XXIII[rd] International Conference

New Cryogenic and Isotope Technologies for Energy and Environment

EnergEn 2021

Băile Govora, ROMANIA

26-29 October, 2021

PROGRAMME

Organized by
the National Research and Development Institute for Cryogenics and Isotopic Technologies - ICSI Rm. Valcea
&
the Ministry of Research, Innovation and Digitization

New Cryogenic and Isotope Technologies for Energy and Environment

EnergEn 2021

Băile Govora, Romania

October 26-29, 2021

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EnergEn 2021 PROGRAMME … at a glance

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Organizing Committee

Day 1 - October 27, 2021

10:30 -11:30	Conference Opening *Location – Conference Hall ICSI Rm. Valcea*	
	Chairman Welcome Speech – EnergEn 2021 *Mihai Varlam* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania	
	Iulian Popescu Ministry of Research, Innovation and Digitization, Romania	
	Virgil Daniel Popescu Ministry of Energy, Romania	
	Cosmin Ghiță SN Nuclearelectrica SA, Romania	
	Dumitru Coman Chimcomplex SA, Romania	
PLENARY SESSION *Location Conference - ICSI Rm. Valcea*		
Chairperson: *Liviu Stefan*		
11:30 -12:00	Cernavoda Tritium Removal Facility Project Status and Objectives *Andrew Roberts* KINECTRICS, Canada	
12:00 -12:30	Reserved title *Tudor Prisecaru* University Politehnica of Bucharest, Romania	
12:30 -13:00	Technology Accelerator Network Modality to Promote Innovation Ecosystem in Materials Science for Energy and Environment *Ashok Vaseashta* International Clean Water Institute and New Jersey University, USA	
13:00 - 14:00	Lunch	
14:00 -17:15	**PARALEL SCIENTIFIC SESSIONS**	
	HYDROGEN ENERGY TECHNOLOGIES – Part I *Location – ICSI Rm. Valcea: Conference Room A*	**ISOTOPES IN ENVIRONMENTAL STUDIES AND LIFE QUALITY APPLICATIONS – Part I** *Location - ICSI Rm. Valcea: Conference Room B*
	Chairpersons: *Julia Amici & Adriana Marinoiu*	Chairpersons: *Ashok Vaseashta & Oana Romina Botoran*
14:00 -14:30	Keynote: Research Challenges for Zero Carbon and Sustainable Fuels: Prospects and the Pathway Forward for the Clean Energy of the Future *Mohamed Pourkashanian* Energy Institute and Translational Energy Research Centre, University of Sheffield and International Flame Research Foundation (IFRF), UK	Keynote: Large-Scale Atmospheric Circulation Patterns Embedded in the Stable Isotope Composition of Precipitation *Aurel Persoiu* Emil Racoviță Institute of Speleology Cluj Napoca, Romanian Academy, Romania
14:30 -14:45	Energy Storage and Hydrogen Technologies *Vilt Călin* CNR-CME, Romania	Environmental Radiocarbon and CO_2 Level in the Atmosphere of Ramnicu Valcea, Romania *Ionut Făurescu* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
14:45 -15:00	Control of a bioregenerative raw material hydrogen production process through artificial intelligence *Vladimir Tanasiev* University Politehnica of Bucharest, Romania	The Influence of an Altitudinal Gradient on the Conifer-Soil Relationship in a Temperate Forest of Romania *Anca Zaharioiu* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania

15:00 -15:15	Feasibility of H_2 production by CH_4 formation, corroborated with CO_2 storage in salt mines formed by dilution *Sorin Popescu* University of Petrosani, Department of Mechanical, Industrial and Transport Engineering, Romania	Biodegradation of Pentachlorophenol by Sphingobium Chlorophenolicum DSM 7098 and detection of its metabolites by UHPLC-Q-Orbitrap HRMS *Silviu Badea* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
15:15 -15:30	Coffee Break	
15:30 -16:00	Keynote: Development of Amorphous/Nanocrystalline LSC based cathodes for IT-SOFC *Tayfur Ozturk* Middle East Technical University, Turkey	Keynote: Application of stable isotope ratio analysis for the characterization of pharmaceuticals, cosmetics and supplements *Matteo Perini* Fondazione Edmund Mach - Istituto Agrario San Michele All'Adige Center of Technology Transfer (CTT) Department, Italy
16:00 -16:30	Invited: Nuclear Hydrogen Projects to Support Clean Energy Transition *Alina Constantin* International Atomic Energy Agency, Austria TEACHY - road to smart specialization *Ioan Iordache* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania	Keynote: Multisensory systems based on electrochemical sensors and biosensors used in the analysis and monitoring of natural waters quality *Constantin Apetrei* “Dunărea de Jos” University of Galaţi, Faculty of Sciences and Environment, Department of Chemistry, Physics and Environment, Romania
16:30 -16:45	Screw Compressor Used to Compress a Mixture of H_2 and Natural Gas *Nitulescu Marian* INCD Turbomotoare COMOTI, Romania	Isotopic Models for Detecting Food and Beverage Authenticity *Oana Romina Botoran* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
16:45 -17:00	Schlieren Visualization of Hydrogen Fuelled Detonation Flow *Andrei Vlad Cojocea* INCD Turbomotoare COMOTI, Romania	Application of stable isotope analysis in forensic anthropology *Güner Gemai* National Institute of Legal-Medicine “Mina Minovici” Bucharest, Romania
17:00 -17:15	Combustion of hydrogen-methane mixtures in gas turbines *Razvan Carlanescu* INCD Turbomotoare COMOTI, Romania	The Development of a Food Supplement with Antioxidant Properties *Adina Frum* "Lucian Blaga" University of Sibiu

Day 2 - October 28, 2021

09:00 - 13:30	**PARALEL SCIENTIFIC SESSIONS**	
	HYDROGEN ENERGY TECHNOLOGIES – Part II *Location – ICSI Rm. Valcea: Conference Room A*	**ISOTOPES IN ENVIRONMENTAL STUDIES AND LIFE QUALITY APPLICATIONS – Part II** *Location - ICSI Rm. Valcea: Conference Room B*
	Chairpersons: *Simona Nica (Ion) & Athanasios Tiliakos*	Chairpersons: *Carmen Varlam & Andreea Rădulescu*
09:00 - 09:30	Invited: Hydrogen, the key to the green transition "Common Responsibility, Differentiated Application" *Iulian Iancu* Institutul Naţional de Cercetări Economice al Academiei Române „Costin C. Kiriţescu”	Keynote: Pollutants in the Aquatic Ecosystems of the Lower Danube and North Western Black Sea Basins *Carmen Lidia Chiţescu* Romanian Centre for Modelling Recirculating Aquaculture Systems and Faculty of Medicine and Pharmacy, “Dunarea de Jos” University of Galaţi, Romania
09:30 - 10:00	Keynote: Green Hydrogen in Romania: elements of a strategy *Mihai Bălan* Energy Policy Group (EPG)	Keynote: Ion Mobility-Mass Spectrometry: Principles and Applications *Karel Lemr* Palacky University, Olomouc, Cehia
10:00 - 10:15	The Electronic Structure of the α-MgH_2 Grain Boundaries *Viorel Chihaia* Romanian Academy, “Ilie Murgulescu” Institute of Physical Chemistry, Romania	Climate change shifts the trend of metalloid content in the last two decades *Andreea Maria Iordache* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
10:15 - 10:30	Prediction of the equilibrium shape of the Mg-based nanoparticles by Wulff construction *Andreea Neacşu* "Ilie Murgulescu" Institute of Physical Chemistry, Romania	The use of freshwater bryozoans as emerging bioindicators for water pollution in Danube Delta *Ira Simionov* “Dunarea de Jos” University of Galaţi, Romania
10:30 - 10:45	Electronic and structural states of Al:$SrTiO_3$ photocatalyst for water-splitting *Marius Adrian Husanu* "Ilie Murgulescu" Institute of Physical Chemistry, Romania	The distribution of persistent organic pollutants (POPs) in the environment-plant chain – Baia Sprie and Copșa Mica case study *Elisabeta Irina Geană* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
10:45 - 11:00	Coffee Break	
	MATERIAL SCIENCE FOR ENERGY AND ENVIRONMENT– Part I *Location – ICSI Rm. Valcea: Conference Room A*	**LITHIUM BATTERY TECHNOLOGIES** *Location - ICSI Rm. Valcea: Conference Room B*
	Chairpersons: *Aldea Nicolae & Violeta Niculescu*	Chairpersons: *Diana Lazăr & Mihaela Buga*
11:00 - 11:30	Keynote: Electrochemical impedance spectroscopic investigations of porous and gas diffusion electrodes for various applications *Norbert Wagner* German Aerospace Center(DLR) Institute of Engineering Thermodyna mics, Stuttgart, Germany	Keynote: Thermal Energy Storage Nanomaterials Based on Mesoporous Silica Matrices *Raul Mitran* “Ilie Murgulescu” Institute of Physical Chemistry, Romanian Academy, Bucharest, Romania

11:30 - 12:00	Invited: Preparation and electrochemical evaluation of covalently functionalized reduced graphene oxide materials *Simona Nica (Ion)* Romanian Academy, "C. D. Nenitzescu" Institute of Organic Chemistry, Bucharest, Romania	Keynote: Enabling safer Lithium-metal cells through composite solid electrolytes toward *Julia Amici* Dipartimento Scienza Applicata a Tecnologia – Politecnico di Torino, Italia
12:00 - 12:30	Top Synthesis, Characterization and Nano-Fabrication Techniques *Marius Enachescu* University Politehnica of Bucharest, Romania	Keynote: Myths and reality in using and misusing lithium based rechargeable batteries *Văireanu Dănuț/Alina Ciobotaru* University "Politehnica" of Bucharest, Bucharest, Romania
12:30 - 12:45	Single-stage Synthesis of Nitrogen-doped Graphene Oxide *Adriana Marinoiu* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania	Doped vanadium oxide films by physical vapour deposition method for energy storage application *Teddy Tite* National Institute of Materials Physics, Magurele, Romania
12:45 - 13:00	3D self-assembled SrTi1-xAlxO_3/FeOOH heterostructures into complex architectures with effective photocatalytic applications *Adrian Iulian Borhan* Alexandru Ioan Cuza University of Iasi, Romania	Li-Ion Battery Simulation Solution *Mahu Răzvan* TENSOR SRL - ANSYS Channel Partner in Romania
13:00 - 13:15	Self-assembled $SrTiO_3$/$NiFe_2O_4$ /Carbon nanotubes as sponge-like nanoheterostructure for environmental applications *Daniel Gherca* National Institute of Research and Development for Technical Physics, Iasi Romania	Keynote: Study on the Water-Soluble Binder for Silicon-Based Anode in Lithium-ion Batteries *Aishui Yu* Department of Chemistry – FUDAN University, China
13:15 - 13:30	Ionic Conductivity and Dielectric Relaxation of NASICON Superionic Conductors at the Near-Cryogenic Regime *Athanasios Tiliakos* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania	
13:30 - 14:30	Lunch	
14:30 - 17:15	**PARALEL SCIENTIFIC SESSIONS**	
	MATERIAL SCIENCE FOR ENERGY AND ENVIRONMENT– Part II *Location – ICSI Rm. Valcea: Conference Room A* Chairpersons: *Laurentiu Asimopolos & Ciprian Iacob*	**TRITIUM R&D AND TECHNOLOGICAL TRANSFER FOR FUSION AND FISSION – Part I** *Location – ICSI Rm. Valcea: Conference Room B* Chairpersons: *Dănuț Văireanu & Amalia Soare*
14:30 - 15:00	Keynote: Nanofibers of Electret Polymers for Tactile Sensing and Wearable Electronics *Ashok Vaseashta* International Clean Water Institute and New Jersey University, USA	Keynote: Experimental Setup for the Study of a Hydrophobic Platinum Catalyst in a Direct-flow Reactor *Dmitry Kuzmin* NRC «Kurchatov Institute» - PNPI, Rusia

15:00 - 15:30	Keynote: Polysaccharide-based polyelectrolyte membranes for fuel cells *Valeria Harabagiu* "Petru Poni" Institute of Macromolecular Chemistry, Romania	Keynote: Tritium transport behavior in fusion reactor and the environmental effect *Ni Muyi* IFCEN, SYSYU, China
15:30 - 16:00	Invited: Composite Nafion® Membranes with Differently Doped Nano-Crystalline Yttria-Stabilised-Zirconia (YSZ) for Proton Exchange Membranes Fuel Cells (PEMFCs) Applications in Drastic Conditions *Ada Sacca* National Research Council of Italy – Institute for Advanced Energy Technologies "Nicola Giordano" (CNR- ITAE), Italy	In-situ TEM investigation on the evolution and mechanism of dislocation loops in BCC metal materials during ion irradiation *Guang Ran* Xiamen University, China Study on hydrogen isotope permeation behavior and surface modification technology of FeCrAl *Huang Hongtao* IFCEN, SYSYU, China
16:00 - 16: 15	Solid polymer electrolytes for solid-state batteries *Ciprian Iacob* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania	Effects of Fe/Cr/Ni/Mn on hydrogen adsorption, dissociation and diffusion in hydrogen permeation barrier of alfa-Al_2O_3 *Jiang Man* HUST, China
16:15 - 16:30	Hard carbon derived from waste biomass for Na-ion batteries *Cristina Pană (Niță)* National Institute for Lasers, Plasma and Radiation Physics (INFLPR), Magurele, Romania	A New Method to Generate Very Low Gas Flows for Calibration of Hydrogen Permeation Measurement. Part 1: Concept and Feasibility Testing *Bidica Nicolae* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
16:30 - 16:45	Fe-BTC Metal-Organic Framework for Efficient Photocatalytic Oxidation of Neutral Red from Water *Violeta Niculescu* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania	
16:45 - 17:00	Combined CO_2 and Steam Reforming of Methane – Viable Way for Syngas Production *Diana Lazăr* ITIM Cluj-Napoca, Romania	
17:00 - 17:15	Working Gas Influence on Stirling Engine Efficiency. A Theoretical Approach for Ideal Gases *Aldea Nicolae* ITIM Cluj-Napoca, Romania	
17:15 - 17:30	Coffee Break	
17:30- 18:30	e-POSTER SESSION	

Day 3 - October 29, 2021

09:30 - 11:00	**PARALEL SCIENTIFIC SESSIONS**	
	MATERIAL SCIENCE FOR ENERGY AND ENVIRONMENT– Part III *Location – ICSI Rm. Valcea: Conference Room A* Chairpersons: *Cristina Pană (Niţă) &Gheorghe Ioniţă*	**TRITIUM R&D AND TECHNOLOGICAL TRANSFER FOR FUSION AND FISSION – Part II** *Location – ICSI Rm. Valcea: Conference Room B* Chairpersons: *Sebastian Brad & Anisia Bornea*
09:30 - 09:45	High temperature oxidation of alternative Bond Coat materials as part of Thermal Barrier Coating Systems *Amalia Soare* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania	Advantages and constraints of specific Autocad Plant 3D functions for dynamic management - Case study for the CERNAVODA N.P.P. plant - detritiation installation *Niţă Iulian Pavel* RATEN CITON, Romania
09:45 -10:00	Hydrothermal Functionalization of the CVD Grown 3D-Graphene Foam for Hydrogen Evolution Reaction in Alkaline Environment *Daniela Ion-Ebraşu* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania	Involvement of Magurele professional comunity in transat project activities and future R&Ddevelopments *Niţă Iulian Pavel* RATEN CITON, Romania
10:00 - 10:15	Increasing the accuracy in diagnosing the condition of cellulose insulation in transformer units through analysis and implementation of a new marker *Dumitru Sacerdoţianu* ICMET Craiova, Romania	Micro-Channel Reactor for Low Level H_2 Oxidation Within an O_2 Stream: Preliminary Tests in View of Integration in a H_2 Generator Within CECE Process *Alina Elena Niculescu* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
10:15 - 10:30	Superconducting Quadrupole Lens. Design and Numerical Modelling *Enache Dan* INCDIE ICPE-CA, Romania	Tritium Effects in Polymers *Cristian Postolache* National Institute for Physics and Nuclear Engineering "Horia Hulubei", Magurele, Romania
10:30 - 10:45	Effect of the Preparation Conditions on the Catalytic Efficiency of CoPt Catalyst for MOR *Dragoş Pînzaru Oana Georgiana* National Institute of R&D for Technical Physics, Iasi, Romania	Extension of Tritium Removal Facility PESTD with R&D Capabilities – TRI-VALCEA *Liviu Stefan* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
10:45 - 11:00	Hierarchical MgO prepared through one-pot slow pyrolysis process of MgAl-LDH and ITS superb cadmium adsorption properties *Buema Gabriela* National Institute of R&D for Technical Physics, Iasi, Romania	
11:00 - 11:10	Closing the Conference	

e-POSTER PRESENTATION

Thursday - October 28, 2021

Hydrogen Energy Technologies (HET)	
HET 1-P	Daniel G. Angelescu *Molecular Dynamic Study on the Stability of MgH_2 Surfaces* Romanian Academy, "Ilie Murgulescu" Institute of Physical Chemistry, Bucharest, Romania
HET 2-P	Adrian Armeanu *Development of Hydrogen-Enriched Gas Production Systems from Renewable Sources with Applications in Clean Energy Generation* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 3-P	George Călianu *Blockchain Real Time Data Acquisition from RES* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 4-P	Elena David *Thermochemical Conversion of Organics Derived from Biomass Over Fe/Al_2O_3 Catalyst for Hydrogen Rich Gas Production* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 5-P	Raluca Felseghi *Overview of IoT Paradigm for the Sustainable Construction Sector* Faculty of Civil Engineering, Civil Engineering and Management Department, Technical University of Cluj-Napoca, Romania
HET 6-P	Mihaela Iordache *Innovative Concept of Electrochemical Conversion of CO_2 With Generation of H_2* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 7-P	Ana-Maria Nasture *Efficiency and Safety Aspects for a High Pressure PEM Electrolyser at ICSI Rm. Valcea* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 8-P	Anisoara Oubraham *Development of Cu /ZnO/Al_2O_3 Catalysts for the Synthesis of Green Methanol by CO_2 Hydrogenation* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 9-P	Gabriel Rasoi *Design and Concept of an Experimental Hydrogen Storage System Based on Metal Hydride Materials for Energy Applications Research: A Case Study* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 10-P	Ioan-Sorin Sorlei *A Brief Review of Fuel Cell Electric Vehicles' Energy Management Strategies and Their Topologies* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 11-P	Maria Simona Răboacă *Opal RT Platform for Blockchain Real Time Data Acquisition* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 12-P	Maria Simona Răboacă *Enabling Peer-To-Peer Electric Vehicles Charging* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 13-P	Maria Simona Răboacă *Opal RT Techonology an Real-Time Testing Techniques* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
HET 14-P	Maria Simona Răboacă *Dynamic Dataset Generation of Ev Charging Networks for Reinforcement Learning Algorithms* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
Lithium Battery Technologies (LBT)	
LBT 1-P	Mihaela Buga *Hybrid Power-Energy Electrodes for Next Generation Lithium-Ion Batteries – HYDRA* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
LBT 2-P	Andreea Culcea *Battery-Type Positive Electrode for Li-Ion Supercapatteries* National Institute for Research and Development in Electrical Engineering ICPE-CA, Bucharest, Romania

LBT 3-P	Claudiu Fleaca *Laser Pyrolysis SnOx Nanoparticles - Characterization and Testing for Li-Ion Battery Anodes* National Institute for Laser, Plasma and Radiation Physics, Magurele, Bucharest, Romania
LBT 4-P	Cosmin Ungureanu *Silica-Based Materials as High-Performance Lithium-Ion Battery Anodes* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
LBT 5-P	Adnana Spinu-Zaulet *Tris(Trimethylsilyl) Borate as an Efficient Electrolyte Additive for Nickel-Rick NMC811 Cathode in Lithium-Ion Battery* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
Material Science for Energy and Environment (MEE)	
MEE 1-P	Iulia Armeanu *Capacity absorbance of biodegradable material used to remove hydrocarbons* University of Bucharest, Faculty of Physics, Magurele, Romania
MEE 2-P	Gabriela Blăniţă *Metallic-nanoparticles on mesoporous silica structures* National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania
MEE 3-P	Simona Borta *Development of Novel NASICON Ceramic Electrolyte Membrane for Seawater Batteries with High Rate of Conductivity* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
MEE 4-P	Catalin Brill *Design and applications of rotating feedthrough based on magnetic fluids* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
MEE 5-P	Oana Grad *Sustainable Laboratory Method for PGM Recovery from Spent Automotive Catalytic Convertors* National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania
MEE 6-P	Hajar Ghannam *Advanced Electrode Based on Zinc Oxide and Vanadium Oxide-Graphene for Sodium-Ion Battery: Influence of Morphology and Doping* National Institute of Materials Physics, Magurele, Romania
MEE 7-P	Mihaela Iordache *Solid State Electrolyte ($Na_3Zr_2Si_2PO_{12}$) with Improved Ionic Conductivity* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
MEE 8-P	Anca Mihaela Istrate *Step-by-Step Design Process of a Liquid Hydrogen Tank* Romanian Research and Development Institute for Gas Turbine COMOTI, Bucharest, Romania
MEE 9-P	Iulia Ioana Lungu *Iron Oxide Nanoparticles Synthesized by Laser Pyrolysis for Oncological Applications* National Institute of Laser, Plasma and Radiation Physics, Magurele, Romania
MEE 10-P	Elena Marin *Synthesis and Characterization of Brominated Poly(2,6-dimethyl phenylene oxide) Polymer* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
MEE 11-P	Adriana Marinoiu *Single-stage Synthesis of Graphene Oxide Functionalized with Platinum-Cobalt-Ceria* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
MEE 12-P	Adriana Marinoiu *Single-stage Synthesis of Graphene Oxide Doped with Iodine* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
MEE 13-P	Adriana Marinoiu *Membrane Electrode Assemblies for PEMFCs Including Fully Integrated Graphene-based Electrodes Prepared by Laser and Microwave Methods* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
MEE 14-P	Adriana Marinoiu *Synthesis of Graphene-based Materials Functionalized with Azulene and PEMFC Functionality Testing with Innovative Electrodes* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania

MEE 15-P	Cristina Obreja *Bio-Supercapattery's Modified Electrodes Based on High Content Bacteria-Secreted Electron Shuttles Biofilms* National Institute for Research and Development in Electrical Engineering ICPE-CA, Bucharest, Romania
MEE 16-P	Anisoara Oubraham *Functionalization of the Poly(2,6-dimethyl phenylene oxide) Polymer with Bromine* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
MEE 17-P	Irina Petreanu *Amino-Functionalised Silica Nanoparticles – Synthesis and Characterization* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
MEE 18-P	Claudia-Valentina Popa *Antioxidant and UV Protection Effect of Selected Types of Berries* "Cantacuzino" National Military Medical Institute for Research and Development, Bucharest, Romania
MEE 19-P	Simona Rada *Advanced electrode materials: electrochemical and mechanical performances* National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania
MEE 20-P	Irina-Maria Sturzeanu *Influence of the Thermal Stress Regime on the Properties of C25/30 Concrete Used for Nuclear Buildings* Institute for Nuclear Research, Campului Street, No.1, Mioveni, Arges, Romania
MEE 21-P	Felicia Vasut *Comparison of Producing Platinum on Reduced Graphene Oxide Nanosheets Obtained Under Microwave Irradiation, Using Reducing Agents* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
MEE 22-P	Adriana Vulcu *Nitrogen-Doped Graphene Catalysts Efficient in Oxygen Reduction Reaction in Alkaline Media* National Institute for Research and Development of Isotopic and Molecular Technologies, Romania
Isotopes in Environmental Studies and Life Quality Applications (IEL)	
IEL 1-P	Asimopolos Laurentiu *Geological And Geophysical Considerations Regarding the Mineral and Geothermal Waters from the Ramnicu Valcea - Govora Area* Geological Institute of Romania, Bucharest, Romania
IEL 2-P	Asimopolos Natalia-Silvia *Geological Study About The Hydromineral and Geothermal Deposit Călimănești -Căciulata* Geological Institute of Romania, Bucharest, Romania
IEL 3-P	Oana Romina Botoran *Carbon isotopes in evergreen plants as climatic markers* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 4-P	Gheorghe Bulubasa *A New Method for Helium Isotopes Separation by Gas Chromatography* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 5-P	Corina Ciucure *Multiclass Organic Contaminants Residues in Fish Muscle Tissue of Different Species Collected from Middle and Lower Course of the Olt River, Romania* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 6-P	Diana Costinel Aspects regarding the transport of water with different H-O concentrations from soil to plants National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 7-P	Livia Alexandra Dinu *Electrochemical Detection of Glyphosate Based on Molecularly Imprinted Polypyrrole-Modified Gold Electrode and Dispersed Gold Nanoparticles on Reduced Graphene Oxide* National Institute for Research and Development in Microtechnologies, Bucharest, Romania
IEL 8-P	Raluca Felseghi *Standalone Green Hybrid Energy System for a Small Community. Case Study* Faculty of Civil Engineering, Civil Engineering and Management Department, Technical University of Cluj-Napoca, Romania

IEL 9-P	Elena Gorincioi *^{13}C NMR Investigations of Radical Scavenging Activities of Ascorbic Acid and Resveratrol Using 1,1-Diphenyl-2-picrylhydrazyl* Tiraspol State University, Chișinău, Moldova
IEL 10-P	Roxana Elena Ionete *Water Chemistry and O-H-N Stable Isotopes Pattern as Tools for Tracing Sources of Contamination* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 11-P	Roxana Elena Ionete *Using Isotopic Profile of Fruits to Differentiate Botanical Origin – Preliminary Data* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 12-P	Adriana Marinoiu *Bringing Together Quantum Sieving Process and Metal-organic Frameworks to Develop a New Hydrogen Isotope Separation Technology* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 13-P	Adriana Marinoiu *Chemical Affinity Separation (CAQS) for the MOF Study in Isotopic Exchange Separation – Triazolate-based Ligand Synthesis for the Production of the MFU-4L MOF* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 14-P	Papp Delia Cristina *Interpretation of Isotopic Data for Groundwaters in the Olănești Area Comparisons with Other Carpathian Zones* Geological Institute of Romania, Bucharest, Romania
IEL 15-P	Diana Popescu *Determination of Pesticide Residues in Honey: a Preliminary Study from Various Romanian Honey Producers* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 16-P	Violeta Popescu *Chemical Profile, Antimicrobial Activity of Essential Oil and Elemental Composition of Dill (Anethum graveolens L.) Plants Growing in Moldova* Moldova State University, Chisinau, Moldova
IEL 17-P	Claudia Sandru *Bioaccumulation of Heavy Metals in Different Fish Species from Olt River, Romania* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 18-P	Radu Tamaian *Red & Blue – Computational Insights on Ecotoxicology and Potential Treats Against Aquatic Ecosystems* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
IEL 19-P	Irina Vagner *Adapting Direct CO_2 Absorption Method for Radiocarbon Measurement of the Environmental Samples* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania
Tritium R&D and Technological Transfer for Fusion and Fission (TFF)	
TFF 1-P	Diana Chiper *Obtaining of tritiated polystyrene thin layers through radio-induced grafting onto polyethylene terephthalate foils* National Institute for Physics and Nuclear Engineering "Horia Hulubei", Magurele, Romania
TFF 2-P	Diana Chiper *Radiological characterization of metal samples* National Institute for Physics and Nuclear Engineering "Horia Hulubei", Magurele, Romania
TFF 3-P	Cristina Elena Diaconescu *Assessment of the tritium and gamma ray emitters activities in liquid radioactive waste generated by TRIGA reactor* Institute for Nuclear Research, Pitesti, Romania
TFF 4-P	Valentina Neculae *Experimental Tests for the Implementation of a Method for Measuring Tritium on Metal Surfaces* Institute for Nuclear Research (RATEN ICN), Piteşti, Romania

TFF 5-P	Cristian Postolache *Radiological Characterisation and Decontamination of Various Surfaces from Former Radiochemistry Laboratories* National Institute for Physics and Nuclear Engineering "Horia Hulubei", Magurele, Romania
TFF 6-P	Cristian Postolache *Synthesis of Tritium Labelled Thymidine and Uridine* National Institute for Physics and Nuclear Engineering "Horia Hulubei", Magurele, Romania
TFF 7-P	Anisia Mihaela Bornea, Marius Valentin Zamfirache *Calculation Program for the Processing of Low-Concentrated Tritium and Deuterium Waste Through the CECE Isotopic Separation Process* National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Valcea, Romania