17th – 18th November 2021
Belgrade, Serbia

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International Conference **POWER PLANTS 2021**

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Full Papers Proceedings

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Program rada konferencije
sa vremenskim rasporedom

Conference Programme
with the time table

Date: 17.11.2021 (FIRST DAY OF THE CONFERENCE)
Total time: 09:30-16:40
Organization: Society of Thermal Engineers of Serbia
Venue: Congress Hall 211, University of Belgrade Faculty of Mechanical Engineering, Kraljice Marije 16, Belgrade, Serbia

Opening ceremony of the International Conference POWER PLANTS 2021

Time	Contribution	Speaker
09:30	Introductory word of the President of the Society of Thermal Engineers of Serbia	Prof. dr Milan Radovanović
	Welcome speech of the Dean of Mechanical Engineering Faculty of the University of Belgrade, Serbia	Prof. dr Vladimir Popović
	Introductory word of the President of the Energy Agency of the Republic of Serbia (AERS)	Mr. Dejan Popović
	Introductory word of the representative of the PE "Elektroprivreda Srbije" (EPS)	Prof. dr Aleksandar Gajić
	Introductory word of the representative of the Ministry of Education, Science and Technological Development of the Republic of Serbia	Prof. dr Ivica Radović
	Introductory word of representative of the Ministry of Environmental Protection of the Republic of Serbia	To be confirmed
	Introductory word and official opening of the International conference POWER PLANT 2021 by Deputy Prime Minister and Minister of Mining and Energy of the Republic of Serbia	Prof. dr Zorana Mihajlović
10:30	Welcome cocktail and refreshment. Press release (optional)	

Date: 17.11.2021
Time: 11:00-13:30
Venue: Congress hall 211

Session 1: IMPLEMENTATION OF NEW POLICIES, TECHNOLOGIES, INNOVATIVE SOLUTIONS AND EQUIPMENT, INVITED LECTURES

Time	Contribution	Speaker
11:00-11:25	CRITICAL TIMES FOR POWER PLANTS (+5min for Questions/Answers)	Dr Miodrag M. Mesarović, Academy of Engineering Sciences of Serbia
11:30-11:55	CHALLENGES OF GREEN TRANSITION IN THE ELECTRICITY SECTOR OF SERBIA (+5min for Q/A)	Mr Dragan Vlaisavljević, EPS
12:00-12:25	USE OF BIOMASS AND HYDROGEN IN THERMAL POWER PLANTS TOWARDS EU CARBON NEUTRALITY (+5min for Q/A)	Marc D. Jedamzik, Mitsubishi Power Europe Ltd.

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Time	Contribution	Speaker
12:30-12:55	MITSUBISHI POWER CONTRIBUTION: CURRENT PROJECTS IN THE AREA OF ENVIRONMENT PROTECTION IN SERBIA AND REGION AND NEW TECHNOLOGY (CCS) FOR THE FUTURE (+5min for Q/A)	Takashi Muramoto, Mitsubishi Heavy Industries
13:00-13:25	DEVELOPMENT AND EVALUATION OF A STRATEGY FOR MACEDONIAN ENERGY TRANSITION (+5min for Q/A)	Academician Gligor Kanevče, Macedonian Academy of Sciences and Arts, North Macedonia
13:25-14:00	Coffee break	

Date: 17.11.2021
Time: 14:00-16:30
Venue: Congress hall 211

Session 2: THERMAL/HYDRO/WIND/SOLAR AND OTHER POWER PLANTS OPERATION CHALLENGES, INVITED LECTURES

Time	Contribution	Speaker
14:00-14:25	SOLUTION FOR MODERNIZATION OF A 300 MW STEAM TURBINE PLANT	Prof. dr Milan V. Petrović, Mech.eng.Faculty Belgrade
14:25-14:50	TESTING AND ANALYSIS OF OPERATION OF A 210 MW STEAM TURBINE	Dr Srđan Milić, Mech.eng.Faculty Belgrade
14:50-15:15	THE ESTIMATION OF FUEL NITROGEN DISTRIBUTION DURING THE DEVOLATILIZATION PROCESS OF COAL BY TG-DTG-MS ANALYSIS	Prof. dr Dragoslava Stojiljković, Mech.eng.Faculty Belgrade
15:15-15:40	SERVICEABILITY OF X10CrMoVNb91 MATERIAL WITH LOWER PROPERTIES THAN REQUIRED BY STANDARD AND THE IMPORTANCE OF TECHNICAL DELIVERY REQUIREMENTS	Prof. dr Gordana Bakić, Mech.eng.Faculty Belgrade
15:40-16:05	DETERMINATION OF THE AVERAGE ANNUAL EFFICIENCY BY ADAPTED MEASUREMENT PROCEDURE ON CHP PLANTS	Dr Dejan Cvetinović, VINCA Institute, Belgrade
16:05-16:30	IMPLEMENTATION OF LOW TEMPERATURE DISTRICT HEATING AND PROSUMER AS A NEW ACTOR IN DISTRICT HEATING	Prof. dr Nataša Nord, Norwegian University of Science and Technology
	End of the presentations in this room	

Date: 17.11.2021
Time: 14:00-16:40
Venue: Room No. 1

Session 3: ENVIRONMENTAL ASPECTS OF POWER PLANTS OPERATION, CONFERENCE PAPERS

Time	Contribution	Speaker
14:00-14:20	IMPROVING THE OPERATION OF THERMAL POWER FACILITIES OF PE "ELECTRIC POWER INDUSTRY OF SERBIA" BY THE ENVIRONMENTAL REQUIREMENTS	Milena Đakonović, EPS
14:20-14:40	COMPARATIVE ANALYSIS OF DIFFERENT NUMERICAL SIMULATIONS OF THERMAL POLLUTION CAUSED BY THE OPERATION OF A THERMAL POWER PLANT	Milica Jovčevski, Mech.eng.Faculty Niš
14:40-15:00	THE NUMERICAL APPROACH OF THERMAL POLLUTION FROM THERMAL POWER PLANTS	Milica Jovčevski, Mech.eng.Faculty Niš
15:00-15:20	INFLUENCE OF THERMAL POWER PLANT OPERATION ON RADIONUCLIDE CONTENT IN SOIL	Dr Jelena Krneta Nikolić, VINCA Institute, Belgrade
15:20-15:40	THERMODYNAMIC TOOLS FOR OPTIMISATION OF THE HIGH-TEMPERATURE DECOMPOSITION OF PCB IN THERMAL PLASMA	Nada Milutinović, VINCA Institute, Belgrade
15:40-16:00	HAZARDOUS WASTE MANAGEMENT AND SUITABLE WASTE-TO-ENERGY CONVERSION TECHNOLOGIES IN THE REPUBLIC OF SERBIA	Jovana Anđelković, VINCA Institute, Belgrade
16:00-16:20	COMPARISON OF IMPACT ON THE ENVIRONMENT BETWEEN THERMAL POWER PLANT AND PHOTOVOLTAIC POWER PLANT	Vladimir Mijakovski, University "St. Kliment Ohridski", North Macedonia
16:20-16:40	DECOMPOSITION RATE OF OCTADECYLAMINE (ODA)	Dr Sonja Vidojković, Institute of Chemistry, Technology, and Metallurgy, Belgrade
	End of the presentations in this room	

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Date: 18.11.2021 (SECOND DAY OF THE CONFERENCE)
Total time: 09:30-16:30
Venue: Congress Hall 211, University of Belgrade Faculty of Mechanical Engineering, Kraljice Marije 16, Belgrade, Serbia

Session 4: DECARBONIZATION, EFFICIENCY, ENERGY RESOURCES, SUSTAINABLE DEVELOPMENT AND COMPETITIVENESS, INVITED LECTURES

Time	*Contribution*	*Speaker*
09:30-09:55	SILYZER - HYDROGEN PRODUCTION	Nenad Veljović, SIEMENS-Energy, Belgrade
09:55-10:20	REPOWERING COAL 2 GAS	Lazar Radovanović, SIEMENS-Energy, Belgrade
10:20-10:45	EXPERIENCE FROM THE IMPLEMENTATION OF THE RESEARCH AND DEVELOPMENT PROJECT "POWER UNITS 200+. INNOVATIVE TECHNOLOGY OF CHANGING THE OPERATING REGIME OF 200 MWE POWER UNITS"	Radosław Klon RAFAKO Innovation, Poland
10:45-11:10	TECHNOLOGIES FOR NEGATIVE CO_2 EMISSION	Dr Edgardo Coda Zabetta, Sumitomo SHI FW, Finland
11:10-11:35	FLEXIBILITY OF ELECTRO POWER SYSTEMS AND THE NEW ROLE OF REVERSIBLE HYDROPOWER PLANTS	Prof. dr Aleksandar Gajić, Academy of Engineering Sciences of Serbia
11:35-12:00	TRANSITION TOWARD A LOW-CARBON ECONOMY	Prof. dr Vasilije Manović Combustion and CCS Center, Cranfield University, Bedford, UK
12:00-12:30	Coffee and snack break	

Date: 18.11.2021
Time: 12:30-14:10
Venue: Congress hall 211

Session 5: IMPLEMENTATION OF NEW POLICIES, TECHNOLOGIES, INNOVATIVE SOLUTIONS AND EQUIPMENT

Time	*Contribution*	*Speaker*
12:30-12:55	NEW CHALLENGES OF GERMAN ENERGY TRANSITION	Dr Dragan Stevanović, HiTES Holding GmbH, Germany
12:55-13:20	RENEWABLE ENERGY SOURCES AND ITS ROLE IN THE FUTURE OF ENERGY SYSTEM OF REPUBLIC OF SRPSKA	Prof. dr Pero Gvero, Mech.eng.Facul. Banja Luka
13:20-13:45	ON COMPETITIVENESS OF POWER SYSTEMS IN TECHNOLOGY TRANSITION	Prof. dr Vojin Grković, Faculty of Technical Sciences, Novi Sad
13:45-14:10	NUKLEARNE ELEKTRANE U SRBIJI I OKRUZENJU >HVALA NE TREBA	Prof. dr Milovan Studović, Mech.eng.Faculty Beograd
14:10-14:30	Coffee break	

Date: 18.11.2021
Time: 12:30-14:10
Venue: Room No. 1

Session 7: THERMAL/HYDRO/WIND/SOLAR AND OTHER POWER PLANTS OPERATION CHALLENGES, Numerical modelling, Conference papers

Time	Contribution	Speaker
12:30-12:50	INFLUENCE OF THE COMBUSTION SYSTEM CHANGE ON PROCESSES IN THE STEAM BOILER IN TPP UGLJEVIK	Prof. dr Goran Stupar, Mech.eng.Faculty Beograd
12:50-13:10	IMPACT ANALYSIS OF PRIMARY MEASURES REDUCTION OF NOX PROCESSES IN STEAM BOILER K-3 OF COMBINED HEAT AND POWER PLANT NOVI SAD	Prof. dr Goran Stupar, Mech.eng.Faculty Beograd
13:10-13:30	SELECTIVE CATALYTIC REDUCTION FOR NOX ABATEMENT: A REVIEW OF THE TECHNOLOGY AND MODELING APPROACHES	Dr Ivan Tomanović, VINCA Institute, Belgrade
13:30-13:50	INFLUENCE OF THE ASH DEPOSIT TYPE ON THE NUMERICAL SIMULATION RESULTS OF A PULVERIZED COAL - FIRED FURNACE	Dr Nenad Crnomarković, VINCA Institute, Belgrade
13:50-14:10	THE CALCULATION OF THREE-DIMENSIONAL FLOW THROUGH A SINGLE STAGE AXIAL GAS TURBINE	Petar Babić, Mech.eng.Facul. Banja Luka

Date: 18.11.2021
Time: 14:30-16:10
Venue: Congress hall 211

Session 6: THERMAL/HYDRO/WIND/SOLAR AND OTHER POWER PLANTS OPERATION CHALLENGES, Conference papers

Time	*Contribution*	*Speaker*
14:30-14:50	DESIGN AND CONSTRUCTION OF A PHOTOVOLTAIC SOLAR POWER PLANT OF 500 KW ON THE ROOF OF THE FACTORY GRUNER Serbian d.o.o. – VLASOTINCE	Miodrag Vuković, "CONSECO Inženjering" Belgrade
14:50-15:10	HYBRID POWER SUPPLY OF THE AGROKAPILARIS® SYSTEM FOR IRRIGATION OF VEGETABLE CROPS ON THE PLOT "GRABOVAC" – OBRENOVAC	Dr Željko V.Despotović, Institute "Mihajlo Pupin", Belgrade, Serbia
15:10-15:30	ASSESSMENT OF POTENTIAL FOR ON-SITE ELECTRICITY PRODUCTION FOR COOLING AND FREEZING FACILITIES BY APPLICATION OF PHOTOVOLTAICS	Milica Jovčevski, Mech.eng.Faculty Niš
15:30-15:50	OVERVIEW OF PART OF THE COAL SUPPLY MANAGEMENT AND SUPERVISION SYSTEM IN TE NIKOLA TESLA B	Vladimir Obradović INFORMATIKA a.d., Belgrade
15:50-16:10	TWO STAGE COGENERATION IN DISTRICT HEATING SYSTEMS	Dr Goce Vasilevski, Mining institute, North Macedonia
16:10	**CLOSING CEREMONY**	

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Date: 18.11.2021
Time: 14:30-16:10
Venue: Room No. 1

Session 8: THERMAL/HYDRO/WIND/SOLAR AND OTHER POWER PLANTS OPERATION CHALLENGES, Renewable power generation/use, Conference papers

Time	*Contribution*	*Speaker*
14:30-14:50	THE TECHNO-ECONOMIC ANALYSIS OF SMALL HYDROPOWER PLANTS INSTALLED PARAMETERS FOR THREE DIFFERENT MOUNTAIN WATERCOURSES	Vidosava Vilotijević, Mech.eng.Faculty Podgorica, Montenegro
14:50-15:10	COMPARATIVE ANALYSIS OF TWO ARTIFICIAL NEURAL NETWORKS IN THE PREDICTION OF THE VIBRATIONAL BEHAVIOR OF A HYDRAULIC TURBINE	Jovana Petrović, Institute “Mihajlo Pupin”, Belgrade, Serbia
15:10-15:30	DIGITAL TECHNOLOGIES EMERGENCE IN THE CONTEMPORARY HYDROPOWER PLANTS OPERATION	Bogdan Ristić, Mech.eng.Faculty Belgrade
15:30-15:50	A METHOD TO DETERMINE THE STRUCTURAL WARNINGS OF MALFUNCTION IN POWER GRID NETWORKS BY USE OF SIMPLICIAL COMPLEXES	Dr Miroslav Anđelković, VINCA Institute, Belgrade
	Short break before **closing ceremony at Congress hall 211**	

ZBORNIK RADOVA
FULL PAPERS PROCEEDINGS

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Table of contents

1. INVITED LECTURES … 1

2. ENVIRONMENTAL AND CLIMATE ASPECTS OF POWER PLANTS OPERATION … 253

3. THERMAL/HYDRO/WIND/SOLAR AND OTHER POWER PLANTS OPERATION CHALLENGES (Numerical modelling) … 322

4. THERMAL/HYDRO/WIND/SOLAR AND OTHER POWER PLANTS OPERATION CHALLENGES … 385