

2016 2nd International Conference on

Intelligent Energy and Power Systems

IEPS '2016

CONFERENCE PROGRAM

June 7 – 11, 2016
KYIV, Ukraine

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ORGANIZERS & PARTNERS

Institute of Electrodynamics, National Academy of Sciences of Ukraine
National Technical University of Ukraine “Kyiv Polytechnic Institute”
IEEE Ukraine Section
Fund Lady Science

CONFERENCE LOCATION

National Technical University of Ukraine “Kyiv Polytechnic Institute”
37, Peremohy ave., Kyiv, 03056, UKRAINE

CONFERENCE SHORT SCHEDULE

June 6	Arrival, registration, accommodation
June 7	Registration, opening ceremony, plenary session
June 7, 8	Sessions
June 9	Closing ceremony
June 10, 11	Departure

REQUIREMENTS

Official language of the IEPS '2016 is English.

Time limit for oral report – 10 minutes.

Presentation for oral report should be prepared in PPT or PDF format.

Presentation for poster report should be printed on paper sheet of A1 size, portrait orientation.

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CONFERENCE SCHEDULE

Date	Time	Event	Location
June 7	09:00-10:00	Registration	NTUU "KPI", Academic Building #1, Hall of Scientific Council
	10:00-11:30	Opening ceremony, plenary session	NTUU "KPI", Academic Building #1, Hall of Scientific Council
	11:30-12:00	Coffee-break	NTUU "KPI", Academic Building #1, cafe "Alma-mater"
	12:00-13:00	Plenary session	NTUU "KPI", Academic Building #1, Hall of Scientific Council
	13:00-14:00	Lunch	NTUU "KPI", Student food center
	14:00-15:30	Oral session <u>Topic 4</u> : Industrial Electronics and Electrical Drives <u>Topic 5</u> : Special Power Electronic Systems and Applications	Library of NTUU "KPI", room 15
	15:30-16:00	Coffee-break. Poster session (Topics 4, 5)	Library of NTUU "KPI", 6 th floor hall
	16:00-17:00	Oral session <u>Topic 4</u> : Industrial Electronics and Electrical Drives <u>Topic 5</u> : Special Power Electronic Systems and Applications	Library of NTUU "KPI", room 15
	17:30	Welcome party	NTUU "KPI", Academic Building #1, cafe "Alma-mater"
June 8	09:00-10:30	Oral session <u>Topic 1</u> : Modern Energy Systems and Power Electronics	Library of NTUU "KPI", room 15
	10:30-11:00	Coffee-break. Poster session (Topics 1, 2, 3)	Library of NTUU "KPI", 6 th floor hall
	11:00-13:00	Oral session <u>Topic 1</u> : Modern Energy Systems and Power Electronics	Library of NTUU "KPI", room 15
	13:00-14:00	Lunch	NTUU "KPI", Student food center
	14:00-15:30	Oral session <u>Topic 2</u> : Renewable Energy Systems and Distributed Generation <u>Topic 3</u> : Intelligent and Adaptive Energy Systems	Library of NTUU "KPI", room 15
	15:30-16:00	Coffee-break. Poster session (Topics 1, 2, 3)	Library of NTUU "KPI", 6 th floor hall
	16:00-17:30	Oral session <u>Topic 2</u> : Renewable Energy Systems and Distributed Generation <u>Topic 3</u> : Intelligent and Adaptive Energy Systems	Library of NTUU "KPI", room 15
	18:00	City sightseeing	Gathering near Academic Building #1 of NTUU "KPI"
June 9	09:30-17:00	Closing ceremony	Gathering near Academic Building #1 of NTUU "KPI"
June 10, June 11	-	Departure	-

PRESENTATION SCHEDULE

June 7

10:00 – 11:30

Borys Stognii, academician of NASU – Introductory speech

Yuriy Yakymenko, academician of NASU – Greeting speech

12:00 – 13:00

Plenary session

Plenary session chairperson: Borys Stognii

Authors	Title
Oleksandr Podoltsev and Maksym Shcherba	Electrophysical Processes in Inhomogeneous Solid Dielectrics Under the Influence of Strong Electric Fields and Moisture Multiscale and Multiphysics Modeling in Electrical Engineering
Oleksandr Butkevych	Intelligent Systems in Electric Networks
Serhiy Bozhko and Sergei Peresada	Towards Smart Electric Power Systems in Future Aircraft
Eugeniusz Rosołowski	Research and Education at Wrocław University of Technology

14:00 – 15:30, 16:00 – 17:00

Oral sessions

Topic 4: Industrial Electronics and Electrical Drives

Topic 5: Special Power Electronic Systems and Applications

Session chairperson: Ivan Shapoval

#	Authors	Title
31	Jawad Faiz, Zahra Valipour, M. Shokri-Kojour and M. Azeem Khan	Design of a Radial Flux Permanent Magnet Wind Generator with Low Coercive Force Magnets
35	Sergei Peresada, Vitalii Blagodir and Mykola Zhelinskyi	Output Feedback Control of Stand-Alone Doubly-Fed Induction Generator
38	Valery Zhuikov and Ievgen Verbytskyi	Spectrum Analysis of Bipolar Pulse Frequency Modulation Voltage
48	Sergei Peresada, Serhii Kovbasa, Serhii Dymko and Serhiy Bozhko	Dynamic Output Feedback Linearizing Control of Saturated Induction Motors with Torque per Ampere Ratio Maximization
51	Sergei Peresada, Serhii Kovbasa, Serhii Korol, Nikolay Pechenik and Nikolay Zhelinskyi	Indirect Field Oriented Output Feedback Linearized Control of Induction Generator
20	Vladimir Yuhimenko, Gal Geula, Grigory Agranovich, Moshe Averbukh and Alon Kuperman	Active Voltage Sensorless Supercapacitor Bank Balancer with Peak Current Protection
24	Mahdi Salimi and Vadood Hajbani	Robust Closed Loop Control of the Transformerless DC-DC Converters With High Step Up Voltage Gain
42	Liisa Liivik, Andrii Chub and Dmitri Vinnikov	Input-Parallel Output-Series Cascading Possibilities of Single-Switch Galvanically Isolated Quasi-Z-Source DC-DC Converters
53	Roman Kosenko, Andrii Chub and Andrei Blinov	A Three-Phase Full Soft-Switching Current-Fed Naturally Clamped DC-DC Converter for High-Power Fuel Cell Applications
55	Andrii Chub, Roman Kosenko and Andrei Blinov	A Three-Phase Full Soft-Switching Current-Fed Naturally Clamped DC-DC Converter for High-Power Energy Storage Applications

15:30 – 16:00

Poster session

Topic 4: Industrial Electronics and Electrical Drives

Topic 5: Special Power Electronic Systems and Applications

#	Authors	Title
13	Mykhaylo Zagirnyak, Andrii Kalinov and Anna Kostenko	Induction Motor Stator Windings Asymmetry Influence on Frequency Converter Autonomous Voltage Inverter
14	Mykhaylo Zagirnyak, Tetyana Korenkova and Viktoriya Kovalchuk	Harmonic Analysis of Power in an Electrohydraulic Complex with Nonlinear Processes in the Pipeline System
15	Nikolay Lopatkin	Simple Delta Voltages Space Vector PWM Algorithm for Voltage Source Multilevel Inverters
46	Konstantin Akinin and Vladimir Kireyev	Test Devices for Experimental Researches of Low Power Electric Drives on the basis of Permanent Magnet Brushless Machines
47	Dmytro Ushakov	Stator Current Spectrum Analysis of Induction Motor Powered by Pulsed Voltage Source
36	Yuriy Denisov, Viacheslav Gordienko, Alexey Gorodny, Serhii Stepenko, Roman Yershov, Aliona Prokhorova and Oleksandra Kostyrieva	Power Losses in MOSFET Switch of Quasi-Resonant Pulse Converter with Series Resonant Circuit
37	Dmitro Sholokh, Viktor Zozulev, Volodymyr Kobylchak and Alexander Khrysto	New Aspects of Magnetic-Pulse Semiconductor Devices Improvement
49	Gennadiy Pavlov, Andrey Obrubov and Irina Vinnichenko	The Linearized Dynamic Model of the Series Resonant Converter for Small Signals
58	Volodymyr Sydorets and Andrey Dubko	Increase of Efficiency of Electrosurgical Tools for Welding of Live Biological Tissues
65	Volodymyr Sydorets, Iuliia Bondarenko and Oleksandr Bondarenko	Dependence of Power Quality on Welding Current Regulation Angle

June 8

09:00 – 10:30, 11:00 – 13:00

Oral sessions

Topic 1: Modern Energy Systems and Power Electronics

Session chairpersons: Maksym Shcherba

#	Authors	Title
3	Maksym Shcherba	Multi-Physical Processes During Electric Field Disturbance In Solid Dielectric Near Water Micro-Inclusions Connected by Conductive Channels
9	Igor Korotyeyev and Marius Klytta	Analyze of Steady-State Process in Circuits with Incommensurable Frequencies of Voltage Sources
26	Valentin Oleschuk, Vladimir Ermuratskii and Federico Barrero	Multi-Inverter Split-Phase Traction Drive with Nonlinear Control Modes and Voltage Symmetries
28	Valerii Mykhalskyi, Volodymyr Sobolev, Vasyl Chopyk, Serhii Polishchuk and Ivan Shapoval	The Matrix Converter Input Current Formation in the Case of Unbalanced Load
34	Andrii Galyga, Anatoliy Prystupa and Dmytro Zhuk	The Clarification Method of Power Losses Calculation in Wires of Transmission Lines with Climatic Factors
41	Sabir Ouchen, Achour Betka, Sabrina Abdeddaim and Rabiaa Mechouma	Design and Experimental Validation Study on Direct Power Control Applied on Active Power Filter
61	Vladyslav Mykhailenko, Sergiy Karelin, Juliya Kunyk and Roman Dryomov	Analysis of Electromagnetic Processes Is in Semiconductor Converter with Nine Zone Regulation of Initial Voltage
63	George Zhemerov, Nataliia Ilna and Dmitry Tugay	The Theorem of Minimum Energy Losses in Three-Phase Four-Wire Energy Supply System

14:00 – 15:30, 16:00 – 17:30

Oral sessions

Topic 2: Renewable Energy Systems and Distributed Generation

Topic 3: Intelligent and Adaptive Energy Systems

Session chairperson: Yuliia Yamnenko

#	Authors	Title
10	Rishikesh Dingari, Sai Kiran Dornala and Vikram Thumma	Modelling of Wind Turbine for Increasing Its Efficiency
17	Andrey Nikiforov	Modelling Ultraslow Circuits in Real-Time Systems Smart-grid on the Basis of Separation of Motions in Frequency and Sensing
23	Davar Mirabbasi, Behnaz Gholipoor and Arman Ghasemi	Optimal Design and Energy Management of Wind-solar Hybrid Generating Systems Using Imperialistic Competitive Algorithm
25	Sergei Kolesnik, Moshe Sitbon, Grigory Agranovich, Teuvo Suntio and Alon Kuperman	Comparison of Photovoltaic and Wind Generators as Dynamic Input Sources to Power Processing Interfaces
45	Igor Goncharenko	Distributed Generation Optimal Placement. Climatic Pattern Consideration
11	Viktor Gurieiev and Olga Sanginova	Simulation and Study of Modes for Full-Scale Mode Simulator for Ukrainian Energy Systems
16	Mustafa Akpınar, Muhammed Fatih Adak and Nejat Yumusak	Forecasting Natural Gas Consumption with Hybrid Neural Networks – Artificial Bee Colony
54	Mohammad Daisy, Rahman Dashti and Hamid Reza Shaker	Locating Single and Double Phase Fault to Ground on a Power Distribution Feeder Using Hybrid Method
59	Eugeniusz Rosołowski, Jan Iżykowski and Piotr Pierz	Measurement of Fault-Loop Impedance in Three-Terminal Line Using Signals of Current Differential Relays

10:30 – 11:00, 15:30 – 16:00

Poster sessions

Topic 1: Modern Energy Systems and Power Electronics

Topic 2: Renewable Energy Systems and Distributed Generation

Topic 3: Intelligent and Adaptive Energy Systems

#	Authors	Title
4	Nataliia Suprunovska and Anatolii Shcherba	Features of the Energy Interchange Between Capacitors in the Circuit Using Unidirectional Commutator or Bidirectional One
19	Dmitry Makov, Anatolii Shcherba and Oleksandr Antoniuk	The Formation of a Three-Phase Voltage System Using Digital-to-Analog Converters
29	Mykhailo Artemenko, Larysa Batrak, Serhii Polishchuk, Valerii Mykhalskyi and Ivan Shapoval	Reactive Compensation of Non-Active Power in Hybrid Shunt Filter of Three-Phase Four-Wire System at Random Load
33	Oleksandr Zhuk, Dmytro Zhuk, Dmytro Kryvoruchko and Serhii Stepenko	An Improvement of Compensators of Complete Power Non-Active Components in Autonomous Electric Power Systems
60	Dmitry Ivashchenko, Anatolii Shcherba and Nataliia Suprunovska	Analyzing Probabilistic Properties of Electrical Characteristics in the Circuits Containing Stochastic Load
6	Valery Zhuikov and Kateryna Osypenko	The Stability of Solar Panel-Diesel Generator System
7	Vsevolod Pavlovsky and Anton Steliuk	Local Load-Frequency Control in the Power System Considering Impact of the Renewables
22	Petro Lezhnyuk, Olga Buslavets and Vyacheslav Komar	Impact of Renewable Sources of Energy on the Level of Active Power Losses in Distribution Networks
44	Tetyana Tereschenko, Julia Yamnenko and Liubov Klepach	Technical Realization of Energy Transferring in MicroGrid
27	Ihor Blinov and Serhii Tankevych	The Harmonized Role Model of Electricity Market in Ukraine
32	Ghazanfar Shahgholian and Jawad Faiz	Coordinated Control of Power System Stabilizer and FACTS Devices for Dynamic Performance Enhancement– State of Art
50	Nikolay Grebchenko, Vitaliy Maximchuk and Yurii Pylypenko	The Method of Determining Parameters of Single-Phase Fault in Network with Isolated Neutral
64	Anna Kyselova, Ievgen Verbitskyi and Gennadiy Kyselov	Context-Aware Framework for Energy Management System
68	Julia Yamnenko and Artem Morhun	Load Control Based on Algebra of Structural Numbers in Smart House