

## The great transition – the importance of critical metals for green energy technologies

Symposium on Thursday, July 13<sup>th</sup> 2017, 09.00 – 18.00, in the Orangerie in Darmstadt

### SCOPE:

The unsustainability of our fossil fuel based society and economy is at the beginning of the end. Today, the critical supply of primary and secondary resources directly impacts on the development and cost of advanced materials which form the basis for a number of latest green energy technologies. The efficient utilisation or substitution of strategic metals with more sustainable and earth abundant elements is the big challenge for the Great Transition. Well-known experts from academia and industry will give key-note lectures addressing the substitutionability of critical metals in the different classes of functional materials. The aim is to develop new materials and efficient energy technologies with a reduced supply risk and enhanced environmental sustainability.

The workshop is jointly organised by the **DGM Fachausschüsse Funktionswerkstoffe** and **Werkstoffe der Energietechnik** and the **Jung-DGM Darmstadt**. Co-organisers are the **Fraunhofer Project Group Materials Recycling and Resource Strategies IWKS**, the **Hessen LOEWE Excellence Cluster RESPONSE**, the **TU Darmstadt Profile Area Future Energy Systems** and the **KIC EIT Raw Materials**.

We invite you to participate in our symposium. Conference language is English.

### Program:

08.30 – 09.30	Registration and Coffee
09.30 – 09.40	<i>Opening</i> - Prof. Oliver Gutfleisch, TU Darmstadt and Fraunhofer IWKS
<b><i>Power-to-fuel, Energy Storage</i></b>	
09.40 – 10.10	Prof. Robert Schlögl, Fritz-Haber-Institute, Max-Planck-Society: <i>Chemical Energy Conversion</i>
10.10 – 10.40	Prof. Andreas Züttel, EPFL Lausanne, Laboratory of Materials for Renewable Energy (LMER): <i>Hydrogen, hydrides and synfuels from renewable energy</i>
10.40 – 11.00	Coffee
11.00 – 11.30	Prof. Peter Schaaf, TU Ilmenau: <i>Hybride nanocomposites for photocatalysis</i>
11.30 – 12.00	Prof. Maximilian Fichtner, Helmholtz-Institute Ulm, KIT: <i>Electrochemical Energy Storage beyond Li Technology</i>
12.00 – 12.30	Dr. Andreas Hintennach, Daimler AG: <i>Novel materials for high performance batteries</i>
12.30 – 13.30	Lunch

<b>Photovoltaics and Thermoelectrics</b>	
13.30 – 14.00	Prof. Kornelius Nielsch, Leibniz Institute IFW Dresden: <i>The Importance of 3D Topological Insulator for Thermoelectric Applications and why we need a Green Topological Insulator</i>
14.00 – 14.30	Prof. Gilles Dennler, IMRA Europe, Sophia Antipolis, France: <i>Accelerated discovery of new thermoelectric materials by high throughput ab-initio computations and experimental validation</i>
14.30 – 15.00	Prof. Wolfram Jaegermann, Material Science, TU Darmstadt: <i>New thin film multi-absorbers for photovoltaics und photoelectrosynthesis</i>
15.00 – 15.15	Coffee
<b>Magnetic Materials and Superconductors</b>	
15.15 – 15.45	Prof. Bernhard Holzapfel, KIT, Institute for Technical Physics: <i>Superconducting materials in energy applications</i>
15.45 – 16.15	Dr. Michael Krispin, Siemens AG, Corporate Technology: <i>RE magnets for Green Energy and eMobility</i>
16.15 – 16.45	Prof. Oliver Gutfleisch, Material Science, TU Darmstadt and Fraunhofer IWKS: <i>Material criticalities in magnetism for energy technologies</i>
16.45 – 17.00	<i>Closing</i> - Prof. Wolfram Jaegermann, Material Science, TU Darmstadt Dr. Roland Gauss, EIT Raw Materials GmbH, Thematic Officer Substitution
17.00 – 18.00	Beer & Brezels

**Symposium chair:**

Prof. Dr. Oliver Gutfleisch, TU Darmstadt und Fraunhofer IWKS

**Symposium co-chairs:**

Prof. Dr. Wolfram Jaegermann, TU Darmstadt and Prof. Dr. Peter Schaaf, TU Ilmenau

**Registration fees:**

- 80,- Euro
- 50,- Euro for DGM Members
- 10,- Euro for Jung DGM and for Students
- Free of charge for EIT RawMaterials members

The registration fee includes coffee breaks, lunch and beer & brezels at the end of the day.

**Registration and detailed information:**

[http://www.mawi.tu-darmstadt.de/fm/funktionale\\_materialien/index.en.jsp](http://www.mawi.tu-darmstadt.de/fm/funktionale_materialien/index.en.jsp)



**Orangerie** in Darmstadt  
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