

**Joint Exploratory Workshop of the EIT RawMaterials and
Fuel Cells & Hydrogen Joint Undertaking - FCH2JU on:**

***"Critical Raw Materials in Fuel Cells and
Hydrogen Value Chains"***

February 16th-17th, 2017

Bucharest, Romania

Library Conference Hall, Măgurele Science Platform

First Day

February 16th

11:30 Registration of the participants

12:00 Buffet Lunch

13:00 Opening session

- **Dr. Viorel VULTURESCU**, Romanian Ministry for Scientific Research
- **Dr. Karen HANGHØJ**, CEO, Managing Director, EIT Raw Materials
- **Bart BIEBUYCK**, Executive Director, Fuel Cells & Hydrogen Joint Undertaking
- **Alessandra HOOL**, ESM Foundation, Switzerland
- **Prof. Eden MAMUT**, Chair of Scientific Committee of FCH2JU
- **Dr. Ionut ENCULESCU**, General Director, National Institute of Materials Physics
- **Dr. Stefan MARINCEA**, General Manger, Romanian Geologic Institute
- **Dr. Dan Gabriel GHITA** Technical Director, "Horia Hulubei" National Institute for Physics & Nuclear Engineering
- **Dr. Ioan IORDACHE**, Chairman, Romanian Association for Hydrogen Energy



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14:00 Session on: "Critical Materials in Fuel Cells & Hydrogen Energy Technologies and Substitution Perspectives"

Keynote Speakers:

Dr. Etienne BOUYER, French Alternative Energies and Atomic Energy Commission CEA: *Substitution of CRM in the Energy Field: Issues & Challenges*

Prof. Dr. K. Andreas FRIEDRICH, German Space Agency DLR-IET: *Achieving Cost Reduction and Sustainability in PEM Fuel Cells and Electrolysis by Material Development*

Prof. Eden MAMUT, "Ovidius" University of Constanta, *Criticality Analysis of Fuel Cell Value Chains and Low-PGM or Non-PGM Pathways*

15:00 Visit of Măgurele Platform Research Facilities

16:00 Session on: "Strategic Objectives, Working Plans and Examples of Projects on Substitution of CRM at EIT Raw Materials"

Keynote Speakers:

Dr. Karen HANGHØJ, CEO, Managing Director, EIT Raw Materials, *Strategic Research Agenda, Portfolio of Projects and Current Priorities at EIT RawMaterials*

Dr. Roland GAUß, Thematic Officer Substitution and Recycling, EIT RawMaterials GmbH, *Priorities on Substitution of CRMs and Examples of Projects*

Dr. Wouter DE SOETE, Sustainability Support and Information Centre, University of Gent: *Sustainability Assessment*

Dr. Vladimiro DAL SANTO, ISTM-CNR, Coordinator of the Network of Infrastructures "Critical Metal Free Catalysts"

17:30 Concluding remarks



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19.30 Dinner at the "Carul cu Bere" Restaurant located in the area of "Old City" Downtown Bucharest

Second Day

February 17th

09:30 Session on: "Strategic Objectives, Working Plans and Examples of Projects on Substitution of CRM in Fuel Cells and Hydrogen Energy Technologies"

Keynote speakers:

Bart BIEBUYCK, Executive Director, FCH2JU, *Portfolio of Projects, Achievements and Current Priorities at FCH2JU.*

Dr. Elena Carcadea, ICSI Rm. Valcea, *Strategic Objectives in Fuel cells Development at National Centre for Hydrogen & Fuel Cells*

Dr. Adriana Marinoiu, ICSI Rm. Valcea, *Enhanced Electrochemical Performances Based on Metal-Free Catalysts for PEMFC*

11:00 Coffee break

11:30 Brainstorming session on: "Joint Initiatives and Pathways for Partnership Development between FCH2JU and EIT RawMaterials"

Moderators:

Alessandra HOOL, ESM Foundation, Switzerland

Prof. Eden MAMUT, Chair of Scientific Committee of FCH2JU

13:00 Concluding remarks

13:30 Buffet Lunch



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14.30 Visit of the ESFRI “Extreme Light Infrastructure - ELI” Platform

15:30 Closure

Concept of the event

The purpose of the event is to initiate a model of cooperation between two large RTDI groupings which are part of the main pillars of the Innovation Union Strategy of the EU, in order to generate synergies and multiplication factors for turning European creative approaches and ideas into products and services.

The event is organized in the context of the commitments of EU member states to support the implementation of the COP 21 Agreement, where hydrogen energy technologies could play a fundamental role in mitigating greenhouse gas (GHG) emissions. However, in the process of a broad implementation of fuel cells and hydrogen technologies in fast emerging sectors, it is important to consider the whole value chains of these technologies in order to assess their overall ecological impact, and to design strategies to improve these products and their value chains economically as well as ecologically.

The increasing use of fuel cells in cars, for example, is expected to lead to a quickly growing demand for Platinum Group Metals (PGMs) because fuel cells vehicles require a multiple of the PGM amounts needed for conventional cars. PGM production is not only itself related to some negative environmental impacts (e.g. through the use of fossil-fuel energy for mining and metallurgical plants), but also raises questions of long-term availability due to the limitation of reserves and Europe’s economical dependence on the countries of the materials’ origin. In order to avoid future barriers for development and dissemination of FCH technologies, their materials demand and the related issues should be considered early enough in order to develop strategies to react on the changing markets and the new challenges – as well as the opportunities – they are posing.

The participants are expected to take part in open debates by expressing their opinions, sharing their experience, and presenting proposals for further development of FCH technologies considering the sustainability of the future value chains.

The Fuel Cells and Hydrogen Joint Undertaking (FCH2JU) is a public private partnership supporting research, technological development and demonstration (RTD)

activities in fuel cell and hydrogen energy technologies in Europe. Its aim is to accelerate the market introduction of these technologies, realising their potential as an instrument in achieving a carbon-lean energy system.

Gathering over 60 companies of all sizes and more than 60 reputable research institutions and universities, it has fostered an impressive level of collaboration between the research and industry community. FCH2JU is mainly focusing on projects from TLR3 to TLR6.

The FCH2JU Call for project proposals 2017 has recently been published at: <http://www.fch.europa.eu/page/call-2017>

EIT RawMaterials, initiated by the EIT (European Institute of Innovation and Technology) and funded by the European Commission, is the largest and strongest consortium in the raw materials sector worldwide. Its vision is a European Union where raw materials are a major strength. Its mission is to boost competitiveness, growth and attractiveness of the European raw materials sector via radical innovation and guided entrepreneurship.

EIT RawMaterials unites more than 100 partners – academic and research institutions as well as businesses – from more than 20 EU countries. They collaborate on finding new, innovative solutions to secure the supplies and improve the raw materials sector all along its value chain – from extraction to processing, from recycling to reuse.

EIT RawMaterials has a broad approach of bridging the partnership between University research and industry with an emphasis on supporting the projects from TLR6 to TLR9.

The EIT RawMaterials Call for project proposals 2017 may be found at: <https://eitrawmaterials.eu/call-for-projects-2017/>