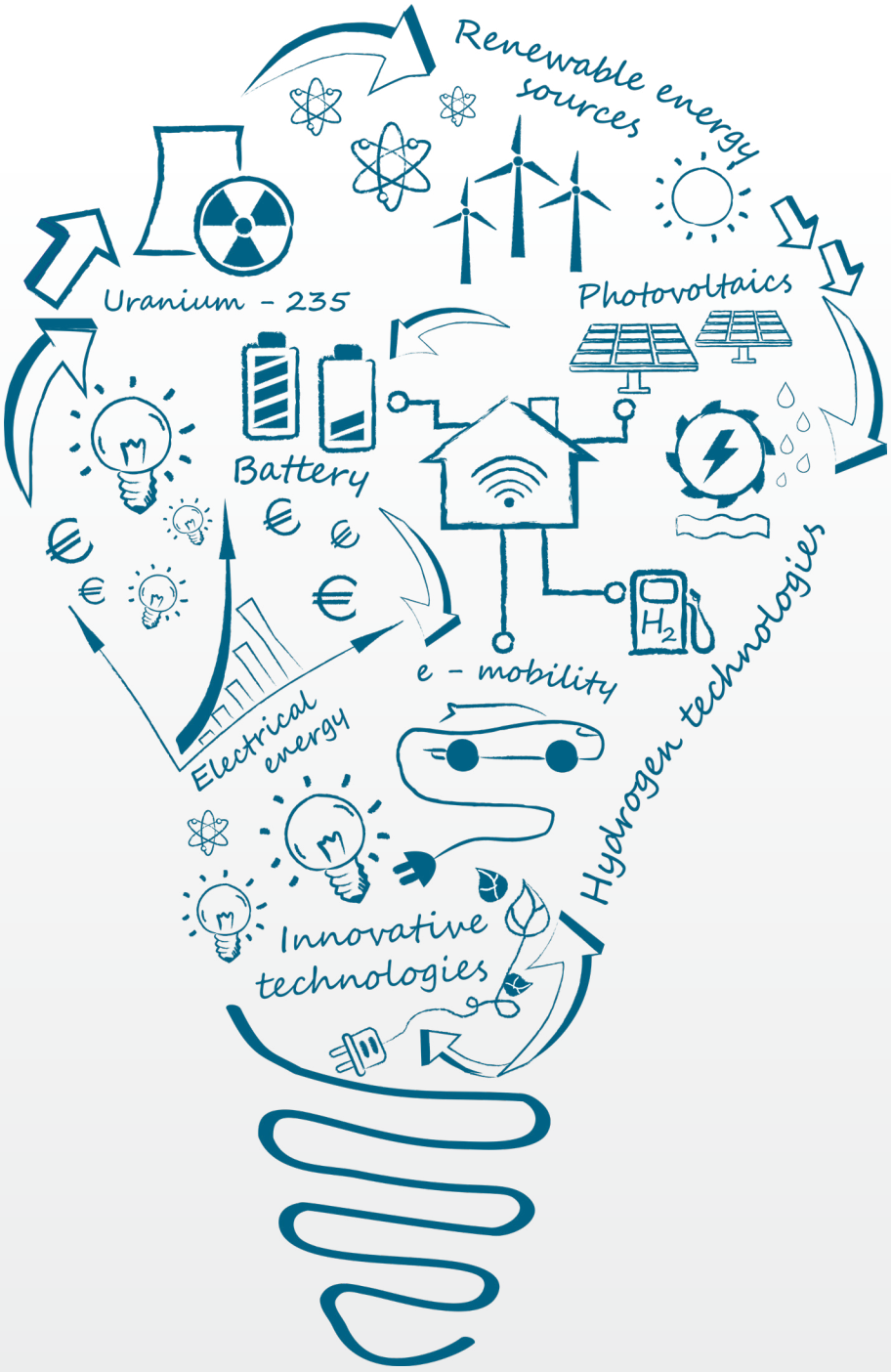
<EnRe>

energy & responsibility

7th INTERNATIONAL CONFERENCE

19 May 2026 / Velenje / Slovenia



University of Maribor
Faculty of Energy Technology

JUST TRANSITION SAŠA

Co-funded by the European Union

I FEEL SLOVENIA

Registration
8.30 - 9.00 (M3)

Welcome speech
9.00 - 9.15 (M3-105, M3-106)
Prof. Sebastijan Seme, Ph.D., Chair of the International Scientific Committee EnRe, Faculty of Energy Technology, University of Maribor
Peter Dermol, Mayor of Municipality Velenje

Plenary session 1
9.15 - 9.35 (M3-105, M3-106)

DISTRICT HEATING CHALLENGES IN THE CONTEXT OF THE TRANSFORMATION OF THE DISTRICT HEATING SYSTEM IN THE ŠALEŠKA VALLEY

Gregor Cvet, Public Utility Company of Velenje

Plenary session 2
9.35 - 9.55 (M3-105, M3-106)

DEFOSSILIZATION OF THE HEATING SECTOR THROUGH AN INTEGRATED ENERGY SYSTEM APPROACH

Marko Bahor, M.Sc., ELES

Round table: Vision for the development of district heating systems in Slovenia
9.55 - 11.05 (M3-105, M3-106)
Moderator: *Slavko Bobovnik*
Stane Merše, M.Sc., Energy Efficiency Centre, Jožef Stefan Institute
Assist. Prof. Dušan Strušnik, Ph.D., Energetika Ljubljana
Gašper Škarja, M.Sc., Chief Executive Officer of the Public Utility Company of Velenje
Ljubo Germič, President of the District Heating Section at the Energy Industry Chamber of Slovenia
Peter Dermol, Mayor of Municipality Velenje

Coffee break
11.05 - 11.20

Round table: 70 years of electricity production
11.20 - 12.30 (M3-105, M3-106)
Moderator: *Slavko Bobovnik*
Branko Debeljak, M.Sc., Chief Executive Officer of Thermal Power Plant Šoštanj
Mitja Tašler, Assistant Director of Thermal Power Plant Šoštanj and Director of HSE SAŠA
Prof. Sebastijan Seme, Ph.D., Faculty of Energy Technology, University of Maribor
Klemen Kotnik, M.Sc., Faculty of Environmental Protection
Jure Šimic, HSE invest d.o.o.

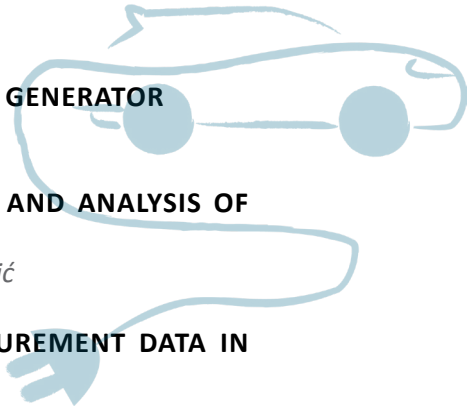
Lunch
12.30 - 13.30

Session 1: Electric Machines, Drives and Power Electronics

13.30 - 15.30 (M3-213)

English language

Moderators: *Amir Tokić*, *Boštjan Polajžer*



CONTROLLABILITY OF AN ELECTRICALLY EXCITED SYNCHRONOUS GENERATOR
Klara Žunić, Boštjan Polajžer

THERMAL MODELLING METHODS FOR OPTIMAL MONITORING AND ANALYSIS OF SMALL SYNCHRONOUS MACHINES
Željko Špoljarić, Vedrana Jerković Štil, Željko Hederić, Krešimir Miklošević

APPLICATION OF PRINCIPAL COMPONENT ANALYSIS TO MEASUREMENT DATA IN ELECTRIC DRIVES
Luka Živković, Tin Benšić, Kristian Knol, Markus Sievers

HIL APPROACH FOR DRONE BRUSHLESS DRIVE TESTING AND ANALYSIS
Tin Benšić, Damir Šoštarić, Željko Hederić, Marinko Barukčić

THE ELECTRONIC IMPACT OF A PWM-GENERATED CONTROLLING SIGNAL ON AN ESC START WITH A BRUSHLESS MOTOR
Damir Šoštarić, Tin Benšić, Željko Hederić

A THREE-PHASE DIODE BRIDGE RECTIFIER MODEL FOR CONTINUOUS CONDUCTION MODE
Ermin Beganović, Hasen Zejćirović, Mensur Kasumović, Marina Pejić, Ivan Ramljak, Amir Tokić

APPLICATION AND SIMULATION OF SVPWM FOR A PMSM DRIVE
Iztok Brinovar, Denis Batiuk, Miralem Hadžiselimović, Bojan Štumberger, Amor Chowdhury

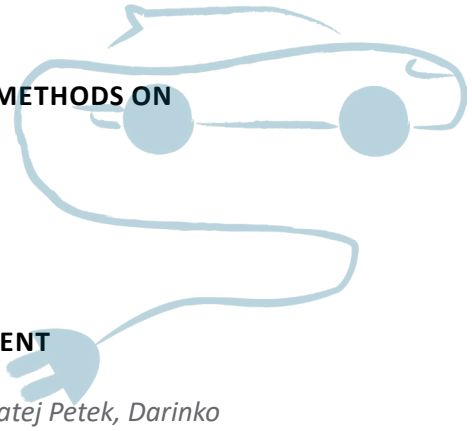
CALCULATION OF A BLDC MOTOR BACK EMF BY FEM SIMULATION AND PYTHON
Marinko Barukčić, Željko Hederić, Danijel Topić

Session 2: Diagnostics, Measurements, Network & Storage

13.30 - 15.30 (M1-119)

English language

Moderators: *Hrvoje Glavaš*, *Peter Bracinik*



OVERVIEW OF THE AVAILABLE CORONA DISCHARGE DETECTION METHODS ON TRANSMISSION LINES

Hrvoje Glavaš, Dina Jukić, Anita Kvaček Blažević

DATA DRIVEN FAULT DIAGNOSIS OF ROTATING MACHINES

Nejc Friškovec, Dalibor Igrec, Amor Chowdhury

EXPERIMENTAL VALIDATION OF A SIMPLIFIED MODEL OF A CURRENT TRANSFORMER

Jernej Černelič, Ermin Rahmanović, Boštjan Polajžer, Gašper Habjan, Matej Petek, Darinko Stich

NONLINEAR INDUCTOR MODELING OF A FERRORESONANT CIRCUIT

Patricija Ronta, Tin Benšić, Željko Hederić, Marinko Barukčić

EFFECT OF SUPRAHARMONICS ON LOSSES IN LOW-VOLTAGE CABLES

Mislav Trbušić, Primož Sukić, Marko Jesenik

EMBEDDED ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY USING A DEDICATED IC FOR SOX ESTIMATION IN LITHIUM-ION CELLS

Denis Batiuk, Iztok Brinovar, Igor Mele, Klemen Zelič, Martin Pec, Tomaž Katrašnik, Amor Chowdhury

STOCHASTIC MODELLING OF LOW-VOLTAGE DISTRIBUTION NETWORKS

Marek Höger, Peter Bracinik, Michal Bahernik

TRANSIENT EVENTS IN LOW VOLTAGE SYSTEMS OF ELECTRIC VEHICLE

Kristian Knol, Tin Benšić, Luka Živković, Patricija Ronta

Session 3: Renewable Energy Sources, Storage, and Multi-Energy Systems

13.30 - 15.30 (M3-105)

Slovenian language

Moderators: *Niko Lukač*, *Marko Jesenik*

RESULTS OF R&D PROJECT HESS – HYBRID ENERGY STORAGE SYSTEM IN POST-MINING INFRASTRUCTURE
Sergej Jamnikar, Gregor Jeromel, Janez Rošer

CONCEPT OF AN INTEGRATED MULTI-ENERGY SYSTEM WITH HYDROGEN-BASED LONG-TERM ENERGY STORAGE
Eva Simonič, Sebastijan Seme, Klemen Sredenšek, Amor Chowdhury

AI-ASSISTED MODELING OF A PHOTOVOLTAIC SYSTEM WITH ENERGY BALANCE AND BATTERY INTEGRATION
Domen Tomše, Amor Chowdhury

THE RISE OF PHYSICS-INFORMED NEURAL NETWORKS FOR LARGE-SCALE ENERGY RESOURCE ASSESSMENT
Niko Lukač, Marko Bizjak

A PROBABILISTIC RELIABILITY ASSESSMENT OF HIGH-VOLTAGE SUBSTATION TOPOLOGIES USING A MONTE CARLO SIMULATION
Franjo Pranjić, Peter Virtič

INTERACTIVE TOOL FOR ANALYZING SELF-SUFFICIENT ENERGY SYSTEMS WITH A SOLAR POWER PLANT, ELECTRIC VEHICLE, AND BATTERY STORAGE
Klemen Srpčič, Sebastijan Seme, Klemen Sredenšek, Eva Simonič

PHOTOVOLTAIC/THERMAL POTENTIAL FOR FOSSIL FUEL REDUCTION IN DISTRICT HEATING
Jernej Počivalnik, Domen Kuhar, Eva Simonič, Sebastijan Seme, Klemen Sredenšek

ESTIMATION OF SOIL MODEL PARAMETERS USING DIFFERENT EVOLUTIONARY OPTIMIZATION METHODS
Marko Jesenik, Jakob Vizjak, Mislav Trbušić

Session 4: Thermal Energy Engineering and Hydropower Engineering

13.30 - 15.30 (M3-106)

Slovenian language

Moderators: *Jurij Avsec*, *Marija Živić*

THE INFLUENCE OF THE EXPANSION VALVE OPENING DEGREE ON THE OPERATION OF THE VAPOR-COMPRESSION SYSTEM IN A HEAT PUMP DRYER
Meldin Huseinović, Jurij Avsec, Anže Volk

USING A HIGH-TEMPERATURE HEAT PUMP FOR HEATING OF GREENHOUSES
Almina Sarajlić, Jurij Avsec, Urška Novosel

DECOUPLING HEAT PRODUCTION AND DEMAND: LONG-TERM EVALUATION OF THERMAL ENERGY STORAGE IN RESIDENTIAL AIR-SOURCE HEAT PUMP SYSTEMS
Matej Đuranović, Vjenceslav Damičević, Marija Živić

MEASURING BOUNDARY LAYER CHARACTERISTICS ON A ROTATING DISK USING LASER DOPPLER ANEMOMETRY
Matej Fike, Andrej Predin, Andraž Roger

CAVITATION DYNAMICS OF AN ULTRASONIC HORN
Marko Pezdevšek, Matej Fike, Andraž Roger, Gorazd Hren

THE APPLICATION OF STATISTICAL THERMOMECHANICS IN ENERGY TECHNOLOGY
Jurij Avsec, Urška Novosel

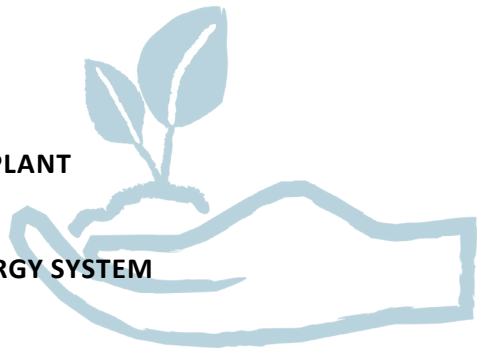
EXPERIMENTAL ANALYSIS OF MATERIALS IN ENERGY ENGINEERING USING PORTABLE X-RAY FLUORESCENCE SPECTROSCOPY
Bojan Stergar, Klemen Sredenšek, Zdravko Praunseis

Session 5: Ecology, LCA, Spatial Planning, and Biodiversity

13.30 - 15.30 (M3-210)

Slovenian language

Moderators: *Gašper Gantar*, *Katarina Flajšman*



LIFE CYCLE ASSESSMENT OF AN AVERAGE SLOVENIAN SOLAR POWER PLANT
Gašper Gantar

FROM DATA TO DECISIONS: LCA AS A KEY TOOL FOR IDENTIFYING ENERGY SYSTEM BOTTLENECKS
Tanja Tajnik

THE ENVIRONMENTAL IMPACTS OF PHOTOVOLTAIC AND WIND POWER SYSTEMS: A PRO AND CONTRA EVALUATION
Katja Črnec, Borut Vrščaj

THE ENVIRONMENTAL IMPACTS OF SOIL REMEDIATION WITH METAL-TO CHAR ENCAPSULATION
Boštjan Drobnič, Mitja Mori, Domen Hojkar, Rok Stropnik, Maj Rudolf Vahtar, Andrej Senegačnik, Mihael Sekavčnik

IMPACTS OF WIND AND SOLAR POWER PLANTS ON WILDLIFE
Katarina Flajšman, Amanda Poplas, Zarja Platovšek, Boštjan Pokorny

THE IMPACT OF POWER LINES ON WILDLIFE – A LITERATURE REVIEW AND EXPERIENCES FROM THE FIELD
Amanda Poplas, Katarina Flajšman

THE IMPACT OF HYDROELECTRIC POWER PLANTS ON BIODIVERSITY, WITH AN EMPHASIS ON FISH SPECIES
Amanda Poplas, Katarina Flajšman

NEW LEGISLATION ON THE SITING AND PERMITTING OF RENEWABLE ENERGY INSTALLATIONS, WITH A FOCUS ON WIND AND SOLAR POWER PLANTS
Tanja Pucelj Vidović

ENERGY, FINANCIAL AND ENVIRONMENTAL SAVINGS ACHIEVED THROUGH THE USE OF THE ISO 9001, 14001 AND 50001 STANDARDS
Drago Papler

Session 6: Energy Transition, Transport, Statistics, and Communications

13.30 - 15.30 (M2-110)

Slovenian language

Moderators: *Janez Rošer*, *Klemen Deželak*

ENHANCING ENERGY EFFICIENCY IN TRANSPORT SYSTEMS: THE REDU-CE-D PROJECT
Domen Kuhar, Jernej Počivalnik, Eva Simonič, Sebastijan Seme, Klemen Sredenšek, Katja Hanzic, Nina Pavletić, Maršenka Marksel, Tomislav Letnik

DESIGN AND ECONOMIC ASSESSMENT OF A 19-SEAT HYDROGEN FUEL CELL AIRCRAFT FOR REGIONAL AVIATION
Anita Prapotnik Brdnik, Maršenka Marksel

PRESENTING LOW-CARBON ENERGY TECHNOLOGIES: THE ENVIRO PROJECT
Manja Obreza, Almina Sarajlić, Eva Simonič, Klemen Srpčič, Klemen Sredenšek, Sebastijan Seme, Matejka Gerjevič, Boštjan Pišotek

GRADUAL CLOSURE OF THE VELENJE COAL MINE 2026–2045 AS PART OF THE JUST TRANSITION OF THE SAŠA REGION
Janez Rošer

INDIGENOUS PRODUCTION OF HYDROGEN AS PART OF THE ANNUAL HYDROGEN STATISTICS
Klemen Deželak

BRIDGING THE GENERALIZATION GAPS IN DEEP LEARNING-BASED CRACK DETECTION THROUGH STRUCTURED SYNTHETIC VARIABILITY
Tadej Pavlin, Klemen Sredenšek, Zdravko Praunseis

THE ROLE OF EIA AND SEA IN THE SPATIAL INTEGRATION OF RENEWABLE ENERGY SOURCES
Klemen Kotnik

SUSTAINABLE MANAGEMENT OF THE GRADUAL CLOSURE OF THE VELENJE COAL MINE
Irena Podgoršek, Simon Klinc, Janez Rošer

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Organizers:

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DEVELOPMENT AGENCY SAŠA

MESTNA OBČINA VELENJE

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FACULTY OF ENVIRONMENTAL PROTECTION

CRTI SAŠA
Center za razvoj terciarnega izobraževanja SAŠA Velenje

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