



IWED 2022 Program

DAY 1 (27 January 2022)

		Opening Session & Invited Keynote Speeches (Chairs: Alecksey Anuchin, Lev Rassudov) Zoom Link 1		
10:00		Opening Ceremony	Alecksey Anuchin	<i>Moscow Power Engineering Institute, Russia</i>
10:10		GaN MHz Power Conversion: Faster, Smaller and Tougher	Miroslav Vasic	<i>Universidad Politecnica de Madrid, Spain</i>
11:00		WBG-Devices on Modern Power Electronics and Electric Drives	Moumita Das	<i>Indian Institute of Technology Mandi, India</i>
11:45		Exploring Inverter Topologies for Machine-tool Drives	Alecksey Anuchin	<i>Moscow Power Engineering Institute, Russia</i>
12:00		Impedance-Source Networks: Features, Benefits and Challenges for Industrial Application	Oleksandr Husev	<i>Tallinn University of Technology, Estonia</i>
13:00		Lunch		
14:00		Oral Session 1. Additive technologies in electrical engineering (Chairs: Anton Rassölkin, Lev Rassudov) (10+5 min) Zoom Link 2		
	32	Additive Manufacturing of Cooling Systems Used in Power Electronics. A Brief Survey	Lorand Szabo	<i>Technical University of Cluj-Napoca, Romania</i>
	8	Determining the Thermal Conductivity of Additively Manufactured Metal Specimens	Martin Sarap, Ants Kallaste, Payam Shams Ghahfarokhi, Hans Tiismus and Toomas Vaimann	<i>Tallinn University of Technology, Estonia; Riga Technical University, Latvia</i>
14:30		Oral Session 2. Electric Machines and Fault Diagnosis Tools (Chairs: Anton Rassölkin, Lev Rassudov) (10+5 min) Zoom Link 2		
	6	Initial Design Estimation of Synchronous Machines	Muhammad Usman Naseer, Ants Kallaste, Bilal Asad, Toomas Vaimann and c	<i>Tallinn University of Technology, Estonia</i>

36	Comparative Analysis of Disk Type EMs Designs	Flur Ismagilov, Vyacheslav Vavilov, Ildus Sayakhov, Alexey Zherebtsov, Razmik Dadoyan and Albina Nurieva	<i>Ufa State Aviation Technical University, Russia</i>
14	Evaluation of 5 kW Converter-Fed Induction Motor Losses by Analytical Calculation	Shahab Khalghani, Lassi Aarniovuori and Juha Pyrhönen	<i>Lappeenranta-Lahti University of Technology LUT, Finland</i>
21	Implementation and Analysis of Rolling Bearing Faults Caused by Shaft Currents	Karolina Kudelina, Siarhei Autso, Bilal Asad, Toomas Vaimann, Anton Rassõlkin and Ants Kallaste	<i>Tallinn University of Technology, Estonia</i>
13	Fault Diagnosis of the Tooth Belt Transmission of Cartesian Robot	Siarhei Autso, Anton Rassõlkin, Toomas Vaimann, Bilal Asad, Karolina Kudelina and Khang Van Hyunh	<i>Tallinn University of Technology, Estonia; University of Agder, Norway</i>

15:45	Break		
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16:00	Oral Session 3. Energy Conversion Control (Chairs: Galina Demidova, Lev Rassudov) (10+5 min) Zoom Link 2		
11	Optimized-Fuzzy Droop Controller for Load Frequency Control of a Microgrid with Weak Grid Connection and Disturbances	Haider Jassim and Anatoliy Ziuzev	<i>Ural Federal University, Russia</i>
17	Optimized Field-Weakening Strategy for Control of PM Synchronous Motors	Anton Dianov	<i>DaeYoung R&D center Yongin, Republic of Korea</i>
18	Field-Oriented Control of the Induction Motor as Part of the Shunting Locomotive Powertrain Considering Core Losses and Magnetic Saturation	Igor Zhurov, Sergey Baida and Stanislav Florentsev	<i>Engineering center "Ruselprom", Russia</i>
20	MPPT Algorithms for Wind Turbines: Review and Comparison	Aleksandr Lukin, Galina Demidova, Omar Alassaf, Dmitry Lukichev, Anton Rassõlkin and Toomas Vaimann	<i>ITMO, Russia; Tallinn University of Technology, Estonia</i>
22	Cylindrical Blades Magnus Wind Turbine Optimization and Control System	Omar Alassaf, Aleksandr Lukin, Galina Demidova, Gleb Kozlov, Andrey Volkhontsev and Nikolai Poliakov	<i>ITMO, Russia</i>
24	Adjusting the Phase Switching on Positions of the Traction Switched Reluctance Motor in the Low Speed Range	Elena Vostorgina and Alexander Krasovsky	<i>Bauman Moscow State Technical University, Russia</i>

DAY 2 (28 January 2022)

10:00	Invited Keynote Speech Session (Chair: Alecksey Anuchin, Lev Rassudov) Zoom Link 3		
	Keynote: Benefits of SiC Semiconductor Devices for Traction Applications	Mikhail Chervinsky	<i>Cree/Wolfspeed, Russia</i>
11:30	Oral Session 4. Power Electronics and Traction Applications (Chair: Alecksey Anuchin, Lev Rassudov) (10+5 min) Zoom Link 3		
31	The Accuracy Increasing of Voltage Stabilization on the Input of PWM Inverter in the Electric Drive with Energy Storage based on Supercapacitors	Vladimir Polyakov and Iurii Plotnikov	<i>Ural Federal University, Russia</i>
33	Equalization of Losses in a Multilevel Frequency Converter in Fault Condition	Yulia Kazemirova, Alecksey Anuchin, Maxim Lashkevich, Alexey Kovyazin, Dmitry Aliamkin and Alexandr Zharkov	<i>MPEI, Russia; Perm National Research Polytechnic University, Russia</i>
34	Thermal Cycling Effect in a Traction Inverter for Star-connected and Open-end Winding Permanent Magnet Synchronous Motors with Nearly Constant Losses Current Regulation	Yousef Ali, Egor Kulik, Alecksey Anuchin and Hiep Do	<i>MPEI, Russia; Thuyloi University, Viet Nam</i>
7	The Efficiency Analysis of Resonant Circuits in High-Power Soft Switching Mode Invertors	Daria Bondarenko, Igor Voronin, Pavel Voronin and Oleg Osipov	<i>MPEI, Russia</i>
12:30	Break		
12:45	Oral Session 5. Mechatronics and Robotics (Chair: Alecksey Anuchin, Lev Rassudov) (10+5 min) Zoom Link 3		
2	Numerical Analysis of an Electric High-Speed Rim-Driven Rotor	Jhon Paul C. Roque, Robert Bolam, Yuriy Vagapov and Alecksey Anuchin	<i>Glyndwr University, UK; MPEI, Russia</i>
5	Development of Double-motor Electric Drive for Screen Wipers	Igor Polyuschenkov	<i>R&P Company "Rubicon – Innovation", Russia</i>
10	Dynamic Stability Analysis of Robots on Spherical Base with Variable Load Mass	Margarita Kartashova, Nikolai Poliakov and Elizaveta Moiseenkova	<i>ITMO, Russia</i>
	Oral Session 6. Training in Electrical Engineering (Chair: Alecksey Anuchin, Lev Rassudov) (10+5 min) Zoom Link 3		
1	Virtual Labs: an Effective Engineering Education Tool for Remote Learning and not only	Lev Rassudov, Alina Korunets	<i>MPEI, Russia</i>
16	An Experimental Test Bench for Studying Sucker Rod Pump	Samuel Teclé, Anton Nakataev and Anatolii Ziuzev	<i>Ural Federal University, Russia</i>