

New Cryogenic and Isotope Technologies for Energy and Environment - *EnergEn 2023*

Băile Govora, Romania

October 18-20, 2023

Scientific Committee

Marius Peculea - *Romanian Academy (Romania)*

Ashok Vaseashta - *International Clean Water Institute (USA)*

Norbert Wagner - *Deutsches Zentrum für Luft und Raumfahrt (Germany)*

Mohamed Pourkashanian - *Energy Institute, University of Sheffield (UK)*

Julia Amici - *Dipartimento Scienza Applicata a Tecnologia, Politecnico di Torino (Italy)*

Elena Carcadea - *ICSI Râmnicu Vâlcea (Romania)*

Tudor Prisecaru - *Polytechnic University, Bucharest, Romania*

Horia Necula - *Polytechnic University, Bucharest, Romania*

Silvano Tosti - *ENEA, Frascati, Italy*

Aishui Yu - *Department of Chemistry, Fudan University, Shanghai, China*

Luo Wenhua - *China Academy of Engineering Physics, China*

Chen Changan - *China Academy of Engineering Physics, China*

EnergEn 2023 PROGRAMME ... at a glance

Tuesday 17 th October		Wednesday 18 th October		Thursday 19 th October			Friday 20 th October		
				08:30	Registration				
		08:30	Registration	Parallel Scientific Sessions			09:00	Poster Session II	
					Battery Technologies Part I	Material Science for Energy and Environment Part I	Parallel Scientific Sessions		
		10:30	Conference Opening	09:30			10:00	Tritium R&D Technological Transfer for Fusion and Fission	Isotopes in Environmental Studies and Life Quality Applications
				11:00	Coffee Break		11:00	Coffee Break	
		11:05	Plenary Session		Battery Technologies Part I	Material Science for Energy and Environment Part I	11:30	Tritium R&D Technological Transfer for Fusion and Fission	Isotopes in Environmental Studies and Life Quality Applications
		13:00	Lunch	13:00	Lunch		13:00	Coffee Break	
					Parallel Scientific Sessions			13:15	Young researcher awards Closing the conference
				Parallel Sessions/Events					
		15:00	Hydrogen Energy Technologies	Meeting of CINCDR Part I			14:30	Battery Technologies Part II	Material Science for Energy and Environment Part II
		16:00	Coffee Break						
		16:15	Hydrogen Workshop	Meeting of CINCDR Part II			16:30	Coffee Break	
							16:45	Poster Session I	
		17:00	Registration	Meeting of the Romanian Association for Hydrogen Energy			18:30	Conference social event	
		19:00	Ice Breaker Buffet						
		20:00	End of the Day	19:00	Conference dinner		19:30	Dinner	
							20:30	End of the Day	
				21:00	End of the Day				

Organizing Committee

Tuesday - October 17, 2023

17:00 - 19:00	Registration <i>Location - Palace Hotel</i>
19:00 - 20:00	Ice Breaker Buffet <i>Location - Palace Hotel (Terrace)</i>

Wednesday - October 18, 2023

08:30 - 10:30	Registration <i>Location - Palace Hotel</i>
10:30 - 11:05	CONFERENCE OPENING <i>Location – Virginia Andreescu-Haret Cultural Center</i>
	<i>Mihai Varlam – EnergEn 2023 Chairman</i> National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania
	<i>Bogdan-Gruia Ivan - Minister</i> Ministry of Research, Innovation and Digitization, Romania
	<i>Mircia Gutău - Mayor</i> Ramnicu Valcea Town Hall, Romania
11:05 - 13:00	PLENARY SESSION <i>Location - Virginia Andreescu-Haret Cultural Center</i> Chairperson: <i>Roxana Elena Ionete</i>
11:05 - 11:45	The role of hydrogen in achieving net zero <i>Mohamed Pourkashanian</i> Energy Institute at the University of Sheffield, UK
11:45 - 12:25	Romanian Hydrogen HUB <i>Mihai Varlam, Elena Carcadea</i> National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania
12:25 - 13:00	ICSI contribution to the CTRF construction <i>Ion Cristescu</i> Karlsruhe Institute of Technology, Germany
13:00 - 15:00	Lunch
15:00 - 18:15	PARALEL SESSIONS
15:00 - 16:00	HYDROGEN ENERGY TECHNOLOGIES <i>Location – Virginia Andreescu-Haret Cultural Center</i> Chairperson: <i>Elena Carcadea</i>
	MEETING OF CINCDR (Council of the National Institutes of Research and Development in Romania) <i>Location - Conference Room Palace Hotel</i> Chairperson: <i>Mihaela Doni</i>
15:00 - 15:20	Dynamical mechanical analysis (DMA) characterisation of high-performance polymers and compounds used for low-pressure liquid H ₂ storage system for aviation <i>Daniela Ion-Ebrasu, Arthur Visse</i> National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania
	FIRST PART

15:20 - 15:40	Hydrogen storage potential of bulk and exfoliated WS2 <i>Ali Altuntepe, Recep Zan</i> Nanotechnology Application and Research Center, Niğde Ömer Halisdemir University, Turkey	
15:40 - 16:00	R&D in Hydrogen Based Technologies, Energy Storage and Conversion at ICPE-CA Bucharest <i>Gimi A. Rîmbu</i> National Institute of Research - Development for Electrical Engineering ICPE-CA, Bucharest, Romania	
16:00 -16:15	Coffee Break	
16:15 - 18:00	HYDROGEN WORKSHOP <i>Location – Virginia Andreescu-Haret Cultural Center</i> Chairperson: <i>Dragoş Ştefan Şeuleanu</i>	MEETING OF CINCDR (Council of the National Institutes of Research and Development in Romania) <i>Location - Conference Room Palace Hotel</i> Chairperson: <i>Mihaela Doni</i>
	Theme debate: Hydrogen technology – steps from research & development to industrial applications	SECOND PART
18:00 - 19:00	MEETING OF THE ROMANIAN ASSOCIATION FOR HYDROGEN ENERGY <i>Location – Virginia Andreescu-Haret Cultural Center</i> Chairperson: <i>Ioan Iordache</i>	
	General Assembly	
19:00 - 21:00	Conference Dinner <i>Location – Palace Hotel</i>	

Thursday - October 19, 2023

08:30 - 09:30	Registration <i>Location - Palace Hotel</i>	
09:30 - 16:15	PARALEL SCIENTIFIC SESSIONS	
09:30 - 13:00	BATTERY TECHNOLOGIES – Part I <i>Location – Virginia Andreescu-Haret Cultural Center</i> Chairpersons: <i>Norbert Wagner & Mihaela Buga</i>	MATERIAL SCIENCE FOR ENERGY AND ENVIRONMENT – Part I <i>Location - Conference Room Palace Hotel</i> Chairpersons: <i>Ashok Vaseashta & Adriana Marinoiu</i>
09:30 - 10:00	Keynote: Enhancing the safety of lithium metal anodes through polymer-based electrolyte systems <i>Julia Amici, Matteo Gandolfo, Mattia Longo, Daniele Versaci, Simone Siccardi, Carlotta Francia, Silvia Bodoardo</i> Department of Applied Science and Technology (DISAT), Politecnico di Torino, Italy	09:30 - 10:00 Keynote: Electrospun nanofibers of PLZT/PVDF for IoT sensors and energy harvesting applications <i>Ashok Vaseashta</i> International Clean Water Institute, New Jersey University, US
10:00 - 10:30	Keynote: Chemistry of interphases: influence of the surface fluorination on electrochemical properties of Li-ion positive electrode <i>Nicolas Louvain, Oumaima Hatim, Daniela Josepetti, Soha Aldroubi</i> Université de Montpellier, France	10:00 - 10:30 Keynote: Considerations regarding the development of deep learning regression algorithms used in material science, energy, and environment <i>Laurențiu Asimopolos, Violeta-Carolina Niculescu, Adrian-Aristide Asimopolos, Natalia-Silvia Asimopolos</i> Geological Institute, Romania
10:30 - 10:45	Solid molecular ionic composite electrolytes for solid state lithium-ion batteries <i>Soha Aldroubi, Nicolas Louvain</i> Université de Montpellier, France	10:30 - 10:45 Covalent functionalization of graphenes with azulenes – Innovative materials for PEM-fuel cell electrodes <i>Andreea Dogaru, Adrian Ion, Adriana Marinoiu, Mihaela Florea, Simona Nica</i> CD Nevițescu Institute of Organic and Supramolecular Chemistry, Romania
10:45 - 11:00	Solid polymer electrolyte for high-performance lithium batteries <i>Radu Dorin Andrei, Giorgian Cosmin Ungureanu, Ciprian-Ghiorghita Iacob, Luisa Roxana Mandoc, Irina Petreanu, Soha Aldroubi, Nicolas Louvain, Julian Richard Tolchard</i> National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania	10:45 - 11:00 A facile single-step synthesis of iodine-dopes graphene for PEM-fuel cell applications <i>Adriana Marinoiu, Elena Carcadea</i> National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania
11:00 - 11:30	Coffee Break	
11:30 - 12:00	Keynote: Bulk and surface optimization of Ni-rich ternary cathode materials for Li-ion batteries <i>Aishui Yu</i> FUDAN University, China	11:30 - 12:00 Keynote: Synergetic intersection of IoT, IoB, nanogenerators, and AI in energy and environment <i>Ashok Vaseashta, Roxana Elena Ionete</i> International Clean Water Institute, USA
12:00 - 12:30	Keynote: Revisiting Tin oxide anodes with a scalable nanoscale fabrication process <i>Julian Richard Tolchard, Charifa Hakim, Ole Andreas Øie, Soha Aldroubi, Radu Andrei</i> SINTEF, Norway	12:00 - 12:15 Nitrogen-doped graphene decorated with iron oxide nanoparticles as highly efficient electrocatalyst for oxygen reduction reaction in alkaline media <i>Adriana Vulcu, Teodora Radu, Alexandru Turza, Camelia Berghian-Grosan</i> National Institute for Research and Development of Isotopic and Molecular Technologies – ITIM Cluj Napoca, Romania

		12:15 - 12:30	Structures and functionality of materials under non ambient conditions <i>Martina Vrankić, Jasminka Popović, Takeshi Nakagawa, Yang Ding, Kejun Bu, Xujie Lü, Haozhe Liu</i> Ruđer Bošković Institute, Croatia
12:30 - 12:45	Pulsed laser deposited V2O3 thin-films on graphene/aluminum foil for micro-battery applications <i>Teddy Tite, Cosmin Ungureanu, Mihaela Buga, Ionel Stavarache, Elena Matei, Constantin Catalin Negri, Lucian Trupina, Andrei Galatanu, Adnana Spinu-Zaulet, Aurelian Catalin Galca</i> National Institute of Materials Physics, Romania	12:30 - 12:45	High temperature thermal energy storage composites based on metallic bismuth and porous oxide matrices <i>Raul Mitran, Daniel Lincu, Simona Ioniță, Mihaela Deaconu, Florica Papa, Bogdan Trică, Cristian Matei, Daniela Berger</i> Ilie Murgulescu Institute of Physical Chemistry, Romania
12:45 - 13:00	Operando/in situ synchrotron X-ray techniques for studying rechargeable magnesium battery <i>Zhao Li, Yi Li, Da Tie, Xiaodong Lin, Xiaolong Li, Jianxin Zou, Alexandru Vlad</i> Université Catholique de Louvain, Belgium	12:45 - 13:00	ICMET Craiova a National Institute with tradition in experimental research from Romania <i>Ioan Iordache</i> ICMET Craiova, Romania
13:00 - 14:30	Lunch		
14:30 - 16:15	PARALEL SCIENTIFIC SESSIONS		
	BATTERY TECHNOLOGIES – Part II <i>Location – Virginia Andreescu-Haret Cultural Center</i> Chairpersons: <i>Julia Amici & Teddy Tite</i>		MATERIAL SCIENCE FOR ENERGY AND ENVIRONMENT – Part II <i>Location - Conference Room Palace Hotel</i> Chairpersons: <i>Simona Nica & Marijana Jurić</i>
14:30 - 15:00	Keynote: Production and characterization of meta-sulfur and metal-air batteries <i>Norbert Wagner, Maryam Nojabae, Martina Gerle, Alexander Kube, Kaspar Andreas Friedrich</i> German Aerospace Center (DLR), Institute of Engineering Thermodynamics, Stuttgart, Germany	14:30 - 15:00	From ion hopping to polaron tunneling: quantum transport in superionic conductors <i>Athanasios Thiliakos</i> National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania
15:00 - 15:15	Innovative high voltage electrodes based on LMNO/LFP blended materials for lithium-ion batteries <i>Daniele Versaci, Giorgio Montinaro, Roberto Colombo, Mihaela Buga, Carlotta Francia, Silvia Bodoardo</i> Department of Applied Science and Technology (DISAT), Politecnico di Torino, Italy	15:00 - 15:15	Proton conductive heterometallic coordination polymers as precursors for mixed metal oxides <i>Marijana Jurić, Ana Lozančić, Lidija Molčanov, Sanja Renka, Sanja Burazer, Martina Vrankić, Lidija Androš Dubraja, Krešimir Molčanov</i> Ruđer Bošković Institute, Croatia
15:15 - 15:30	Revealing the reversible solid-state electrochemistry of lithium-containing conjugated oximates: towards a new functionality for organic batteries <i>Rambabu Darsi, Jiande Wang, Petru Apostol, Xiaolong Guo, Deepak Gupta, Alexandru Vlad</i> Université Catholique de Louvain, Belgium	15:15 - 15:30	Selective hydrogenation of nitrobenzene over MOFs supported NPs-catalysts <i>Oana Grad, Monica Dan, Maria Mihet, Angela Kasza, Gabriela Blanita, Mihaela D. Lazar</i> National Institute for Research and Development of Isotopic and Molecular Technologies – ITIM Cluj Napoca, Romania

15:30 - 15:45	<p>Towards scaling up in sustainable electrode production</p> <p><i>Elisa Raveiso, Valentina Sumini, Giorgio Montinaro, Daniele Versaci, Silvia Bodoardo</i> Department of Applied Science and Technology (DISAT), Politecnico di Torino, Italy</p>	15:30 - 15:45	<p>Modified Pechini method used for the synthesis of Cs-fullerenes aerogel</p> <p><i>Ana Maria Iordache, E.I. Ionete, S.-M. Iordache, C.N. Zoita, S. Caramizoiu, A.M. Raduta, I.C.Vasiliiu, I. Chilibon, C.E.A. Grigorescu</i> National Institute of Research and Development for Optoelectronic – INOE 2000, Romania</p>
15:45- 16:00	<p>Reintegration of Li-ion batteries in electronic devices – A sustainable option?</p> <p><i>Ioana Alina Ciobotaru, Danut-Ionel Vaireanu, Florin-Mihai Benga</i> University Politehnica of Bucharest, Faculty of Applied Chemistry and Materials Science, Romania</p>	15:45- 16:00	<p>Analysis of mechanical and thermal properties for bio composites with different volume proportions of Dammar matrix</p> <p><i>Maria Alexandra Ivan, Alexandru Bolcu, Ion Ciuca, Dumitru Bolcu, Marius Marinel Stanescu</i> National University of Science and Technology Politehnica Bucharest, Romania</p>
16:00 - 16:15	<p>Energy cube for versatile, reliable, and scalable hybrid electric energy storage systems</p> <p><i>George Ionuț Sava, Eleni Kaplani, Mihai Machedon-Pisu, Paul Nicolae Borza</i> Transilvania University of Brașov, Romania</p>	16:00 - 16:15	<p>MIEC solid oxides for SOFC manufacture. Structural and technical challenges.</p> <p><i>Nicoleta Cioatera, Mihaela Mureșeanu, Cezar-Ionuț Spînu</i> Craiova University, Romania</p>
		16:15 - 16:30	<p>Stirling engine and DC generator coupled. Design and analysis by control</p> <p><i>Nicolae Aldea, Florica Matei, Vasile Rednic</i> National Institute for Research and Development of Isotopic and Molecular Technologies – ITIM Cluj Napoca, Romania</p>
16:30 - 16:45	Coffee Break		
16:45 - 18:30	POSTER SESSION – I <i>Location – Virginia Andreescu-Haret Cultural Center</i>		
18:30 - 19:30	Conference Social Event <i>Location – Virginia Andreescu-Haret Cultural Center</i>		

Friday - October 20, 2023

09:00 - 10:00	POSTER SESSION - II <i>Location – Virginia Andreescu-Haret Cultural Center</i>		
10:00 - 13:00	PARALEL SCIENTIFIC SESSIONS		
10:00 - 13:00	TRITIUM R&D AND TECHNOLOGICAL TRANSFER FOR FUSION AND FISSION <i>Location – Virginia Andreescu-Haret Cultural Center</i> Chairpersons: <i>Liviu Ștefan & Sebastian Brad</i>	10:00 - 13:00	ISOTOPES IN ENVIRONMENTAL STUDIES AND LIFE QUALITY APPLICATIONS <i>Location - Conference Room Palace Hotel</i> Chairpersons: <i>Carmen Varlam & Oana Botoran</i>
10:00 - 10:15	Tritium transfer during different decommissioning techniques <u>Arno Vankrunkelsven, Dylst Kris, D'Joos Yves</u> SCK-CEN, Belgium	10:00 - 10:30	Biosensors array for the detection of virgin oils adulteration with seed oils <u>Constantin Apetrei, I. G. Munteanu, A. V. Bounegru, I. M. Apetrei</u> Dunărea de Jos University of Galați, Faculty of Sciences and Environment, Romania
10:15 - 10:30	Influence of various operation parameters of the wet scrubber column for detritiation system <u>Fei Jiang, Changan Chen, Peilong Li, Bin Yu, Min Chen, Li Deng, Jun Hu, Yan Shi, Jiangfeng Song</u> CAEP, China		
10:30 - 10:45	Aspects concerning the manufacture with increase productivity of Compact CP mixed catalytic packing for heavy water detritiation <u>Gheorghe Ionitǎ, Nicolae Sofilca, Gheorghe Titescu, Adrian Armeanu, Constantin Ciortea</u> National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania	10:30 - 10:45	Wine fingerprinting: A chemometric approach utilizing NMR and IRMS data <u>Marius Miricioiu, Oana Romina Botoran, Diana Costinel, Roxana Elena Ionete</u> National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania
10:45 - 11:00	Numerical simulation of hydrogen isotope separation by thermal cycling absorption process <u>Deng Li, Xiaoqiu Ye, Guoqiang Huang, Jiangfeng Song, Jun Hu, Changan Chen</u> CAEP, China	10:45 - 11:00	Using hydrogen and carbon radioisotopes as complementary analysis in wine authentication <u>Irina Vagner, Varlam Carmen, Făurescu Ionuț, Costinel Diana, Bogdan Diana, Miricioiu Marius, Făurescu Denisa</u> National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania
11:00 - 11:30	Coffee Break		
11:00 - 11:15	Modelling the co-permeation of hydrogen isotopes through metals in all rate-limited regimes <u>Jipeng Zhu, Xiaoqiu Ye, Chang'an Chen, Sun Fei, Xuxu Liu, Wei Jin</u> CAEP, China	11:00 - 11:15	Cytogenotoxic activity of <i>Anemone Nemorosa</i> L. extracts and their nanostructured mixtures <u>Anca Șuțan, Mihai Cortizo Pandeleanu, Codruța Mihaela Dobrescu, Oana Drăghiceanu, Cristina Soare, Denis Negrea, Diana Ionela (Stegarus) Popescu</u> National University of Science and Technology Politehnica Bucharest, Pitești University Center, Romania

11:15 - 11:30	<p>Performance comparison of the MHE heat exchanger prototype through practical experimentation, computational simulation and preliminary theoretical considerations</p> <p><i>Claudia Dumitrescu, Sebastian Brad, Horia Necula, Mihai Vijulie, Alin Lazar, Catalin Brill, Oleksandr Sirosh, Aleksander Grafov, Andrii Rozhentsev</i></p> <p>National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania</p>	11:15 - 11:30	<p>Innovative method for exploring the aromatic profile of wines using GC-MS without ISTD after LLME</p> <p><i>Yevgheniia Korolova, Diana Ionela Popescu, Oana Romina Botoran</i></p> <p>National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania</p>
11:30 - 11:45	<p>Large-current density and high-durability proton exchange membrane water electrolysis for hydrogen isotope separation</p> <p><i>Ning Zeng, Cun Hu, Chao Lv, Aojie Liu, Jinguang Cai, Tao Tang</i></p> <p>CAEP, China</p>	11:30 - 11:45	<p>Deuterium protium exchange protects mRNA from thermal & enzymatic hydrolysis and improves translational efficiency of mRNA molecules</p> <p><i>Pavel Gris, Alfred James Farmilo, Cassidy Tomlinson, Marjo Piltonen, Amanda Matthews, Diego Sobera, Anastasia Mickiewicz, Jewel Mickiewicz, Ashwini Rajasekaran, Denis Gris</i></p> <p>Isowater, Canada</p>
11:45 - 12:00	<p>Exploratory studies on the separation of Helium isotopes using gas chromatography</p> <p><i>Gheorghe Bulubaşa, Alina Niculescu</i></p> <p>National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania</p>	11:45 - 12:00	<p>Nitrogen and carbon stable isotope analysis from human hair as an origin assignment – a Romanian case study</p> <p><i>Teodora Mathiu, Diana Costinel, Roxana Elena Ionete, Marius Gheorghe Miricioiu And Oana Romina Botoran</i></p> <p>National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania</p>
12:00 - 12:15	<p>Thermodynamics and kinetics hydrogen isotope effects of hydrogen/deuterium absorption in the separation materials: Pd-5wt.%Pt alloy and Pd-Al₂O₃ pellets</p> <p><i>Xiaoqi Ye, Na Lin, Jiliang Wu, Yanxia Yan, Li Deng, Changan Chen</i></p> <p>CAEP, China</p>	12:00 - 12:15	<p>Hydroelectric power plant Brežice and environment changes observation through tritium and radiocarbon measurements</p> <p><i>Romana Krištof, Polona Gerjol, Jasmina Kožar Logar, Benjamin Zorko</i></p> <p>University of Ljubljana, Slovenia</p>
12:15 - 12:30	<p>Technique of reactor experiments of Tin-Lithium alloy interaction with hydrogen isotopes under neutron irradiation conditions</p> <p><i>Kuanysh Samarkhanov, Yuriy Ponkratov, Yuriy Gordienko, Yevgeniy Tulubayev, Radmila Sabitova, Yekaterina Martynenko, Vadim Bochkov, Eldana Saparbek</i></p> <p>Institute of Atomic Energy Branch of the National Nuclear Center, Republic of Kazakhstan</p>	12:15 - 12:30	<p>Dehalogenation of Delta-hexachlorocyclohexane by iron sulfide nanoparticles</p> <p><i>Silviu Badea, Violeta-Carolina Niculescu, Nicolae-Ionut Cristea, Stanica Enache, Amalia Soare, Athanasios Tiliakos, Oana-Romina Botoran, Roxana-Elena Ionete</i></p> <p>National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania</p>
12:30 - 12:45	<p>New achievements of the ICSI Cryogenic Laboratory</p> <p><i>Sebastian Brad, Catalin Brill, Claudia Dumitrescu, Aleksandr Grafov, Alin Lazar, Andrii Rozhentsev, Oleksandr Sirosh, Mihai Vijulie, George Bulubaşa, Anișoara Oubraham, Alina Niculescu</i></p> <p>National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania</p>	12:30 - 12:45	<p>Agro-waste – A circular economy approach to produce alternatives fuels</p> <p><i>Marius Constantinescu, Felicia Bucura, Anca Zaharioiu, Florian Marin, Gili Saroş, Claudia Şandru, Ionuţ Spiridon, Eusebiu Ionete, Violeta Niculescu</i></p> <p>National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania</p>

		12:45 - 13:00	<p>Valorization of apple pomace for a healthy food system and a sustainable environment</p> <p><i>Elisabeta Irina Geană, Corina Teodora Ciucure, Violeta Carolina Niculescu, Ana Nasture, Roxana Elena Ionete</i></p> <p>National Research and Development Institute for Cryogenics and Isotopic Technologies – ICSI Rm. Vâlcea, Romania</p>
13:00 - 13:15	Coffee Break		
13:15 - 13:30	<p>Closing the Conference</p> <p>Awarding prizes for young researchers</p>		

POSTER PRESENTATION

Thursday - October 19, 2023

16:45 - 18:30 POSTER SESSION – I	
Location – Virginia Andreescu-Haret Cultural Center	
TP-1	<u>Radu Tamaian</u> <i>Exploring Biohydrogen Generation from Agri-Food and Tree Waste: A Holistic Approach</i>
TP-2	<u>George Calianu, Ana Nasture, Mihai Eugen Restreanu, Cristian Hoarcă, Bogdan Florian Monea, Ștefan Ionut Spiridon, Eusebiu Ilarian Ionete</u> <i>Mixing and Separating Hydrogen in/from Methane Gas: Artificial Intelligence Approach</i>
TP-3	<u>Alexandru Ciocan</u> <i>Exploring the Potential of Burning Hydrogen in a Mixture of Natural Gas for Domestic Appliances</i>
TP-4	<u>Ioan-Sorin Șorlei, Nicu Bizon, Adriana Marinoiu, Elena Carcadea</u> <i>Fuel Cell Electric Vehicle Architecture Modelling and Analysis of Energy Management Strategies</i>
TP-5	<u>Mihai Florin Gheorghe</u> <i>Hydrogen Production from Nuclear Energy</i>
TP-6	<u>Florin Lungu, Laurentiu Patularu, Ana-Maria Nasture, Elena Carcadea</u> <i>Waste Heat Recovery for a 2Nm³/h PEM Electrolyzer System – Case Study</i>
TP-7	<u>Laurentiu Patularu, Ana-Maria Nasture, Florin Lungu, Elena Carcadea</u> <i>Technical Aspects Regarding the Development of a 2Nm³/h Regenerative PSA Dryer for PEM Electrolyzer System</i>
TP-8	<u>Andrii Kachmar, Rambabu Darsi, Robert Markowski, Alexandru Vlad</u> <i>The Hybrid Boron Hydrofluoride-Based Electrolyte</i>
TP-9	<u>Yan Zhang, Jiande Wang, Petru Apostol, Darsi Rambabu, Alae Eddine Lakraychi, Xiaolong Guo, Xiaozhe Zhang, Xiaodong Lin, Shubhadeep Pal, Vasudeva Rao Bakuru, Xiaohua Chen, Alexandru Vlad</u> <i>Bimetallic Anionic Organic Frameworks with Solid-State Cation Conduction for Charge Storage Applications</i>
TP-10	<u>Radu Dorin Andrei, Giorgian Cosmin Ungureanu, Ciprian-Ghiorghita Iacob, Thomas Cacciaguerra, Jeremy Rodriguez</u> <i>SBA-15-Based Anodes and Polymer Electrolytes for Solid-State Batteries</i>
TP-11	<u>Cosmin Ungureanu, Narvin Neehall, Alexandru Rizoii, Alin Chitu, Adnana Spinu Zaulet, Noelia Cortés Félix, Sébastien Fantini, Alexandru Vlad, Simon Clark, Mihaela Buga</u> <i>Cycling Stability of High-Voltage Spinel Cathode LiNi_{0.5}Mn_{1.5}O₄ in Lithium-Ion Pouch Cells Employing Carbonate-Based Electrolytes</i>
TP-12	<u>Adnana Spinu-Zaulet, Cosmin Ungureanu, Mihaela Buga, Alin Chitu, Danut Ionel Vaireanu</u> <i>The Influence of Si-Containing Electrolyte Additive on the Cyclic Stability of NMC811/Graphite Lithium Ion Battery</i>
TP-13	<u>Adnana Spinu-Zaulet, Mihaela Buga, Cosmin Ungureanu, Alexandru Rizoii, Alin Chitu</u> <i>Electrochemical Performance of LiFePO₄ Cathode in Li-Ion Pouch Cells</i>
TP-14	<u>Luisa Roxana Mandoc, Violeta Niculescu, Amalia Soare, Raul Mitran, Athanosios Tiliakos, Stanica Enache, Marius Constantinescu, Giorgian Cosmin Ungureanu, Mihaela Ramona Buga</u> <i>Synthesis and Characterization of New Active Materials Based on Sulf with Applications for Li-S Batteries</i>
TP-15	<u>Luisa Roxana Mandoc, Violeta Niculescu, Amalia Soare, Athanosios Tiliakos, Giorgian Cosmin Ungureanu, Mihaela Ramona Buga, Radu Dorin Andrei</u> <i>Solid State Batteries Performances Influenced by Various Life PO₄ Compositions</i>
TP-16	<u>Florina Vasiloiu, Adrian Sabie, Bogdan-Mihail Blanaru</u> <i>Modern Methods for the Rapid Prediction of Electric Battery Capacities</i>
TP-17	<u>Alexandru Rizoii, Mihaela Buga, Alexandru Vlad, Adnana Spinu-Zăuleț, Danuț - Ionel Văireanu</u> <i>Preliminary Studies on Sodium-Based Battery Technology</i>
TP-18	<u>Narvin Neehall, Adnana Spinu Zaulet, Cosmin Ungureanu, Alexandru Rizoii, Mihaela Buga</u> <i>Analysis of the Evolved Gases in a Multi-Layer Lithium-Ion Pouch Cell After Extensive Cycling Via Mass Spectrometry</i>

TP-19	<u>S.-M. Iordache</u> , A.-M. Iordache, A.M.I. Trefilov, A.M. Raduta, S. Caramizoiu, I. C. Vasiliu, I. Chilibon, C. E. A. Grigorescu <i>Electrochemical Sensor Based on Graphene-Aniline Composite for the Detection of Serotonin In Artificial Plasma</i>
TP-20	<u>A.M. Raduta</u> , S. Iftimie, V. A. Antohe, C. Locovei, A. Radu, L. Ion, S. Antohe, C.E.A. Grigorescu <i>Effect of Working Power on Physical Properties of Rf-Sputtered CdTe Thin Films for Photovoltaic Applications</i>
TP-21	<u>Emiliana-Ioana Trifan</u> , Florin Vacariu, Adrian Sabie, Bogdan Blănaru <i>The Reduction of Greenhouse Gas Emission Through the Use of Mixed Electricity Supply Systems</i>
TP-22	<u>Daniela Ion-Ebrasu</u> , Radu Dorin Andrei, Constantin Catalin Negri, Adriana Marinoiu, Elena Carcadea <i>Oxygen Reduction Reaction Characterization of Platinum-Functionalized CVD Growth 3D-Graphene Foam</i>
TP-23	<u>Iulian Pavel Nita</u> , Rodica Pancef, Iliescu Maria <i>Design and Layout of Air-Cooled Condensers (ACC) Required as Heat Sink for the Alfred Lead Fast Reactor (LFR) Demonstrator Reactor</i>
TP-24	<u>Denisa Cuibus</u> , S. Rada, S. Macavei, H. Vermesan <i>Recycled Lead Materials and Doped with Different Ions: XRD and Spectroscopic Investigations</i>
TP-25	<u>Oana-Georgiana Dragos-Pinzaru</u> , Luiza Racila, George Stoian, Gabriel Ababei, Firuta Borza, Ibro Tabakovic, Nicoleta Lupu <i>Electrodeposited CoPt Catalysts for Methanol Oxidation Reaction</i>
TP-26	<u>Simona Borta</u> , Elena Marin, Ioan Sorin Sorlei, Catalin Capris, Adriana Marinoiu <i>The Obtaining of Carbon Nanofibers Decorated with Pd by Electrospinning for Gas Diffusion Layers Applications</i>
TP-27	<u>Da Tie</u> , Mengyuan Du, Qi Zhu, Jiande Wang, Xuelian Liu, Neil Ebejer, Darsi Rambabu, Xiaolong Guo, Alexandru Vlad <i>Mixed Anionic and Cationic Redox Chemistry in Thiomolybdate Coordination Framework</i>
TP-28	<u>Mihaela Mureseanu</u> , Valentina Chivu, Mariana Osiac, Viorica Parvulescu, Cristina Bucur, Nicoleta Cioatera <i>Ce-Modified Mesoporous TiO₂ Thin Films As Efficient Photoanodes For Photocatalytic Fuel Cell Systems</i>
TP-29	<u>E. David</u> , A. Armeanu <i>Application of Biochar Derived from Agro-Industrial Residues for Biofuel Production</i>
TP-30	<u>Marin Elena</u> , Sucea Bianca, Marinoiu Adriana <i>Membrane Electrode Assembly (MEA) Fabrication for PEMFC</i>
TP-31	<u>E. David</u> , A. Armeanu, R-M. Marinescu <i>Increasing Bio-Oil and Biochar Yields in the Pyrolysis Process of Biomass by Using Catalysts with High Content of Catalytically Active Metal Species</i>
TP-32	<u>Adriana Marinoiu</u> , Sebastian Băltoiu, Mihaela Iordache, Sorin Șorlei, Marius Miricioiu, Elena Carcadea <i>The development of an efficient hydrogen generation system from sodium borohydride</i>
TP-33	<u>Anisoara Oubraham</u> , Elena Marin, Mihaela Iordache, Șorlei Ioan Sorin, Claudia Șisu, Claudia Sandru, Simona Borta, Athanasios Tiliakos, Adriana Marinoiu <i>Catalytic Hydrogenation of Carbon Dioxide (CO₂) to Methanol Using Copper-Based Catalyst</i>
TP-34	<u>Anisoara Oubraham</u> , Mihaela Iordache, Elena Marin, Șorlei Ioan Sorin, Claudia Șisu, Simona Borta, Athanasios Tiliakos, Claudia Sandru, Adriana Marinoiu <i>Synthesis of the Cu/ZnO/Al₂O₃ Catalysts and Application for Carbon Dioxide Hydrogenation to Methanol</i>
TP-35	<u>Viktoriya Podhurska</u> , Orest Ostash, Mykola Kuz'menko, Tetiana Prikhna, Volodymyr Sverdun, Anastasia Kyrsha <i>Investigation of Candidate Materials for Lightweight Interconnects of Solid Oxide Fuel Cells</i>
TP-36	<u>Viktoriya Podhurska</u> , Orest Ostash, Mykola Kuz'menko, Tetiana Prikhna, Volodymyr Sverdun, Anastasia Kyrsha <i>Investigation of Candidate Materials for Lightweight Interconnects of Solid Oxide Fuel Cells</i>

Friday - October 20, 2023

09:00 - 10:00	POSTER SESSION – II Location – <i>Virginia Andreescu-Haret Cultural Center</i>
FP-1	Mihaela Iordache, Anișoara Oubraham, Irina Petreanu, Claudia Șișu, Simona Borta, Șorlei Ioan Sorin, Athanasios Tiliakos, Adriana Marinoiu <i>Improved Ionic Conductivity of $Na_{1+x}Zr_2Si_2P_{3-x}O_{12}$ (Nasicon) by Addition of Sodium Excess</i>
FP-2	Claudia Șișu, Mihaela Iordache, Anișoara Oubraham, Simona Borta, Adriana Marinoiu <i>Characterization of Porous Ceramic Materials Using Dynamic Light Scattering (DLS) Technique</i>
FP-3	Geani Teodor Man, Aurelia Cristina Nechifor, Alexandra Raluca Grosu, Diana Ionela Popescu (Stegarus), Vlad-Alexandru Grosu, Gheorghe Nechifor <i>Thorium Removing from Electric and Electronic Waste</i>
FP-4	Violeta-Carolina Niculescu, Amalia Soare, Irina Petreanu <i>Rice Husk – Agriculture Waste as Raw Material for SBA-15 Mesoporous Silica</i>
FP-5	Irina Petreanu, Mihaela Iordache, Violeta Niculescu, Catalin Capris, Adriana Marinoiu <i>Characterization and Testing of the Commercial Perfluorinated Membranes FUMAPEM F-930 and FUMASEP F-1050</i>
FP-6	Cristina Marcu, Codruța Varodi, Ancuța Balla, Jozsef Zsolt Szűcs Balázs <i>Adsorption Isotherms and Thermodynamics of Nitrites Adsorption onto a Strong Basic Anion Exchange Resin</i>
FP-7	Athanasios Tiliakos, Robert Rabuga <i>Design Principles of 3D Printed Modular Supercapacitors Based on the Fractal “Space-Filling Supercapacitor Carpet” Architecture</i>
FP-8	Adriana Marinoiu, Elena Carcadea <i>Single-Stage Syntesys of Catalyst Based on Graphene Oxide Decorated with Platinum-Cobalt-Ceria</i>
FP-9	Cristian Salceanu, Daniel Truta, Catalin Dobrea, Hermina Deliu <i>High Power Laboratory of ICMET Craiova - Professionalism and Performance in the Field of Electrical Equipment Researching and Testing</i>
FP-10	Ioan Fieraru, Ilie Mihalcea, Laurentiu Vladoi <i>The Low and High Voltage Laboratory of ICMET Craiova Leader with Tradition in the Field of Equipment Testing for Energy and Environment</i>
FP-11	Maria Cristina Nițu, Ancuța- Mihaela Aciu <i>The Process of Revitalizing Aged Oils from Electrical Equipment in Operation</i>
FP-12	Iurie Bosneaga, Mircea Bologa, Elena Agarwal <i>Optimized Thermoaccumulation as a Condition sine qua non for Ensuring Sustainable Development</i>
FP-13	Radu Tamaian <i>Bioisosterism-Driven Optimization: Harnessing Deuterium's Potential in Drug Development</i>
FP-14	Diana Costinel, Oana Romina Botoran, Roxana Elena Ionete, Marius Gheorghe Miricioiu, Teodora Maria Mathiu <i>Tracing Botanical and Geographical Origins: Carbon and Nitrogen Stable Isotopes ($\delta^{13}C$ and $\delta^{15}N$) in Conifer Trees of the Southern Carpathians</i>
FP-15	Diana Ionela Popescu (Stegăruș), Oana Romina Botoran, Roxana Elena Ionete, Nicoleta Anca Șuțan, Corina Mihaela Oprita (Cioară), Violeta-Carolina Niculescu <i>Evaluation of the Contamination Degree with Pesticides in Vegetables - Chromatographic Techniques</i>
FP-16	Carmen Varlam, Denisa Făurescu, Ionuț Făurescu, Diana Bogdan, Irina Vagner <i>Environmental Tritium and ITS Measurement Challenges Using LSC</i>
FP-17	Ionuț Făurescu, Carmen Varlam, Diana Bogdan, Denisa Făurescu, Irina Vagner, Diana Costinel <i>Thermoelectrical Power Plant Influence on Environmental Radiocarbon Level in Govora Industrial Area</i>
FP-18	Nadia Paun, Violeta-Carolina Niculescu, Ionela Ramona Zgavarogea, Silviu Laurentiu Badea, Andreea-Maria Iordache <i>An Overview on Membrane-Based Methods for Lithium Isotopes Separation</i>
FP-19	J.-Zs. Szűcs-Balázs, A. Balla, Ș. Bugeac, C. Lar, C. Marcu, S. Radu, C. Varodi, M. Gligan <i>Theoretical Design of a Combined Separation Cascade for Nitrogen Isotope Separation</i>

FP-20	<u>Pavel Gris</u> , Alfred James Farmilo, Cassidy Tomlinson, Marjo Piltonen, Amanda Matthews, Diego Sobera, Anastasia Mickiewicz, Jewel Mickiewicz, Ashwini Rajasekaran, Denis Gris <i>Effect of Deuterium Protium Exchange on mRNA Translational Efficiency</i>
FP-21	<u>Claudia Șandru</u> , Oana Romina Botoran, Roxana Elena Ionete, Marius Miricioiu <i>Macronutrient Pathways: Tracing Soil-To-Wine Transition in Drăgășani and Sâmburești Vineyards, Romania</i>
FP-22	C. Apetrej, Mirela Voiculescu, Catalina Iticescu, Lucian P. Georgescu <i>REXDAN RI - An Original Multidisciplinary Research Infrastructure</i>
FP-23	<u>Valentina Neculae</u> , Cristian Dulama, Rodica Magareanu, Cristina Diaconescu <i>Experimental Tests for the Optimization of the Tritium Determination Method in Air Using Passive Collectors</i>
FP-24	<u>Ciucure Corina Teodora</u> , Geana Elisabeta-Irina, Ionete Roxana Elena <i>Contaminant Residues from Plant Biomass to be Used for Extraction of Bioactive Compounds</i>
FP-25	<u>Claudia Stihj</u> , Antoaneta Ene, Ion V. Popescu, Oana Catalina Bute, Cristiana Radulescu, Anca Gheboianu, Ioana Daniela Dulama <i>Moss Surveys in Romania: 2010/2011, 2015/2016, 2020/2022. Heavy Metals Atmospheric Deposition Temporal Trends</i>
FP-26	<u>Valeria-Rodica Magareanu</u> , <u>Valentina Neculae</u> , Cristian-Nicolae Dulama <i>Performance Evaluation of Internal Tritium Dosimetry</i>
FP-27	<u>Paul-Adrian Gogîță</u> <i>Atmospheric Dispersion Calculations for Tritium in the Environment Using Gaussian Plume Models</i>
FP-28	<u>Oana Romina Botoran</u> , Elisabeta-Irina Geană, Roxana Elena Ionete <i>Improving Soil Conservation and Resilience by Boosting Biodiversity and Functional Security of Organic Food Products</i>
FP-29	<u>Irina Elisabeta Geana</u> , Ciucure Corina Teodora, Miricioiu Marius, Roxana Elena Ionete <i>Discrimination of Varietal and Geographical Origin of Wines by Polyphenolic Composition Coupled with Chemometrics</i>
FP-30	Aleksander Grafov, <u>Andrii Rozhentsev</u> , Sebastian Brad, Oleksandr Sirosh, Mihai Vijulie, Alin Lazar, Claudia Dumitrescu, Catalin Brill <i>Estimation of the Possibility of Using the Freezing Method to Separate Hydrogen Isotope Mixtures</i>
FP-31	<u>Marius Valentin Zamfirache</u> , Anisia Mihaela Bornea, George Ana, Ciprian Bucur, Iuliana Ștefan, Felicia Văsuț <i>The Performance of the Structured Packing for the Deuterated Water Distillation Process at Above Atmospheric Pressure</i>
FP-32	<u>Anisia Mihaela Bornea</u> , <u>Marius Valentin Zamfirache</u> <i>Development of a CECE Cascade for the Separation of Hydrogen Isotopes</i>
FP-33	<u>Hortensia Beznilă</u> , Raluca Fako, Sorin Meglea, Cristian Postolache <i>RATEN Involvement in Multidisciplinary European Projects for Tritium Research in the Fusion/Fission Domain</i>
FP-34	<u>Radu Ana</u> , George Ana, Ovidiu Bălțeanu, Alina Niculescu, George Bulubașa <i>Development of the tentative 3-D layout for the TER HCPB concept based on tritium adsorption on getter bed technology</i>
FP-35	<u>Maria Crăciun</u> , Alina Niculescu, Gheorghe Bulubașa, George Ana <i>Literature review on barriers against hydrogen isotopes permeation through stainless steel and EUROFER97 for use in DEMO systems</i>
FP-36	<u>Alina Niculescu</u> , Gheorghe Bulubașa, George Ana <i>Development of a Thermal Cycling Process for the Recovery of Tritium Used in the Research Programs from ICSI</i>
FP-37	<u>Gheorghe Popescu</u> , George Ana, Liviu Ștefan, Ciprian Bucur <i>Investigating the Explosion Risk in a Hydrogen Distillation Cold Box</i>