






POWER ENGINEERING 2016 | ENERGETIKA 2016

May 31, 2016	10:00	13:00	Registration		
			Lunch		
	13:30	14:00	Opening of the Event		
	14:00	18:00	PLENARY LECTURES		
	19:00	Welcome Party			
June 1, 2016	8:30	12:30	 EEE 2016	 CPS 2016	 OZE 2016
			Room EEE 1	Room CPS	Room OZE
			ENERGY, ECOLOGY AND EFFICIENCY	CONTROL OF POWER SYSTEMS	SOLAR ENERGY/GENERAL APPLICATION OF THE RES
			Coffee Break		
			SMART GRID	CONTROL OF POWER SYSTEMS	SOLAR ENERGY/GENERAL APPLICATION OF THE RES
			Lunch		
	13:00	18:00	Leisure Time Activities		
	18:00	19:00	POSTER PRESENTATION SESSION		
	19:00	Banquet			
	June 2, 2016	8:30	12:30	 EEE 2016	 EEE 2016
Room EEE 1				Room EEE 2	Room OZE
POWER LINES				NUCLEAR ENERGY	BIOMASS
Coffee Break					
POWER LINES				NUCLEAR ENERGY	BIOMASS/GENERAL APPLICATION OF THE RES
		Lunch			

POWER ENGINEERING 2016 | ENERGETIKA 2016

May 31, 2016		
10:00	13:00	Registration
Lunch		
13:30	14:00	Opening of the Event
PLENARY LECTURES		
Chairman: František Janíček		
14:00	14:30	SELECTED QUESTIONS OF ENERGY SECURITY IN SLOVAK REPUBLIC WITHIN THE CONTEXT OF THE EVENTS OF RECENT DECADES AND KEY PRINCIPLES OF FORMATION OF ENERGY STRATEGY
		Tibor Mikuš Trnavský samosprávny kraj
14:30	15:00	DEVELOPMENT OF THE SLOVAK TRANSMISSION SYSTEM IN THE NEXT TEN YEAR PERIOD
		Karol Kósa SEPS, a.s.
15:00	15:30	Coffee Break
15:30	16:00	BASIC TECHNICAL RULES FOR OPERATION OF THE LARGE SYNCHRONOUSLY INTERCONNECTED SYSTEM OF CONTINENTAL EUROPE
		Andrej Hanzel Centrum pre vedu a výskum, s.r.o
16:00	16:30	SEVERE ACCIDENTS OF NUCLEAR POWER PLANTS: RESULTS OF SAFETY ANALYSES VERSUS OPERATIONAL EXPERIENCES
		Zoltán Kovács RELKO s.r.o.
16:30	17:00	PAN-EUROPEAN POWER SYSTEM: PRESENT STATE AND FUTURE
		Karel Máslo ČEPS, a.s.
17:00	17:30	PHOTOVOLTAIC CELLS AND MODULES - STATE OF THE ART AND TRENDS
		Vítězslav Benda České vysoké učení technické v Praze
19:00		Welcome Party

CONTROL OF POWER SYSTEMS

Room CPS

Chairmen: Ján Murgaš, Vojtech Veselý

8:30	9:00	ADVANCED CONTROL AND MODELING OF FUTURE POWER SYSTEM	Máslo, K.
9:00	9:20	ON-LINE MONITORING SYSTEM OF POWER TRANSFORMERS- DIAGNOSTIC OF BUSHINGS	Kováčik, J.
9:20	9:40	POWER SYSTEM RESTART AFTER THE MAJOR FAILURE	Murgaš, J., Ernek, M.
9:40	10:00	ROBUST POWER PLANT CONTROLLER DESIGN	Veselý, V.
10:00	10:30	Coffee Break	
10:30	11:00	CALCULATION OF ELECTROMECHANICAL EIGENVALUES BASED ON ANGULAR SPEED WAVEFORMS AT PULSE AND SHORT- CIRCUIT DISTURBANCES	Pruski, P., Paszek, S.
11:00	11:20	GLOBAL ASSESMENT OF POWER SYSTEM OPERATIONAL STATE AFTER RECONFIGURATION	Cintula, B., Eleschová, Ž., Beláň, A.
11:20	11:40	REFLECTOMETRIC MEASUREMENR ON 110 kV LINE	Pavlov, Ľ., Lago, J., Savčák, M., Chovanec, J.
11:40	12:00	IMPLEMENTATION OF WAMS INTO TRANSMISSION SYSTEM OF SLOVAKIA	Grega, M., Prieložný, S., Jedinák, M.
12:00	12:20	SYSTEM OF DATA COLLECTION AND MANAGING ENERGY IN THE ENVIRONMENT OF LOCAL DISTRIBUTION SYSTEMS	Kaprál, D.

POSTER SESSION

GAIN SCHEDULING POWER CONTROL OF WIND TURBINE GENERATOR	Puleva, T. , Slavov Ts.
THE FAULTS WITH CONSIDERATION OF LINE PARAMETERS ASYMMETRY	Ivanič, M, Eleschová, Ž.
ASSESSMENT OF TRANSIENT STABILITY FOR N-K EVENTS IN SUBSTATION CONFIGURATION OF BREAKER- AND-A- HALF	Cintula, B. , Eleschová, Ž., Beláň, A.
ANALYSIS OF IMPACT OF FAILURES IN POWER SYSTEM ON VOLTAGE SAGS	Beláň, A., Eleschová, Ž., Cintula, B.
CONDITIONS FOE ELIGIBILITY OF ISLAND OPERATION IN CITY PILSEN. STABILITY ASSESMENT	Mužík V., Vostracký, Z.
INTRODUCTION OF PEAK CURRENT CONTROL METHOD IN BIDIRECTIONAL BUCK-BOOST CONVERTER	Voglitsis, D., Rigogiannis, N., Eklenkova, M., Papanikolaou, N., Papadopoulos, D.
USING THE CONVERGE PATH OF THE MODIFIED SEIDEL METHOD AS A TOOL FOR EVALUATION OF THE STABILITY OF A POWER SYSTEM	Dolgicers, A., Kozadajevs, J.

EEE 2016 – June 1, 2016



ENERGY, ECOLOGY AND EFFICIENCY

Room EEE 1

Chairman: Daniela Špírková

9:00	9:20	REDUCTION OF POLLUTANT EMISSIONS IN EXHAUST GASES OF GAS TURBINES	Veselý, S.
9:20	9:40	THE ROLE OF ENERGY STORAGE BY CO2 MITIGATION – CASE STUDY FOR SOUTH AFRICA	Chudy, M.
9:40	10:00	ENERGY LABELING OF THE LAMPS AND LUMINAIRES	Lipnický, L., Janiga, P., Dubnička, R., Gašparovský, D.
10:00	10:30	Coffee Break	

SMART GRID

Room EEE 1

Chairman: Anton Beláň

10:30	10:50	SMART GRID AND SMART METERING SOLUTIONS BASED ON OPEN SMART GRID PROTOCOL	Liška, M.
10:50	11:10	TESTING OF SMART HOME SYSTEMS BY APPLIANCES SIMULATOR	Janiga, P., Liška, M., Beláň, A., Volčko, V., Ivanič, M., Sarac, V.
11:10	11:30	SOLUTION FOR ON-LINE MONITORING OF ISLAND RENEWABLE ENERGY SOURCES	Tomlain, J., Tereň, O., Tomlain, J.
11:30	11:50	THE IMPACT OF SMART METERING ON IT INFRASTRUCTURE	Volčko, V., Búci, P.
11:50	12:10	SMART TECHNOLOGY IMPROVES NETWORK STABILITY	Kultán, J.

Lunch

EEE 2016 – June 2, 2016



NUCLEAR ENERGY

Room EEE 2

Chairmen: Branislav Vrban, Zoltán Kovács

8:30	9:00	USING OF EXTREME VALUE THEORY IN EXTERNAL EVENT PSA OF WWER440 REACTORS	Kovács, Z., Spenlinger, R.
9:00	9:20	STABILITY ANALYSIS OF A LIQUID METAL COOLED FAST REACTOR	Čerba, Š., Vrban, B., Lüley, J., Nečas, V., Kim, S. J.
9:20	9:40	LONG-TERM SAFETY OF GEOLOGICAL REPOSITORY	Barátová, D., Nečas, V.
9:40	10:00	NEUTRON LEAKAGE PROBABILITY ADJUSTMENT FOR FAST REACTOR DESIGN	Vrban, B., Lüley, J., Čerba, Š., Haščík, J., Nečas, V.
10:00	10:30	Coffee Break	
10:30	10:50	PARAMETRIC STUDY OF BYPASS INFLUENCE ON THERMO-HYDRAULICS OF NUCLEAR POWER REACTOR VVER440 FUEL ASSEMBLY	Jakubec, J., Paulech, J., Gálik, G., Kutiš, V., Sedlár, T.
10:50	11:10	THE SELECTED ISSUES OF BACK-END PART OF NUCLEAR POWER ENGINEERING	Hornáček, M., Nečas, V.
11:10	11:30	CFD ANALYSIS OF NOMINAL PROJECT CONDITIONS IN DOWNCOMER OF VVER 440	Kutiš, V., Jakubec, J., Paulech, J., Gálik, G., Murín, J., Gogola, R., Hrabovský, J.
11:30	11:50	PREPARATION OF NUCLEAR DATA LIBRARIES FOR REACTOR TRANSIENT CALCULATIONS USING TRITON CODE	Dujčíková, L., Haščík, J., Vrban, B., Čerba, Š., Lüley, J., Nečas, V.
11:50	12:10	PROPOSAL OF EXPERIMENTAL DEVICE FOR MEASUREMENT OF NEUTRON SOURCE EMISSION RATE	Lüley, J., Čerba, Š., Vrban, B., Osuský, F., Haščík, J., Nečas, V.

Lunch

EEE 2016 – June 2, 2016



POWER LINES

Room EEE 1

Chairmen: Žaneta Eleschová, Marek Pípa

8:30	9:00	DO WE NEED COORDINATED DEVELOPMENT OF TRANSFORMERS 400/110 KV AND TRANSMISSION CAPACITY OF 110 kV LINES?	Straka, M.
9:00	9:20	FEM ANALYSIS OF ICE-SHEDDING ON OVERHEAD POWER LINES	Gogola, R., Hrabovský, J., Murín, J., Paulech, J., Kutiš, V., Janíček, F.
9:20	9:40	AUTOMATED MECHANICAL STRENGTH AND CURRENT CARRYING CAPACITY TEST OF SELECTED ACSR CABLES	Kment, A., Pípa, M., Janíček, F.
9:40	10:00	NUMERICAL AND EXPERIMENTAL ANALYSIS OF EIGENFREQUENCIES OF ACSR POWER LINE	Murín, J., Hrabovský, J., Gogola, R., Goga, V., Bindzár, M., Janíček, F.
10:00	10:30	Coffee Break	
10:30	10:50	ADVANCED ELECTRICAL PARAMETERS CALCULATIONS OF THE UNTRANSPOSED OVERHEAD LINES IN COMPARISON TO STANDARD COMPUTATIONAL METHODS	Cenký M., Bendík J., Eleschová Ž.
10:50	11:10	COMPLEX CALCULATION OF INTENSITY OF ELECTRIC FIELD UNDER POWER TRANSMISSION LINE USING CATENARY SHAPE OF CONDUCTORS AND FLAT SURFACE	Bendík J., Cenký M., Eleschová Ž.

Lunch



POSTER SESSION

THERMO-HYDRAULIC CONDITIONS IN VVER-440 SPENT FUEL STORAGE POOL	Gálik, G., Kutiš, V., Jakubec, J., Paulech, J., Sedlár, T.
THERMO-HYDRAULIC CONDITIONS IN VVER-440 DURING MAJOR OUTAGE	Paulech, J., Gálik, G., Jakubec, J., Kutiš, V., Murín, J., Gogola, R., Hrabovský, J., Sedlár, T.
USE OF NUCLEAR SPENT FUEL CASKS	Adamek, M., Vostracky, Z.
IMPROVED ENERGY EFFICIENCY AND OPTIMIZATION OF ENERGY CONSUMPTION	Poljovka, P.
METHOD FOR DETERMINING THE AMPLITUDE OF THE FURNACE TEMPERATURE OF THE HEATING ELEMENT IN AN ELECTRIC MUFFLE FURNACE	Lucak, J., Jirinec, S., Kozeny, J.
POWER QUALITY MEASUREMENT WITH FOCUSING ON VOLTAGE SAGS EVALUATION	Beláň, A., Cintula, B., Eleschová, Ž.
NUMERICAL SOLUTION OF BOUNDARY INVERSE PROBLEMS OF ELECTRICAL CONDUCTIVITY FOR 3D ANISOTROPIC MEDIA	Brilla, I., Janíček, F.
ADAPTIVE STREET LIGHTING	Janiga, P., Gašparovský, D., Barčík, M., Lipnický, L., Causevski, A.
SWITCH-ON SURGE OF LED LAMP	Janiga, P., Lipnický, L., Gašparovský, D., Beláň, A., Barčík, M., Dimitrov, D.
ELECTRICAL PARAMETERS DURING ELECTRIC VEHICLE CHARGING	Janiga, P., Liška, M., Cintula, B., Eleschová, Ž., Beláň, A., Minovski, D.
VIBRATION OF ACSR POWER LINE DEPENDING ON THE SPEED OF AIR FLOWING AROUND THE POWER LINE CROSS-SECTION	Hrabovský, J., Gogola, R., Murín, J., Paulech, J., Kutiš, V.
ANALYSIS OF DIELECTRIC STRESS OF SF6 HIGH VOLTAGE CIRCUIT BREAKER	Vajnar, V., Vostracky, Z.
PHASE CURRENT ASYMMETRY ON THE MUTLI-CIRCUIT OVERHEAD TRANSMISSION LINE WITH DIFFERENT VOLTAGE LEVELS	Nazarčík, T., Benešová, Z.
DETERMINING THE MINIMAL NUMBER OF TERMS IN THE CARSON'S FORMULA	Ivanič, M., Eleschová, Ž., Koníček, M.
USE OF INDIRECT MICROWAVE HEATING FOR OXIDATIONS OF PROCESS GASES IN VIEW OF EMISSION REDICTION AND ENERGY RECOVERING	Giemza, M., Timár, P., Janíček, F.
PASSIVE SHUTDOWN SYSTEMS FOR FAST REACTORS	Osuský, F., Čerba, Š., Farkas, G., Lüley, J., Vrban. B., Nečas, V.
PV CURVE – MAIN TOOL FOR VOLTAGE STABILITY ASSESSMENT	Eleschová, Ž., Cintula, B.

OZE 2016 – June 1, 2016



SOLAR/GENERAL APPLICATION OF THE RES

Room OZE

Chairmen: Vladimír Šály, Juraj Pačka

8:30	9:00	CLIMATE CHANGE, POSSIBLE IMPACTS, RENEWABLE ENERGY, ADAPTING AND MITIGATION OPTIONS	Lapin, M., Melo, M.
9:00	9:20	MODELING AND SIMULATION OF A THREE-PHASE INVERTER TO INJECT ENERGY ON GRID FROM PHOTOVOLTAIC SYSTEM	Rodrigues, M., Brito, M., Nogueira, T., Martins, F.
9:20	9:40	FREQUENCY AND VOLTAGE RESTORATION IN MICROGRID WITH RENEWABLE ENERGY SOURCES	Dvorský, E., Hejtmankova, P., Raková, L.
9:40	10:00	SUSTAINABLE ENERGY IN EUROPE: THE WIND CONTRIBUTION	Martins, F., Nogueira, T., Smitková, M.
10:00	10:30	Coffee Break	

SOLAR/GENERAL APPLICATION OF THE RES

Room OZE

Chairmen: Július Cirák, Michal Váry

10:30	11:00	DEVELOPMENT OF SILICON HETEROJUNCTION SOLAR CELLS WITH IZO AND ITO ANTIREFLECTION COATINGS	Mikolášek, M., Harmatha, L., Perný, M., Šály, V., Huran, J.
11:00	11:20	ANALYSIS OF SUPPORT FOR ELECTRICITY PRODUCTION FROM RENEWABLE ENERGY SOURCES IN THE EUROPEAN UNION AND ITS IMPACT ON ELECTRICITY PRICES	Holjenčík, J., Janíček, F., Knošková, K.
11:20	11:40	COMPARISON OF SUPPORT RENEWABLE ENERGY SOURCES IN THE V4 COUNTRIES AND THE POSSIBILITIES OF SETTLEMENT OF THE BALANCE OF ELECTRICITY GENERATED FROM SOLAR ENERGY AT HOUSEHOLD	Holjenčík, J., Šály, V., Šišková, D.
11:40	12:00	RENEWABLE ENERGY IN MENA REGION	Adaileh, A., Janíček, F., Kubica, J.

Lunch

OZE 2016 – June 2, 2016



BIOMASS

Room OZE

Chairmen: Ján Gaduš, Igor Šurina

8:30	9:00	POTENTIAL OF MICROALGAE BIOMASS FOR BIOGAS PRODUCTION	Głowacka, N., Gaduš, J., Kiss, G., Slobodník J.
9:00	9:20	ISOLATION OF BIOLOGICALLY ACTIVE COMPOUNDS FROM BARK OF NORWAY SPRUCE (PICEA ABIES)	Kreps, F., Burčová, Z., Schmidt, Š., Jablonský, M., Ház, A., Sládková, A., Šurina, I.
9:20	9:40	BIOLOGICALLY ACTIVE COMPOUNDS OF SEA BUCKTHORN (HIPPOPHAE RHAMNOIDES)	Burčová, Z., Kreps, F., Schmidt, Š., Jablonský, M., Ház, A., Sládková, A., Šurina, I.
9:40	10:00	EXTRACTION OF LIPIDS FROM FLAX AND HEMP USING ACCELERATED SOLVENT EXTRACTION BY ETHANOL	Jablonský, M, Ház, A., Sládková, A., Škulcová, A., Šurina, I., Kreps, F., Burčová, Z., Gemeiner, P.
10:00	10:30	Coffee Break	

GENERAL APPLICATION OF THE RES /BIOMASS

Room OZE

Chairmen: Aleš Ház, Igor Šurina

10:30	11:00	THE INFLUENCE OF SELECTED DEGRADATION FACTORS ON THE DIELECTRIC PROPERTIES OF CABLES FOR PHOTOVOLTAIC APPLICATIONS	Packa, J., Kujan, V., Štrkula, D., Šály, V., Váry, M.
11:00	11:20	CATALYTIC WET AIR OXIDATION OF LIGNIN	Škulcová, A., Jablonský, M., Ház, A., Sládková, A., Šurina, I., Kosinková, J., Kreps, F., Burčová, Z.
11:20	11:40	EXTRACTIVES FROM SPRUCE BARK OBTAINED BY ACCELERATED SOLVENT EXTRACTION AND POSSIBILITIES OF USING WASTE BARK	Sládková, A., Ház, A., Jablonský, J., Škulcová, A., Šurina, I., Kreps, F., Burčová, Z.
11:40	12:00	COMPARISON OF ACCELERATED SOLVENT EXTRACTION AND SUPERCRITICAL FLUIDS EXTRACTION OF SPRUCE BARK	Ház, A., Stržincová, P., Jablonský, M., Sládková, A., Škulcová, A., Šurina, I., Kreps, F., Burčová, Z.

Lunch



POSTER SESSION

BIOMASS BOILERS – SECURITY RISKS AND THEIR ELIMINATION	Kopča, M., Váry, M.
CALCULATION OF POWER PRODUCED ON WIND TURBINE USING BLADE ELEMENT MOMENTUM THEORY	Zuščák, J., Janíček, F.
DESIGN METHODOLOGY OF VERIFICATION THE OPTIMUM VOLUME OF DISTRIBUTED GENERATION	Koníček, M., Beláň, A., Ivanič, M.
ELECTRICAL PROPERTIES OF SOLAR HETEROJUNCTION a-SiC/c-Si IRRADIATED BY NEUTRONS	Perný, M., Šály, V., Mikolášek, M., Kujan, V., Váry, M., Huran, J.
ELECTRIC CARS IN SLOVAKIA - INCREASE IN ELECTRICITY DEMAND AND PAYBACK PERIOD	Racek, M., Smitkova, M., Martins, F.
ELECTROPHYSICAL PROPERTIES OF GaAs CONCENTRATOR SOLAR CELL	Kósa, A., Mikolášek, M., Stuchlíková, L., Žiška, M., Harmatha, L., Kováč, J., Ściana, B., Dawidowski, W., Tłaczała, M.
ENERGY SAVING POSSIBILITIES OF MODERN ELEVATOR DRIVES	Kujan, V., Janíček, F., Perný, M., Packa, J., Valach, M.
EXTERNAL LIGHTNING PROTECTION OF WIND TURBINE	Daňo, J., Hüttner, L.
CHARACTERIZATION OF InGaAsN/GaAs MULTILAYER SOLAR CELLS	Kósa, A., Stuchlíková, L., Harmatha, L., Mikolášek, M., Kováč, J., Ściana, B., Dawidowski, W., Tłaczała M.
IMPACT OF WIND POWER PLANTS ON THE MEDIUM VOLTAGE DISTRIBUTION GRID	Kašpírek, M., Mezera, D.
NEEDS AND POSSIBILITIES FOR IMPROVING ENERGY EFFICIENCY IN SMALL AND MEDIUM-SIZED ENTERPRISES	Hofmann, P., Šály, V.
POWER QUALITY IN SMALL PV OFF-GRID SYSTEM	Janiga, P., Liška, M., Beláň, A., Volčko, V., Ivanič, M., Minovski, D.
RISK MANAGEMENT CALCULATION STUDY OF STRUCTURE WITH PHOTOVOLTAIC GENERATOR	Daňo, J., Hüttner, L.
SAFETY ASPECTS OF THERMO SOLAR SYSTEMS OPERATION	Kopča, M., Váry, M.
SOLAR BUILDING INTEGRATED SYSTEMS	Šály, V., Perný, M., Packa, J.
SPECIFIC PROBLEM OF DC CURRENT INTERRUPTION IN THE PHOTOVOLTAIC APPLICATIONS	Hüttner, L., Jurčacko, L., Valent, F.
STATIC COGENERATION SOURCE BASED ON THE PELTIER ELEMENT	Pípa, M., Kment, A., Janíček, F.
SUSTAINABLE ENERGY-THE SOLAR ENERGY CONTRIBUTION	Martins, F., Janíček, F., Smitková, M.
TESTING OF PHOTOVOLTAIC PANELS	Pípa, M., Kment, A., Poničan, J., Janíček, F.
USE OF MICROWAVES FOR ENERGY RECOVERY FROM WASTE	Janíček, F., Perný, M., Šály, V., Giemza, M.
UTILIZATION OF MODIFIED VIRTUAL METHOD FOR FREQUENCY AND VOLTAGE PRIMARY CONTROL IN MICROGRID WITH PHOTOVOLTAIC POWER PLANTS	Raková, L., Dvorský, E., Hejtmánková, P.
UTILIZATION OF RENEWABLE ENERGY SOURCES BY EXISTING RESIDENTIAL BUILDINGS	Budiaková, M.