

<EnRe>

energy & responsibility

6th INTERNATIONAL CONFERENCE
CLIMATE NEUTRALITY AND SUSTAINABLE
GREEN TRANSITION

21 May 2024 / Velenje / Slovenia



University of Maribor

Faculty of Energy Technology

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)

NECP UPDATE GOALS AND LOCAL ENERGY SUPPLY

Stane Merše, M.Sc., Energy Efficiency Centre, Jožef Stefan Institute

Roundtable discussion on the topic of NECP renovation – Impact on larger district heating systems

9.35 - 10.45 (M3-105, M3-106)

Moderator: *Slavko Bobovnik*

Stane Merše, M.Sc., Energy Efficiency Centre, Jožef Stefan Institute
Bojan Kumer, M.Sc., Minister of the Ministry of the Environmental, Climate and Energy
Aleksander Mervar, M. Sc., Director of ELES
Ljubo Gerič, President of the District Heating Section at the Energy Industry Chamber of Slovenia
Prof. Bojan Štumberger, Ph.D., Vice-Dean for Research, Faculty of Energy Technology, University of Maribor

Coffee break

10.45 - 11.00

Plenary session 2

11.00 - 11.20 (M3-105, M3-106)

GREEN TRANSFORMATION OF THE ŠALEŠKA VALLEY DISTRICT HEATING SYSTEM

Gašper Škarja, M.Sc., Director of Public utility company of Velenje

Roundtable discussion on the topic of district heating transformation

11.20 - 12.30 (M3-105, M3-106)

Moderator: *Jerneja Sedlar*

Klemen Košir, Director of the Department for Promoting Green Transition, Ministry of the Environmental, Climate and Energy
Peter Dermol, Mayor of the Municipality of Velenje
Branko Debeljak, M. Sc., Director of Termoelektrarna Šoštanj
Gašper Škarja, M.Sc., Director of Public utility company of Velenje
Prof. Jurij Avsec, Ph.D., Vice-Dean for Educational Activities, Faculty of Energy Technology, University of Maribor

Press Conference

12.45 - 13.45 (M3-213)

Lunch

12.30 - 13.30

Session 1: Electrical devices, machines and drives 1

13.30 - 15.30 (M3-213)

English language

Moderators: Amir Tokić, Adnan Glotić

PROSUMER-RICH DISTRIBUTION POWER NETWORK - PROPOWERNET

Goran Knežević, Danijel Topić

INFRARED THERMOGRAPHY IN THE DETECTION OF WATER STRESS IN PLANTS

Hrvoje Glavaš, Monika Marković, Antonija Strilić

DETERMINATION OF THREE-PHASE DIODE RECTIFIER PARAMETERS FOR DISCONTINUOUS CONDUCTION MODE

Ermin Beganović, Mensur Kasumović, Marina Pejić, Viktor Milardić, Amir Tokić

DEVELOPMENT OF AN EXPERIMENTAL SYSTEM FOR TESTING AN ELECTRIC DRIVE

Luka Živković, Tin Benšić, Goran Kurtović, Marinko Barukčić

SAMPLING INFLUENCE ON FERRORESONANCE SPECTRAL ANALYSIS

Tin Benšić, Kruno Miličević, Davor Vinko, Marinko Barukčić

A CO-SIMULATION FRAMEWORK FOR MODELICA AND PYTHON: A CASE STUDY OF A SIMULATED TEST BENCH MODEL FOR ELECTRIC MOTORS AND DRIVES

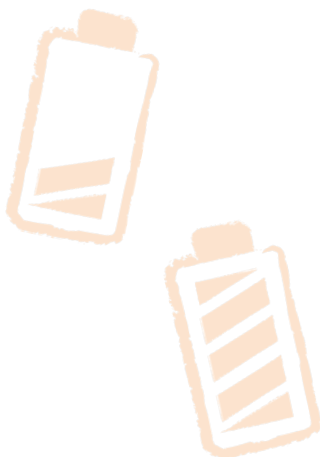
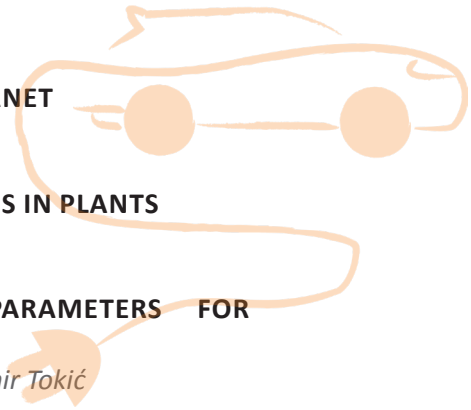
Goran Kurtović, Luka Živković, Tin Benšić, Marinko Barukčić

SCENARIO ANALYSIS OF OPTIMAL PRODUCTION SCHEDULES CONSIDERING DIFFERENT OPTIMIZATION CONSTRAINTS

Adnan Glotić, Dean Jug, Jernej Brglez, Janez Selan, Peter Bedenik, Matjaž Večernik, Matjaž Eberlinc

APPLICATION OF A FUNCTIONAL MOCKUP UNIT-FMU FOR SIMULATION ACCELERATION

Marinko Barukčić, Tin Benšić, Goran Kurtović, Luka Živković



Session 2: Electrical devices, machines and drives 2

13.30 - 15.30 (M1-119)

Slovenian language

Moderators: Marko Jesenik, Franjo Pranjič

THE ROLE OF SLEEP MODE IN MICROPROCESSOR-CENTRIC ELECTRONIC CIRCUIT DESIGN

Dalibor Igrec, Amor Chowdhury

ACCURATE MODELLING OF MAGNETIC MATERIAL HYSTERESIS

Marko Jesenik, Anton Hamler, Mislav Trbušič

CONTROLLABILITY OF A DOUBLY FED INDUCTION GENERATOR

Boštjan Polajžer, Annette Muetze

SOME NOTES ON DESIGNING A SHELL-TYPE REACTOR

Mislav Trbušič, Anton Hamler, Marko Jesenik

ANALYSIS OF ARC INTERRUPTION IN AC AND DC SWITCHING DEVICES

Marko Vodenik, Peter Kitak, Janez Ribič

AN INSIGHT INTO GRID-FOLLOWING AND GRID-FORMING CONTROL FOR INVERTER-BASED RESOURCES IN POWER SYSTEMS

Matej Kerndl, Boštjan Polajžer

HARDWARE IN THE LOOP TESTING OF A PROTECTION MONITORING AND DIAGNOSTIC SYSTEM

Jernej Černelič, Boštjan Polajžer, Janez Zakonjšek, Alexey Nebera, Gorazd Hrovat

REDUCING THE UNCERTAINTY OF CARBON FOOTPRINT CALCULATIONS WITH A DYNAMIC MODEL OF ELECTRICITY'S CARBON FOOTPRINT

Domen Hojkar, Rok Stropnik, Mitja Mori

AGROVOLTAICS IN SLOVENIA: REGULATORY FRAMEWORK, SPATIAL REQUIREMENTS AND POTENTIAL LOCATIONS

Klemen Sredenšek, Eva Simonič, Sebastijan Seme

REVIEW AND UPDATE OF KEY LEARNING CONTENTS, KNOWLEDGE, SKILLS AND EXPECTED LEARNING OUTCOMES FOR A SUSTAINABLE GREEN TRANSITION

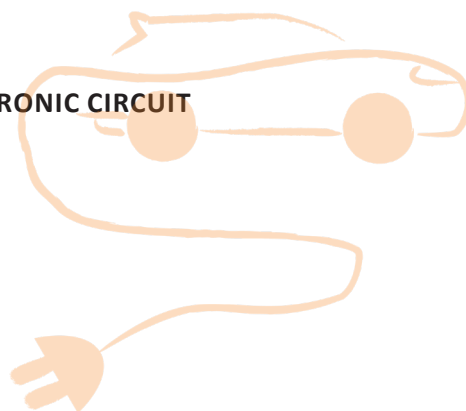
Sonja Krajnc, Bojan Štumberger

DYNAMIC MODELING OF AN IRON CORE INDUCTOR AND ELECTROMAGNETIC BRAKE

Iztok Brinovar, Zdravko Praunseis, Amor Chowdhury, Bojan Štumberger, Miralem Hadžiselimović

HARMONIC MITIGATION STRATEGIES FOR GRID INTEGRATED PV SYSTEMS

Franjo Pranjič, Peter Vrtič



Session 3: Renewable energy sources, storage, and energy management

13.30 - 15.30 (M3-105)

Slovenian language

Moderators: *Miloš Beković, Klemen Deželak*

STUDY OF AN OFF-GRID HOUSEHOLD POWERED BY SOLAR AND HYDROGEN ENERGY

Franco Krog, Urška Novosel

CHALLENGES OF SIMULATION-DRIVEN HIGH-RESOLUTION LAND SURFACE TEMPERATURE ESTIMATION IN URBAN ENVIRONMENTS

Niko Lukač, Gorazd Štumberger, Primož Sukič, Jurček Voh, Marko Bizjak

PRACTICAL EXPERIENCE IN THE DYNAMIC MANAGEMENT OF A SOLAR POWER PLANT

Boris Turha

HOUSEHOLDS' ELECTRICITY CONSUMPTION FROM SMART METERS IN SLOVENIA FOR THE PERIOD 2020-2023

Klemen Deželak

PERFORMANCE OPTIMIZATION OF THE PHOTOVOLTAIC/THERMAL SYSTEM

Klemen Sredenšek, Eva Simonič, Sebastijan Seme

IDENTIFICATION AND EVALUATION OF IMPLICIT AND EXPLICIT FLEXIBILITY MECHANISMS FOR HOUSEHOLD ENERGY MANAGEMENT

Eva Tratnik, Miloš Beković

THE IMPACT OF GEOPOLITICAL FACTORS AND FINANCIAL SUPPORT MECHANISMS ON THE PROFITABILITY OF INVESTMENTS IN SOLAR POWER PLANTS IN SLOVENIA

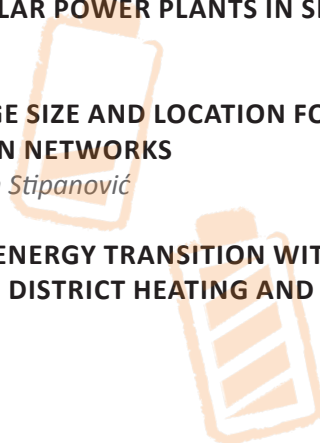
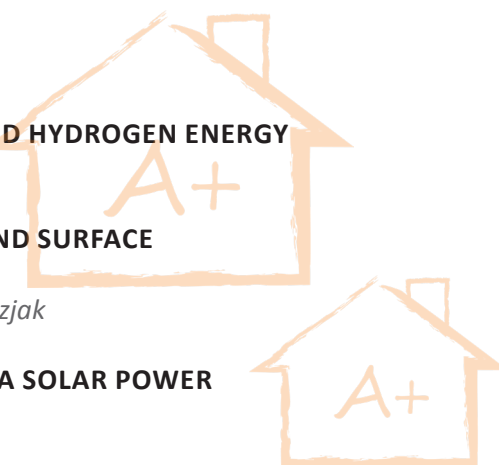
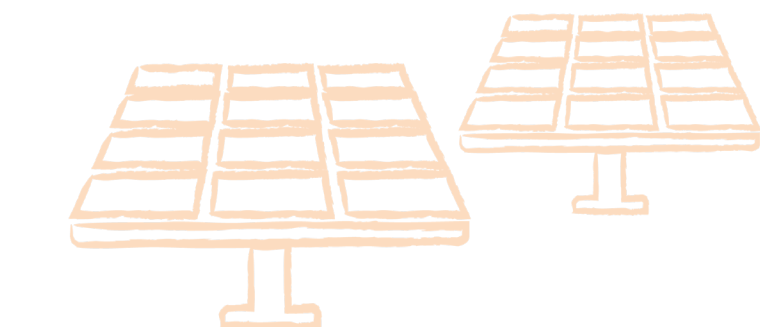
Iztok Gornjak, Niko Samec

STRATEGIC OPTIMISATION OF BATTERY STORAGE SIZE AND LOCATION FOR ENHANCED VOLTAGE PROFILES IN DISTRIBUTION NETWORKS

Miloš Beković, Miran Horvat, Matej Pintarič, Darijan Stipanović

3DIVERSE – NOVEL APPROACHES TO TANGIBLE ENERGY TRANSITION WITH DIVERSIFICATION OF PRODUCTION SOURCES IN DISTRICT HEATING AND LOCALIZED GENERATION OF ELECTRICITY

Boštjan Krajnc, Niko Natek, Nejc Jurko



Session 4: Hydropower, thermal power, and nuclear power

13.30 - 15.30 (M3-106)

Slovenian language

Moderators: Dušan Strušnik, Janez Rošer

ENERGY RENOVATION OF MULTI-APARTMENT BUILDINGS AS A POTENTIAL FOR LOWERING THE TEMPERATURE REGIME OF THE ŠALEŠKA VALLEY DISTRICT HEATING

Gregor Cvet

PIV MEASUREMENTS OF WATER FLOW DURING ULTRASONIC ATOMIZATION

Matej Fike, Andrej Predin, Andraž Roger

CONSERVATION OF FISH MIGRATIONS AT HYDROELECTRIC POWER PLANTS: FISH PASSAGE SYSTEMS AS AN ENVIRONMENTALLY RESPONSIBLE MEASURE

Sandra Velkovski, Boštjan Pišotek

ENVIRONMENTAL AND ECONOMIC PERFORMANCE OF EU CRITICAL MATERIAL RECYCLING FROM A PROTON EXCHANGE MEMBRANE FUEL CELL

Rok Stropnik, Jure Gramc, Mihael Sekavčnik, Anna Marchisio, Orhun Dedeci, Mitja Mori

SPENT NUCLEAR FUEL CHARACTERIZATION

Marjan Kromar, Dušan Čalič

FAILURE ANALYSIS OF THE BRASS COOLING TUBES IN A STEAM TURBINE CONDENSER

Dušan Strušnik, Jurij Avsec

ANALYSIS OF THE ELECTRICITY, HEAT AND CARBON FOOTPRINT OF AN EDUCATIONAL ESTABLISHMENT

Drago Papler, Marijan Pogačnik

HYBRID ENERGY STORAGE SYSTEM USING A POST-MINING INFRASTRUCTURE (HESS)

Sergej Jamnikar, Janez Rošer

ASSESSING THE INFLUENCE OF HYDROELECTRIC POWER PLANTS ON FISH SPAWNING HABITATS

Marko Pezdevšek, Andrej Predin, Matej Fike, Andraž Roger, Gorazd Hren

DESIGN AND CREATION OF A VIRTUAL MODEL OF LOW-CARBON ENERGY RESOURCES

Gorazd Hren, Andrej Predin, Boštjan Pišotek, Garsia Kosinc, Marko Pezdevšek

THE PROCESS OF DEMOCRATIC DECISION- MAKING ON THE SLOVENIAN NUCLEAR FUTURE

Črt Poglajen

VENTILATION STATION NOP II: A NEW STEP FOR SAFE AND RELIABLE COAL MINING OPERATIONS

Gregor Jeromel, Janez Rošer

COAL HERITAGE: CONSERVATION AND PROMOTION OF THE COAL MINING HERITAGE AS EUROPE'S CULTURAL LEGACY

Matjaž Kamenik, Tadeja Jegrišnik, Pavlos Krassakis, Nikolaos Koukouzas, Kamil Szewerda, Dariusz Michalak, Nicolas Charles, Laurent Beccaletto, Robert Hildebrandt, Sylwia Jarosławska-Sobór, Hernan Flores, Tansel Dogan

EVALUATION OF ENERGY FLOWS IN THE DISTRICT HEATING SYSTEM IN VELENJE

Marko Keber, Tine Seljak, Katja Klinar, Andrej Kitanovski, Janez Ramšak



Session 5: Ecology and environmental protection

13.30 - 15.30 (M3-210)

Slovenian language

Moderators: *Gašper Gantar, Anja Bubik*

MARINE LITTER - FROM THE SLOVENIAN COAST TO THE OTRANTO GATE

Natalija Špeh

OVERCOMING CHALLENGES IN MICROPLASTIC SAMPLING IN WATER BODIES FOR CLIMATE NEUTRALITY AND GREEN TRANSITION

Aljoša Krajnc, Anja Bubik

PREPARATION OF THE ACTION PLAN FOR THE DECARBONISATION OF A PRODUCTION COMPANY

Gašper Gantar

SUSTAINABILITY REPORTING IN ACCORDANCE WITH THE NEW CSRD DIRECTIVE (CORPORATE SUSTAINABILITY REPORTING DIRECTIVE) AND THE ESRS STANDARDS (EUROPEAN SUSTAINABILITY REPORTING STANDARDS)

Tanja Tajnik

HEAVY METAL CONTENT IN SOILS OF SELECTED AGRICULTURAL USES IN RELATION TO THEIR NATURAL BACKGROUND

Borut Vrščaj, Ana Strmčnik, Lucija Božijak

CLIMATE CHANGE IMPACT ON RUNOFF QUANTITIES IN SLOVENIA

Peter Frantar

URBAN WASTEWATER POTENTIAL FOR ENERGY AND NUTRIENT RECOVERY

Nataša Uranjek

HEAVY METAL CONTENT IN SOILS OF SELECTED HOP PLANTATIONS IN RELATION TO THEIR NATURAL BACKGROUND

Borut Vrščaj, Lucija Božijak



Session 6: Student section

13.30 - 15.30 (M1-205)

Slovenian language

Moderators: Zdravko Praunseis, Jurij Avsec

METHODS FOR RECYCLING PHOTOVOLTAIC MODULES AND ELEMENT RECOVERY PROJECTIONS IN SLOVENIA

Manja Obreza, Nejc Friškovec, Klemen Sredenšek, Sebastijan Seme

CABLE INSULATION AGING ANALYSIS WITH X-RAY FLUORESCENCE SPECTROMETRY

Nejc Friškovec, Manja Obreza, Marko Pirc, Klemen Sredenšek, Zdravko Praunseis

THE IMPACT OF RESIDENTIAL ELECTRICAL ENERGY GENERATION, CONSUMPTION, AND STORAGE ON DISTRIBUTION GRID VOLTAGE

Eva Simonič, Sebastijan Seme, Karel Zupanc, Klemen Sredenšek

THE IMPACT OF LEGISLATIVE CHANGES ON THE ELIGIBILITY OF AN INVESTMENT IN A PHOTOVOLTAIC SYSTEM AND ELECTRICITY STORAGE

Eva Bahčič, Eva Simonič, Klemen Sredenšek, Sebastijan Seme

QUALITY CONTROL IN ROBOTIC WELDING OF STEEL SURFACES

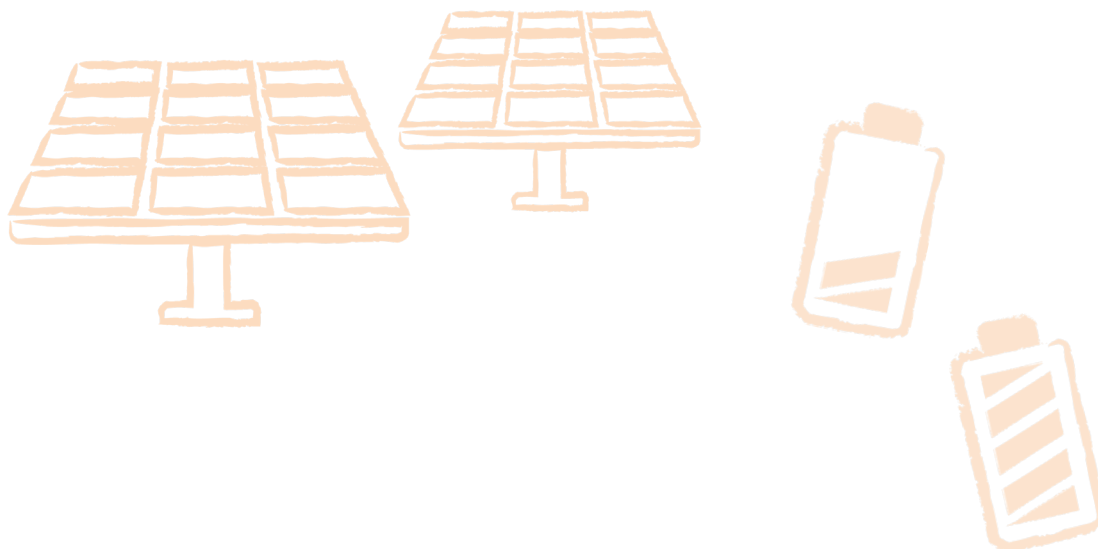
Luka Perovič, Klemen Sredenšek, Zdravko Praunseis

AUTOMATED WELDING TECHNOLOGIES FOR TUBULAR STEEL FABRICATION

Aleksa Radovanović, Klemen Sredenšek, Zdravko Praunseis

ENERGY RENOVATION OF CULTURAL HERITAGE ON A CASE STUDY VILA ROŽLE

Uroš Mičič, Zdravko Praunseis, Iztok Brinovar





PREMOGOVNIK
VELENJE



MESTNA OBČINA
VELENJE



Dravske elektrarne Maribor



Skupina  hse



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA VISOKO ŠOLSTVO,
ZNANOST IN INOVACIJE

