on SUAV**

[Alen Grebo](#) (University of Split Faculty of Electrical Engineering Mechanical Engineering and Naval Architecture, Croatia); [Toni Konsa](#) (University of Split, Croatia); [Goran Gasparovic](#) (UNIST-FESB, Croatia); [Branko Klarin](#) (University of Split, FESB, Croatia)

### **Person Detection in Drone Imagery**

[Sasa Sambolek](#) (High School Tina Ujevica Kutina, Croatia); [Marina Ivasic-Kos](#) (University of Rijeka, Croatia)

### **The climate change at Košice International Airport in 2019**

[Hélia Némethová](#) (Technical University of Košice & Faculty of Aeronautics, Slovakia); [Matej Antoško](#) (Technical University of Košice, Slovakia); [Danijel Vuković](#) (ELEVON Tehnologije, Croatia); [Ladislav Choma](#), [Marek Pilát](#), [Imrich Harčák](#), [Patrik Šváb](#) and [Sebastian Makó](#) (Technical University of Košice, Slovakia)

**Friday, September 25 14:30 - 16:00**

## **S13: Symposium on IoT - Performance Evaluation and Applications**

Room: BRAC

Chair: Luigi Patrono (University of Salento, Italy)

### **Performance evaluation of LoRa LPWAN technology for mountain Search and Rescue**

[Giulio M. Bianco](#) (University of Roma Tor Vergata, Italy); [Abraham Mejia-Aguilar](#) (EURAC Research, Italy); [Gaetano Marrocco](#) (University of Rome Tor Vergata, Italy)

### **Low-cost LoRaWAN Jammer**

[Toni Perkovic](#) (University of Split, FESB, Croatia); [Dino Sirišćević](#) (University of Split, Croatia)

### **Integrating BIM and IoT Technologies in Innovative Fire Detection Systems**

[Iaria Sergi](#) and [Ada Malagnino](#) (University of Salento, Italy); [Roberto Rosito](#) and [Vincenzo Lacasa](#) (ITS, Italy); [Angelo Corallo](#) (unknown); [Luigi Patrono](#) (University of Salento, Italy)

### **Performance Evaluation of Indoor Positioning Systems based on Smartphone and Wearable Device**



[Luca Fasano](#), [Iliaria Sergi](#) and [Piercosimo Rametta](#) (University of Salento, Italy); [Aritz Bilbao](#) (DEUSTO, Italy); [Aitor Almeida](#) (DeustoTech - Deusto Institute of Technology, Spain); [Luigi Patrono](#) (University of Salento, Italy)

**A Novel Approach based on Microservices Architectures and Computer Vision to improve access to Culture Heritage** 

[Marco La Franca](#), [Luca Marino](#) and [Leonardo Martorana](#) (ARANCIA-ICT, Italy); [Marco Leo](#) (National Research Council of Italy, Italy); [Pierluigi Carcagni](#) and [Cosimo Distante](#) (CNR, Italy); [Iliaria Sergi](#) and [Luigi Patrono](#) (University of Salento, Italy)

## S14: eHealth-Modelling

Room: HVAR

Chair: Andrea Sciarrone (University of Genoa, Italy)

**Improving Maternal Risk Analysis in Public Health Systems** 

[Silas Santiago Lopes Pereira](#) (Federal Institute of Ceará, Brazil); [Raimundo Valter Filho](#) (IFCE, Brazil); [Ronaldo Ramos](#) (Instituto Federal de Educação Ciência e Tecnologia do Ceará, Brazil); [Antonio Oliveira](#) (Federal Institute of Ceara, Brazil); [Mário W. L. Moreira](#) (Federal Institute of Education, Science, and Technology of Ceará, Brazil); [Joel J. P. C. Rodrigues](#) (Federal University of Piauí (UFPI), Brazil & Instituto de Telecomunicações, Portugal); [Petar Solic](#) (University of Split & FESB, Croatia)

**Modeling the Epidemic Outbreak and Dynamics of COVID-19 in Croatia** 

[Ante Lojić Kapetanović](#) and [Dragan Poljak](#) (University of Split, Croatia)

## S15: Energy-Renewable Energy

Room: KORČULA

**Solar power plant with short diffuser concept: An Overview of development** 

[Sandro Nizetic](#) and [Mišo Jurčević](#) (University of Split, FESB, Croatia)

**Water Flow Measurement in the Pipes of a Thermo-Electric Hybrid Solar System** 

[Andrei Burta](#) and [Roland Szabo](#) (Politehnica University Timisoara, Romania)

**Variation in the Environmental Sustainability Performance of Bioenergy** 

[Yee Van Fan](#) and [Jiří Klemesš](#) (Brno University of Technology, Czech Republic)

**Enhancing energy efficiency for photovoltaic cells using thermoelectric hybridization** 

[Daniel Tudor Cotfas](#) and [Petru Adrian Cotfas](#) (Transilvania University of Brasov, Romania)

**Study of photovoltaic cell degradation under rapid light variation** 

[Petru Adrian Cotfas](#) and [Daniel Tudor Cotfas](#) (Transilvania University of Brasov, Romania); [Sergiu Spataru](#) (Technical University of Denmark, Denmark)

Friday, September 25 16:00 - 17:30

## S29: Engineering Modeling of Power Systems

Room: VIS

Chair: Josip Music (University of Split, Croatia)

**Bayesian optimization of external lightning protection system of HV substations** 

[Petar Sarajcev](#) (University of Split, Croatia)

**Analysis of the Magnetic Field Distribution in Inductive Power Transfer Systems under the Influence of Aluminum Shielding**



[Timo Lämmle](#) (MAHLE International GmbH, Germany)

**Power losses analysis of a three-phase quasi-Z-source inverter** 

[Ivan Grgić](#) (University of Split, Croatia); [Matija Bubalo](#) (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Split, Croatia); [Dinko Vukadinović](#) (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Croatia); [Mateo Bašić](#) (University of Split, FESB, Croatia)

# UAS3: Aerotech and Aerospace Applications for Unmanned Aerial Systems (UAS) III

Room: MLJET

Chair: Danijel Vuković (ELEVON Tehnologije, Croatia)

## **The drone air-path development**

[Branko Klarin](#) (University of Split, FESB, Croatia); [Goran Gasparovic](#) (UNIST-FESB, Croatia); [Dani Vrsalović](#) (University of Split, Croatia); [Mišo Jurčević](#) (University of Split, FESB, Croatia)

## **Design and Human-in-the-loop Simulation of Radio Controlled Fixed Wing Aircraft**

[Milan Vrdoljak](#) (University of Zagreb, FSB, Croatia); [Pero Prebeg](#), [Mirna Barać](#) and [Marijan Andrić](#) (University of Zagreb, FSB, Croatia)

## **Analysis of Manual Control for Personal Aerial Vehicle with Flight Control System Degradation**

[Milan Vrdoljak](#) (University of Zagreb, FSB, Croatia); [Tim Mehling](#), [Omkar Halbe](#), [Matthias Heller](#) and [Manfred Hajek](#) (Technical University of Munich, Germany)

## **Total Energy-Based Approach in VX-3 UAV Flight Dynamics Analysis**

[Danijel Vuković](#) (ELEVON Tehnologije, Croatia); [Rudolf Andoga](#) (Technical University of Kosice, Slovakia); [Goran Gasparovic](#) (UNIST-FESB, Croatia); [Miroslav Kelemen](#) (Technical University of Košice, Slovakia)

## **The Research Methodology of the Impact of Self-regulatory Methods on Pilot's Performance - Partial Results**

[Peter Kalavsky](#) and [Matej Antoško](#) (Technical University of Košice, Slovakia); [Danijel Vuković](#) (ELEVON Tehnologije, Croatia); [Branko Mikula](#), [Jozef Sabo](#), [Róbert Rozenberg](#) and [Pavol Petříček](#) (Technical University of Košice, Slovakia); [Hélia Némethová](#) (Technical University of Košice & Faculty of Aeronautics, Slovakia)

## Friday, September 25 16:15 - 17:45

### S16: Symposium on IoT - Smart Cities

Room: BRAC

## **UnsServ: unstructured peer-to-peer library for deploying services in smart environments**

[Aratz Manterola-Lasa](#) and [Diego Casado-Mansilla](#) (University of Deusto, Spain); [Diego López-de-Ipiña](#) (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain)

## **PADL: a Language for the Operationalization of Distributed Analytical Pipelines over Edge/Fog Computing Environments**

[Josu Díaz-de-Arcaya](#), [Raúl Miñón](#), [Ana Isabel Torre-Bastida](#) and [Javier Del Ser](#) (TECNALIA, Basque Research and Technology Alliance (BRTA), Spain); [Aitor Almeida](#) (DeustoTech - Deusto Institute of Technology, Spain)

## **IoT-DDL: Device Description Language for a Programmable IoT**

[Wyatt Lindquist](#) (Lancaster University, United Kingdom (Great Britain)); [Ahmed Khaled](#) (Northeastern Illinois University, USA); [Sumi Helal](#) (Lancaster University, United Kingdom (Great Britain))

## **A data visualization solution for the smart city to exploit environmental data by means of 3d buildings**

[Stefano Pino](#) (Engineering Ingegneria Informatica Spa, Italy); [Enza Giangreco](#), [Davide Storelli](#), [Marco Alessi](#) and [Alessio Camillò](#) (Engineering Ingegneria Informatica S.p.A., Italy)

## **Application of IoT technology for the improvement of quality of life in isolated places**

[Hrvoje Rudeš](#), [Damir Kljajić](#) and [Zoran Civadelic](#) (Ericsson Nikola Tesla, Croatia)


### S17: eHealth-Elderly Care and Monitoring


Room: HVAR


Chair: Luigi Patrono (University of Salento, Italy)

## **A New Approach to Monitor Sarcopenic Patients based on IoT Technologies**

[Francesco Ciliberti](#), [Francesco Giusto](#) and [Luigi Accetta](#) (Intellego, Italy); [Giuseppe Vergari](#), [Ilaria Sergi](#) and [Luigi Patrono](#) (University of Salento, Italy)

**A Smart Pill Dispenser to support Elderly People in Medication Adherence**   
[Simone Casciaro](#), [Lucio Massa](#), [Ilaria Sergi](#) and [Luigi Patrono](#) (University of Salento, Italy)


**e-Health Monitoring System for Senior Citizens based on LoRa Technology**   
[Jose Paulo Lousado](#) (CISEd - Polytechnic Institute of Viseu, Portugal); [Sandra Antunes](#) (CI&DEI, Portugal)


**Electronic Sensory System for Structural Health Monitoring Applications**   
[Romina Paolucci](#), [Mirco Muttillio](#), [Michael Di Luzio](#), [Rocco Alaggio](#) and [Giuseppe Ferri](#) (University of L'Aquila, Italy)

## S18: Energy-Efficiency and System performance I


Room: KORČULA

Chair: Pawel Oclon (Cracow University of Technology, Poland)

**Model for optimal transition towards a fully electric public transportation system**   
[Josip Vasilj](#) (University of Split, Croatia); [Damir Jakus](#) (University of Split & Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Croatia); [Petar Sarajcevic](#) (University of Split, Croatia); [Anders Grauers](#) (Chalmers University of Technology, Sweden)

**Comprehensive analysis of key parameters for the city-scale natural gas consumption**   
[Dušan Bajatović](#) (Faculty of Technical Sciences, Serbia); [Aleksandar Andjelkovic](#) (University of Novi Sad, Serbia)

**Transient transition of high-speed and high-frequency ethanol droplet train impingement on the heated indium tin oxide (ITO) surface**   
[Baris Burak Kanbur](#) (Nanyang Technological University & Singapore Centre for 3D Printing, Singapore); [Lee Zhao Hui](#) and [Fei Duan](#) (Nanyang Technological University, Singapore)

**Estimation the influence of engine parameters on exhaust residual gas fraction of a V-twin engine**   
[Nguyen Xuan Khoa](#) and [Ocktaeck Lim](#) (University of Ulsan, Korea (South))

**Solar Irradiance Measurement for a Thermo-Electric Hybrid Solar System**   
[Andrei Burta](#) and [Roland Szabo](#) (Politehnica University Timisoara, Romania)


Saturday, September 26


Saturday, September 26 9:00 - 10:30

## S19: Symposium on IoT - Modeling

Room: BRAC

Chair: Diego López-de-Ipiña (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain)

**Parking Lot Profiling Analysis: the City of Split Use Case**   
[Goran Jelen](#) (Faculty of Electrical Engineering and Computing, Croatia); [Vedran Podobnik](#) (University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia); [Jurica Babic](#) (University of Zagreb & Faculty of Electrical Engineering and Computing, Croatia)

**A Live Smart Parking Demonstrator: Architecture, Data Flows and Deployment**   
[Moussa Coulibaly](#) (ENSEM, NEST Team, Morocco); [Ahmed Errami](#) (ENSEM, Hassan II University, Morocco); [Sofia Belkhala](#) (ENSEM & FRDISI, Morocco); [Hicham Medromi](#) (ENSEM, Hassan II University, Morocco)

**Stock&Buy: A New Demand Forecasting Tool For Inventory Control**   
[Fatima Zohra Benhamida](#) (Ecole Nationale Supérieure en Informatique & Laboratoire des Méthodes de Conception des Systèmes, Algeria); [Ouahiba Kaddouri](#) (Ecole Nationale Supérieure d'Informatique, Algeria); [Tahar Ouhrouche](#) and [Mohamed Benaichouche](#) (Stock&Buy, Norway); [Diego Casado-Mansilla](#) (University of Deusto, Spain); [Diego López-de-Ipiña](#) (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain)

**Specialized Vehicle CAN Bus Simulator: From Modelling to Validation** 

[Hrvoje Vdović](#) (University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia); [Jurica Babic](#) (University of Zagreb & Faculty of Electrical Engineering and Computing, Croatia); [Vedran Podobnik](#) (University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia)

**Lasting and Spillover Effect of Ambient Eco-Feedback in the Office-based Workplace** 

[Diego Casado-Mansilla](#), [Ane Irizar-Arrieta](#), [Cruz E. Borges](#), [Mikel Solabarrieta-Roman](#), [Aratz Manterola-Lasa](#) and [Oihane Kamara-Esteban](#) (University of Deusto, Spain); [Apostolos C. Tsolakis](#) and [Stelios Krinidis](#) (Centre for Research and Technology Hellas, Greece); [Dimitrios Tzouvaras](#) (Information Technologies Institute, Greece); [Diego López-de-Ipiña](#) (Deusto Institute of Technology - DeustoTech, University of Deusto, Spain)

## S20: Energy-Efficiency and System performance II

Room: HVAR

Chair: Duje Čoko (University of Split, FESB, Croatia)

**Performance evaluation and comparison according to pressure change of fuel pump using DME fuel** 

[Bumgi Baek](#) and [Ocktaeck Lim](#) (University of Ulsan, Korea (South))

**The study of injection pressure on spray characteristic under GCI conditions using Gasoline-Biodiesel Blended and Gasoline-Lubricity Blended** 

[Kong Xiantian](#) and [Ocktaeck Lim](#) (University of Ulsan, Korea (South))

**Study on the Effect of Intake Flow by Various Intake Port Design on Small Motorcycles Engine** 

[Bambang Wahono](#) (Indonesian Institute Of Sciences, Indonesia); [Ocktaeck Lim](#) (University of Ulsan, Korea (South))

**Analysis of Thermoelectric Generators Thermally Connected in Serial and Parallel Combinations** 

[Ivan Škalic](#) (University of Split, FESB, Croatia); [Ivan Marinovic](#) (University of Split, Croatia)

**Natural convection of molten PCM in a finned enclosure used in PV/PCM systems** 

[Çağatay Yıldız](#) and [Muslum Arici](#) (Kocaeli University, Turkey); [Sandro Nizetic](#) (University of Split, FESB, Croatia)


## S21: Energy-Efficiency and System performance III

Room: KORČULA


Chair: Muslum Arici (Kocaeli University, Turkey)

**A MILP-Based Iteration Method for Heat Exchanger Network Synthesis** 


[Bohong Wang](#) (Brno University of Technology, Czech Republic); [Hon Huin Chin](#), [Petar Varbanov](#) and [Jiří Klemeš](#) (Brno University of Technology – VUT Brno, Czech Republic)

**The effects of ignition timing on residual gas, effective release energy, engine power and engine emissions characteristics with different speed** 

[Quach Nhu Y](#) and [Ocktaeck Lim](#) (University of Ulsan, Korea (South))

**Investigation on pilot injection with various Start of Injection 2 (SOI2) and fuel injection pressure of GB20 fuel in common rail direct injection diesel engine** 

[Ardhika Setiawan](#) (Graduate School of Mechanical Engineering, University of Ulsan, Korea (South)); [Ocktaeck Lim](#) (University of Ulsan, Korea (South))

**A study on the spray development under non-vaporizing condition using gasoline-biodiesel blend in constant volume combustion chamber** 

[Nguyen Duy](#) and [Ocktaeck Lim](#) (University of Ulsan, Korea (South))

Saturday, September 26 12:15 - 13:45

## S22: Energy-Power Systems and Smart Microgrids I

Room: BRAČ

Chair: Josip Vasilj (University of Split, Croatia)



### **Analysis of Key Drivers and Challenges Facing Microgrid Deployment**

[Micki Grover](#) (Emerson Rosemount, USA); [Ona Egbue](#) (University of South Carolina Upstate, USA)

### **Distributed optimization of power profiles on a local energy community using blockchain**

[Matthieu Stephant](#) (HEI-Yncréa/L2EP, France); [Kahina Hassam-Ouari](#) (HEI - Yncréa, France); [Dhaker Abbes](#) (Ecole des Hautes Etudes d'Ingénieur (HEI) Yncréa Hauts-de-France, France); [Antoine Labrunie](#) (Greenbirdie, France); [Benoît Robyns](#) (HEI-Yncréa/L2EP, France)

### **A multiobjective-based approach for demand-side management in smart distribution grids**

[Vitor A. C. C. Almeida](#) (Federal University of Piauí (UFPI), Brazil); [Igor Silva](#) and [Ricardo A. L. Rabelo](#) (Federal University of Piauí (UFPI), Brazil); [Joel J. P. C. Rodrigues](#) (Federal University of Piauí (UFPI), Brazil & Instituto de Telecomunicações, Portugal); [Petar Solic](#) (University of Split & FESB, Croatia)

### **A Multi-Objective Approach for Energy Management in a Microgrid Scenario**

[Igor Silva](#) and [Ricardo A. L. Rabelo](#) (Federal University of Piauí (UFPI), Brazil); [Joel J. P. C. Rodrigues](#) (Federal University of Piauí (UFPI), Brazil & Instituto de Telecomunicações, Portugal); [Arthur Carvalho](#) (Miami University, Farmer School of Business, USA)

### **Efficient GaN Interface for emerging self-consumption scenarios in DC microgrids**

[Massimo Merenda](#) (University Mediterranea of Reggio Calabria, Italy); [Giovanna Adinolfi](#) (ENEA & University of Salerno, Italy); [Demetrio Iero](#) (University Mediterranea of Reggio Calabria, Italy); [Angelo Merola](#) and [Giorgio Graditi](#) (ENEA, Italy); [Francesco G. Della Corte](#) (University Mediterranea of Reggio Calabria, Italy)

## S23: Energy-Power Systems and Smart Microgrids II

Room: HVAR

Chair: Panagiota Antoniadou (Aristotle University of Thessaloniki, Greece)

### **Methods for voltage sag source location by Cluster Algorithm and Decision Rule Labeling with a Comparative Approach of K-means and DBSCAN Clustering Algorithms**

[José Lima Filho](#) (Universidade Federal do Piauí, unknown & Universidade Estácio de Sá, Brazil); [Fabbio Borges](#) (USP, Brazil); [Ricardo A. L. Rabelo](#) (Federal University of Piauí (UFPI), Brazil); [Ivan Silva](#) (Federal University of Piauí, Brazil); [Ricardo Teixeira Júnior](#) (Estácio CEUT, Brazil); [Antônio Oseas](#) (Universidade Federal do Piauí, Brazil)

### **An adaptive data compression mechanism for Wireless Sensor Networks in the Smart Grid Scenarios**

[Douglas Mendes](#) (State University of Piauí, Brazil); [Artur Veloso](#) and [Ricardo A. L. Rabelo](#) (Federal University of Piauí (UFPI), Brazil); [Joel J. P. C. Rodrigues](#) (Federal University of Piauí (UFPI), Brazil & Instituto de Telecomunicações, Portugal); [José dos Reis, Jr.](#) (Federal University of Piauí, Brazil)

### **Dynamic Multi-agent OpenADR Virtual Nodes for Distributed Demand Response Schemes**

[Christos Patsonakis](#) and [Apostolos C. Tsolakis](#) (Centre for Research and Technology Hellas, Greece); [Dimosthenis Ioannidis](#) and [Dimitrios Tzovaras](#) (Information Technologies Institute, Greece)

### **Ensemble Learning Approach to Power System Transient Stability Assessment**

[Antonijo Kunac](#) (University of Split, FESB, Croatia); [Petar Sarajcevic](#) (University of Split, Croatia)

## Saturday, September 26 14:00 - 15:30

## S24: Energy - Cleaner Environment I

Room: BRAC

Chair: Yee Van Fan (Brno University of Technology, Czech Republic)

### **Multi-Response Methodology for the optimal elimination of Fe (III) from industrial wastewater by adsorption using activated carbon from olive stone waste**

[Marina Corral Bobadilla](#) and [Ruben Lostado Lorza](#) (University of La Rioja, Spain); [Fátima Somovilla Gómez](#) (ASOCIIR, Spain); [Rubén Escribano García](#) (IK4-LORTEK, Spain); [Eliseo P. Vergara González](#) (University of Oviedo, Spain)

### **Bayesian networks and Support Vector Classifier in damage risk assessment of RC prefabricated building structures in mining areas**

[Janusz Rusek](#) (AGH University of Science and Technology in Krakow, Poland); [Krzysztof Tajduś](#) (Polish Academy of Sciences, Poland); [Karol Firek](#) (AGH University of Science and Technology in Krakow, Poland); [Adrian Jędrzejczyk](#) (AGH University of Science and Technology in Krakow, Croatia)

**Behaviour of Fly ash Geopolymer at High Temperature** 

[Izabela Hager](#), [Mateusz Sitarz](#) and [Katarzyna Mróz](#) (Cracow University of Technology, Poland)

**An investigation on the performance characteristics of the electric bicycle using semi-automatic transmission** 

[Le Trong Hieu](#) and [Ocktaeck Lim](#) (University of Ulsan, Korea (South))

## S25: Energy - Cleaner Environment II

Room: HVAR

Chair: Josef Maroušek (Institute of Technology and Business in České Budějovice & Czech Republic, Czech Republic)

**A study of optimisation NOx reduction quality with different types of urea injectors in an SCR system** 

[Muhammad Aditya Wardana](#) (Indonesian Institute of Sciences (LIPI), Indonesia); [Ocktaeck Lim](#) (University of Ulsan, Korea (South))

**Plastic Replacements: Win or Loss?** 

[Jiří Klemeš](#) and [Yee Van Fan](#) (Brno University of Technology, Czech Republic)

**IDEA Toolkit: Technology Enhanced Learning for Energy Poverty** 

[Evangelia Vanezi](#) and [Christos Mettouris](#) (University of Cyprus, Cyprus); [Alexandros Yeratziotis](#) (University of Cyprus, unknown); [Tomislav Tkalec](#) (FOCUS Association for Sustainable Development, Slovenia); [Ana Tesija](#) (DOOR Society for Sustainable Development Design, Croatia); [George Angelos Papadopoulos](#) (University of Cyprus, Cyprus)

**Emission of diesel powered vehicle under real operating conditions-impact of emissions control system failure** 

[Ante Kozina](#) (University of Split, FESB, Croatia); [Gojmir Radica](#) (University of Split, Croatia); [Sandro Nizetic](#) (University of Split, FESB, Croatia)

**Experimental investigation of exhaust emission from marine diesel engines** 

[Gojmir Radica](#) (University of Split, Croatia); [Nikola Račić](#) (University of Split, Faculty of Maritime Studies, Croatia); [Maro Jelić](#) (University of Dubrovnik, Croatia); [Luka Mihanović](#) and [Tino Sumić](#) (NAVAL STUDIES, Croatia)