

IEEE CANDO-EPE 2018



IEEE International Conference AND
Workshop in Óbuda on Electrical and
Power Engineering

November 20-21, 2018

Budapest, Hungary



The CANDO-EPE 2018 pendrive proceedings will be provided to all registrants.

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CANDO-EPE 2018

IEEE International Conference AND Workshop in Óbuda on Electrical and Power Engineering

November 20-21, 2018

Budapest, Hungary

Final Program

Table of Contents

WELCOME FROM THE CHAIRS	5
COMMITTEES	6
GENERAL INFORMATION	9
IEEE CANDO-EPE 2018 TECHNICAL PROGRAM	10
AUTHORS INDEX	24
NEXT EVENTS	26

Welcome from the Chairs

Dear participants! At Kandó Kálmán Faculty of Electrical Engineering of Óbuda University we have a long series of the yearly scientific conferences. Now we arrived to the 35th event that is a new starting point for the traditional Kandó Conference. We made it International. Warmly welcome the more than 50 papers from more than 10 countries. The shortening of IEEE Conference AND workshop in Óbuda on Electrical and Power Engineering, the CANDO means that we can do it together, we can step on a higher level in quality and respect. I am sure this conference will contribute to our technical knowledge, to our inter institutional cooperation, to our friendship. Have a good conference!



Péter Kádár
General Chair and Organizing
Committee Chair



Francesco P. Lamacchia
Organizing Committee co-chair

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Krisztián Lamár
Róbert Istók

General Information

Date and Place

CANDO-EPE 2018 will take place on November 20-21, 2018, in Budapest, Hungary.

Official Language

The official language of the conference is English. All presentations, including discussions and submissions, must be made in the official language. No translation will be provided.

Proceedings

Each accepted paper reaching us in time will be published in the Volume of pendrive Proceedings that will be distributed at the conference registration desk.

Opening Hours of the Registration Desk

November 20, Tuesday: 9:00 – 16:30
November 21, Wednesday: 9:00 – 11:00

Presentation

All the presentations can be made by using Power Point. All authors are kindly asked to take their presentation either on CD or USB. To present the paper it is not allowed to use own computer.

All conference rooms are supplied with data projector with PC.

Cancellation and Refund

Cancellation regarding registration fee is possible in written form received no later than November 11, 2018. In this case 80% of the received sum will be transferred back. No reimbursement is possible after this deadline.

Smoking

Please, be so kind to your lungs and your colleagues by not smoking during the sessions and social event of the symposium.

November 20, 2018, Tuesday

Location: Kandó Kálmán Faculty of Electrical Engineering, Óbuda University

Address: Tavaszmező u. 17, H-1084 Budapest

10:00 – 10:20

Opening Ceremony

Room: TA 122

László Nádai, Dean

Péter Kádár, General Chair

Levente Kovács, IEEE HS Chair

10:20 – 10:40

Plenary Session I



The Age of Service Robots

Tamás Haidegger

Óbuda University, EKIK Director, Budapest, Hungary

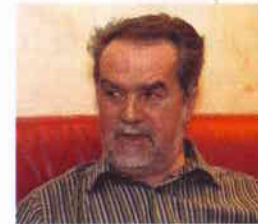
Abstract

Robotics is one of the major megatrends unfolding these days. Clearly, robots are capable of doing much more outside the factories than ever imagined, and that has a great impact on the whole society. This talk deals with two exciting aspects of automated technologies: robots on the roads, as self driving cars, and robots in the operating theaters, performing not only teleoperated surgeries but complex, delicate procedures as well. However, building reliable autonomous systems is not easy, and for another while, human operators will be required as a fallback option. Ensuring the safety of such hybrid control systems is complex, and requires novel human-machine interfaces. Situation awareness remains a key issue, keeping humans in the loop. Arguably, the social robotic sector is growing much faster than any industrial one, and as predicted, there soon will be robots in every household and around.)

10:40 – 11:00

Plenary Session II

The Valuation of the Impact Factor of the Journal Interdisciplinary Description of Complex Systems



Gyula Mester

Óbuda University, Doctoral School of Safety and Security Sciences Budapest, Hungary

Abstract

The Science Citation Index (SCI®) was first presented in Science in 1955. The Annual SCI Journal Citation Reports were officially launched in 1975. The SCI's multidisciplinary database has two purposes: first, to identify what each scientist has published, and second, where and how often the papers by that scientist are cited. Hence, the SCI has always been divided into two author-based parts: the Source Author Index and the Citation Index. By extension, one can also determine what each institution and country has published and how often their papers are cited. The Web of Science® (WoS)—the SCI's electronic version—links these two functions: an author's publication can be listed by chronology, by journal, or by citation frequency. The Science Citation Index was launched in 1964 and the Annual SCI Journal Citation Reports were officially launched in 1975. The impact factor was devised by Eugene Garfield: in any given year, the impact factor of a journal is the number of citations, received in that year, of articles published in that journal during the two preceding years, divided by the total number of articles published in that journal during the two preceding years. The definition of the impact factor has been implemented on the evaluation of the impact factor of the journal: Interdisciplinary Description of Complex Systems.)

11:00 – 11:30 Coffee Break

November 20, 2018, Tuesday

11:30 – 13:30 **Session I** Room: TA 122

Chair: Ervin Rác

- 11:30 Comparison of Active and Passive Balancing by a Long Term Test Including a Post-Mortem Analysis of all Single Battery Cells
Andreas Ziegler, David Oeser, Bernhard Arndt, Ansgar Ackva
University of Applied Sciences Wuerzburg-Schweinfurt, Bad Neustadt an der Saale, Germany
- 11:50 Effectiveness of Active Balancing on High Dispersion Batteries
David Oeser, Andreas Ziegler, Bernhard Arndt, Ansgar Ackva
University of Applied Sciences Wuerzburg-Schweinfurt, Technology Transfer Centre for E-Mobility, Bad Neustadt an der Saale, Germany
- 12:10 Plasma ignition and current control considerations for magnetron sputtering power supplies
Róbert Rossi Madarász
Óbuda University, Budapest, Hungary
András Kelemen, Albert-Zsombor Fekete
Sapientia Hungarian University of Transylvania, Tîrgu Mures, Romania
- 12:30 New concepts for miniaturized MEMS based power systems
Ulrich Mescheder, Shervin Keshavarzi
Furtwangen University, Furtwangen, Germany
Surjitsinh Chauhan
Canvys - Visual Technology Solutions, Donaueschingen, Germany

- 12:50 Decentralized blockchain flexibility system for Smart Grids: Requirements engineering and use cases
Luigi D'Oriano, Giuseppe Mastandrea, Giuseppe Rana
Innovation Unit Energy@Work S.C.A.R.L. Brindisi, Italy
Giuseppe Raveduto, Vincenzo Croce, Matteo Verber, Massimo Bertoncini
Research and Development Department Engineering Ingegneria Informatica S.p.A. Trento, Italy
- 13:10 Energy Saving Transmission Technique for Poisson Distributed Data Exploiting Supportive Transmission in Feedback Channel
Peter Farkaš
Slovak University of Technology, Bratislava, Slovakia
Katarína Farkašová, Eugen Ružický
Pan-European University, Bratislava, Slovakia

11:30 – 13:30

Session II

Room: TA 07 (Library)

Chair: Ingo Kunold

- 11:30 Development of a modular smart wheelchair
Achim Bumüller, Katrin Skerl
Furtwangen University, Furtwangen, Germany
- 11:50 Stream machine learning on vehicle data
Thomas Jacob, Stefan Kubica
Wildau Technical University of Applied Science, Wildau, Germany
Vittorio Rocco
University of Rome Tor Vergata, Roma, Italy
- 12:10 Approach for a fast automatic Control of Drive with elastic shaft
Robert Hönl
University of Applied Sciences, Furtwangen, Germany
- 12:30 Using TCSC to improve the dynamic stability of the power system
Zsolt Čonka, Dušan Medved', Michal Kolcun, Stanislav Ilenin, Ján Zbojovský
Technical University of Košice, Košice, Slovakia
Gyorgy Morva, Bagi Tamás
University of Óbuda Budapest, Hungary
- 12:50 Some Effects of Harmonics on Low Voltage Loads
Mircea Buzdugan
Technical University of Cluj-Napoca, Cluj-Napoca, Romania
- 13:10 Device Classification for NILM using FIT-PS compared with Standard Signal Forms
Daniel Weißhaar, Pirmin Held, Steffen Mauch, Dirk Benyoucef
Furtwangen University, Furtwangen, Germany

13:30 – 14:20

Lunch

14:20 – 16:20

Session III

Room: TA 122

Chair: Péter Kádár

- 14:20 Capacitive sensors used for surface charge measurements
Jaroslav Petráš, Jaroslav Džmura
Technical University of Košice, Košice, Slovakia
- 14:40 Wind Generation Flicker Modelling and Analysis in Simulation Environment
Toni Varga, Predrag Marić, Marko Vukobratović, Zvonimir Klaić
University of Osijek, Osijek, Croatia
- 15:00 Demonstration of utilizing the waste or residual heat of a solar cell
Balázs Hörömpöli, Ervin Rácz, Vilmos Ákos Csörgő
Óbuda University, Budapest, Hungary
- 15:20 Geothermal Energy in the Context of the Energy Transition Process
Nicole Bartels, Gregor Bussmann, Roman Ignacy
Hochschule Bochum, Bochum, Germany
- 15:40 Reduced Torque Ripple based on a Simplified Structure Average Torque Control of Switched Reluctance Motor for Electric Vehicles
Mahmoud Hamouda*, **, László Számel**
** Mansoura University, Mansoura, Egypt*
*** Budapest University of Technology and Economics, Budapest, Hungary*
- 16:00 Remote Control System at 110/20 kV Substation for Wind Park "Bogdanci"
Vasilija Sarac, Tatjana Atanasova-Pacemka
University Goce Delcev, Stip, R. Macedonia

Chair: Dóra Maros

- 14:20 Multi-user low-cost Smart Home Control
Jiri Spale
Furtwangen University, Furtwangen im Schwarzwald, Germany
- 14:40 Concept of Smart Building Cyber-physical Systems Including Tamper Resistant Endpoints
Andreas Puesche*, David Bothe, Marco Niemeyer***, Sabine Sachweh*, Norbert Pohlmann**, Ingo Kunold*****
** University of Applied Sciences and Arts Dortmund, Dortmund, Germany*
*** Institute for Internet Security, University of Applied Sciences Gelsenkirchen, Gelsenkirchen, Germany*
**** Institute of communication technologies, University of Applied Sciences and Arts Dortmund, Dortmund, Germany*
- 15:00 Known security issues of IoT systems
Tamas Szadeczky
Óbuda University, Budapest, Hungary
Gergely Kovacs
National University of Public Service, Budapest, Hungary
- 15:20 LED as transmitter and receiver in POF – based bidirectional communication systems
Volker Lange, Robert Hönl
Furtwangen University, Furtwangen, Germany
- 15:40 IoT Sensor Data Acquisition and Storage System Using Raspberry Pi and Apache Cassandra
Katalin Ferencz, József Domokos
Sapientia Hungarian University of Transylvania, Tîrgu Mureş, Romania

- Using Thermal Imaging Cameras to Test Electronical Systems
György Györök, Bertalan Beszédes
Óbuda University, Alba Regia Technical Faculty, Székesfehérvár, Hungary
- Impact of the first wind farm on reliability of composite BIH power system
Milenko Tomić
Department of Licensing and Technical Affairs State Electricity Regulatory Commission Tuzla, Bosnia and Herzegovina
Tatjana Konjić
*Department of Power Network and Systems
Faculty of Electrical Engineering
University of Tuzla Tuzla, Bosnia and Herzegovina*
Alen Hatibović
*Department of Electrical Engineering Renewable Energy Utilization
Optimum Solar Kft. Baja, Hungary*
- System Tests and Simulations for a Power Efficient Portable Solar Panel
Laura-Mihaela Leluțiu
*Electrical Engineering and Computer Science,
Transilvania University of Brasov, Romania*
Istók Róbert
Power System Department, Óbuda University, Budapest, Hungary
- The Evolution of the Aircraft Electric Power Systems
M. Schrötter, R. Bréda, R. Andoga and L. Főző
Technical university of Kosice, Košice, Slovakia

Chair: Gyula Mester

- 16:40 New way in design of a power station earthing system
Stanislav Ilenin, Zsolt Čonka, Michal Ivančák, Michal Kolcun
Technical University of Košice, Košice, Slovak Republic
Gyorgy Morva
University of Óbuda, Budapest, Hungary
- 17:00 Project design of the electric power quality analyser using an open-source platform
Dušan Medved', Zsolt Čonka, Michal Kolcun, Martin Kanálik, Ján Zbojovský, Marek Pavlík
Technical University in Košice, Košice, Slovakia
- 17:20 Analysis of the thermal field of electric power equipment
Dušan Medved', Zsolt Čonka, Michal Kolcun
Technical University in Košice, Košice, Slovakia
- 17:40 Automized, Simulation-Based, Technical and Economical Rating of Semi-Self-Sufficient Electrical Energy Systems
Michael Fuchs, Pavlo Ponomarov, Bernhard Arndt
University of Applied Sciences Würzburg/Schweinfurt, Bad Neustadt, Germany
- 18:00 The shielding effectiveness of building material – brick filled with mineral wool
Marek Pavlík, Ján Zbojovský, Lukáš Kruželák, Michal Ivančák
Technical University of Košice, Košice, Slovakia
- 18:20 Detecting Bad Internal Resistance of LV HRC Fuse Links Using Infrared Thermography
Hrvoje Glavaš*, Daniel Muštran, Tomislav Barić***
**University of Osijek, Osijek, Croatia*
*** HEP Distribution System Operator, Elektroslovonija Osijek, Osijek, Croatia*

Chair: Robert Hoenl

- 16:40 Enhancement of the Switched Reluctance Motor Performance for Electric Vehicles Applications Using Predictive Current Control
Reyad Abdel-Fadil*, **, László Számel**
** Aswan University, Aswan, Egypt*
*** Budapest University of Technology and Economics, Budapest, Hungary*
- 17:00 A Gradient Descent Based Method For Maximum Efficiency Calculation
Felix Oberdorf*, Kevin McFall, Sebastian Moros*, Joachim Kempkes***
** University of Applied Sciences Würzburg-Schweinfurt, Schweinfurt, Germany*
*** Kennesaw State University, Kennesaw, United States of America*
- 17:20 Single Wire Grounding Electrode that penetrates Hemi-spherical Non-homogeneity
Nenad Cvetkovic*, Marinko Barukcic, Dejan Jovanovic*, Zeljko Hederic****
** University of Nis, Nis, Serbia*
*** J.J. Strossmayer University, Osijek, Croatia*
- 17:40 LED Street Lighting Application in Municipality of Tirana
Aida Spahiu, Lindita Dhamo, Orion Zavalani
Polytechnic University of Tirana, Tirana, Albania

Authors' Index

Abdel-Fadil, Reyad	19	Hamouda, Mahmoud	15
Ackva, Ansgar	12, 12	Hatibović, Alen	17
Aloisio, Patrizio	21	Hatibovic, Alen	20
Andoga, R.	17	Hederic, Zeljko	19
Arndt, Bernhard	12, 12, 18	Held, Pirmin	14
Atanasova-Pacemaska, Tatjana	15	Hönl, Robert	14, 16
Bács, Arnold	22	Hörömpöli, Balázs	15
Bagi, Tamás	14, 23	Ignacy, Roman	15
Bakó, László	22	Ilenin, Stanislav	14, 18
Bálint, Krisztián	23	Imre, Emőke	23
Barić, Tomislav	18	Istók, Róbert	17, 20
Bartels, Nicole	15	Ivančák, Michal	18, 18
Barukcic, Marinko	19	Jacob, Thomas	14
Benyoucef, Dirk	14	Jovanovic, Dejan	19
Bertoncini, Massimo	13	Kádár, Péter	20
Beszédes, Bertalan	17	Kanálík, Martin	18
Bothe, David	16	Kelemen, András	12
Bréda, R.	17	Kempkes, Joachim	19
Bumüller, Achim	14	Keshavarzi, Shervin	12
Bussmann, Gregor	15	Klaić, Zvonimir	15
Buzdugan, Mircea	14	Kolcun, Michal	14, 18, 18, 18
Chauhan, Surjitsinh	12	Konjić, Tatjana	17
Čonka, Zsolt	14, 18, 18, 18, 23	Kovacs, Gergely	16
Croce, Vincenzo	13	Kruželák, Lukáš	18, 22, 23
Csergő, Vilmos Ákos	15	Kubica, Stefan	14
Cvetkovic, Nenad	19	Kunold, Ingo	16
D'Incà, Massimo	21	Lamacchia, Francesco Paolo	21
D'Oriano, Luigi	13	Lange, Volker	16
Daguin, Marco	21	Lelutju, Laura-Mihaela	17, 20
Dhamo, Lindita	19	Madarász, Róbert Rossi	12
Domokos, József	16	Marek Pavlik	18, 18, 22, 23, 23
Džmura, Jaroslav	15, 22	Marić, Predrag	15
Farkaš, Peter	13	Mastandrea, Giuseppe	13
Farkašová, Katarína	13	Mauch, Steffen	14
Fedrizzi, Massimiliano	21	McFall, Kevin	19
Fehér, Béla	22	Medved, Dušan	14, 18, 18, 23, 23
Fekete, Albert-Zsombor	12	Mescheder, Ulrich	12
Ferencz, Katalin	16	Mester, Gyula	11
Ferrarese, Alberto	21	Mészáros, Alexander	21
Főző, L.	17	Morgan, Fearghal	22
Fuchs, Michael	18	Moros, Sebastian	19
Gáll, Vladimír	21	Morva, Gyorgy	14, 18
Glavaš, Hrvoje	18	Muštran, Daniel	18
Györök, György	17	Mutani, Guglielmina	21
Haidegger, Tamás	10	Niemeyer, Marco	16
Hajdu, Szabolcs	22	Oberdorf, Felix	19

Oeser, David	12, 12
Perfetto, Giuseppe	21
Petráš, Jaroslav	15, 22
Pohlmann, Norbert	16
Ponomarov, Pavlo	18
Puesche, Andreas	16
Rácz, Ervin	15, 23
Raimondo, Luca	21
Rana, Giuseppe	13
Raveduto, Giuseppe	13
Roccasalva, Giuseppe	21
Rocco, Vittorio	14
Rózsa, Pál	23
Ružický, Eugen	13
Sachweh, Sabine	16
Sarac, Vasilija	15
Schrötter, M.	17
Skerl, Katrin	14
Spahiu, Aida	19
Spale, Jiri	16
Szadeczky, Tamas	16
Számel, László	15, 19
Tomić, Milenko	17
Varga, Toni	15
Verber, Matteo	13
Voulaz, Jean	21
Vukobratović, Marko	15
Weißhaar, Daniel	14
Zavalani, Orion	19
Zbojovsky, Ján	14, 18, 18, 22, 23, 23
Ziegler, Andreas	12, 12

Next Events

SAMI 2019

IEEE 17th World Symposium
on Applied Machine
Intelligence and Informatics



January 24-26, 2019

Herl'any, Slovakia



Welcome to SAMI 2019

<http://conf.uni-obuda.hu/sami2019>

IEEE Publication



IEEE 13th International Symposium on Applied Computational Intelligence and Informatics

SACI 2019 | May 29-31, 2019

Timisoara, Romania

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<http://conf.uni-obuda.hu/saci2019>

IEEE Publication



IWOBI 2019

IEEE International Work Conference on Bioinspired Intelligence, July 3-5, 2019 - Budapest, Hungary

IWOBI 2019



SISY 2019

September 12-14, 2019

Subotica, Serbia

17th IEEE International Symposium on Intelligent Systems and Informatics



IEEE Publication



<http://conf.uni-obuda.hu/sisy2019>