

RawMaterials Academy

EIT RawMaterials strives to educate the raw materials game-changers of the future, ensuring Europe cultivates a society of learners contributing to a strong and resilient EU raw materials base. Four domains of learning and education are addressed by EIT RawMaterials, namely

- PhD Education
- Master Education
- Lifelong Learning
- Wider Society Learning

The RawMaterials Academy is the overarching brand and coordinating body of all the learning & education activities of the EIT RawMaterials.

Most EIT RawMaterials learning & education activities are carried out through innovative education projects launched via open Calls for Proposals with funded projects managed and implemented by the EIT RawMaterials partners. Additionally the RawMaterials Academy supports partner universities in the EIT-Labelling of Master and PhD programmes as well as administers a number of centrally operated, strategic projects.

Activities across the entire ecosystem of learners – PhD students, Master students, industrial partners, professionals within the raw materials sector, policymakers, school pupils, Bachelor students and civil society – foster new pedagogical approaches to learning and teaching through the application of the Knowledge Triangle, linking critical knowledge and stakeholders in academia, industry and research. Resulting from this model is a de-siloing of raw materials disciplines and knowledge whereby learners obtain a holistic overview of the raw materials value chain complemented by robust innovation & entrepreneurial education.

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. It unites over 100 partners – academic and research institutions as well as businesses – from more than 20 EU countries.

EIT RawMaterials – bridging **business**, **research** and **education**

Contact & Registration

EIT RawMaterials – Regional Center Freiberg

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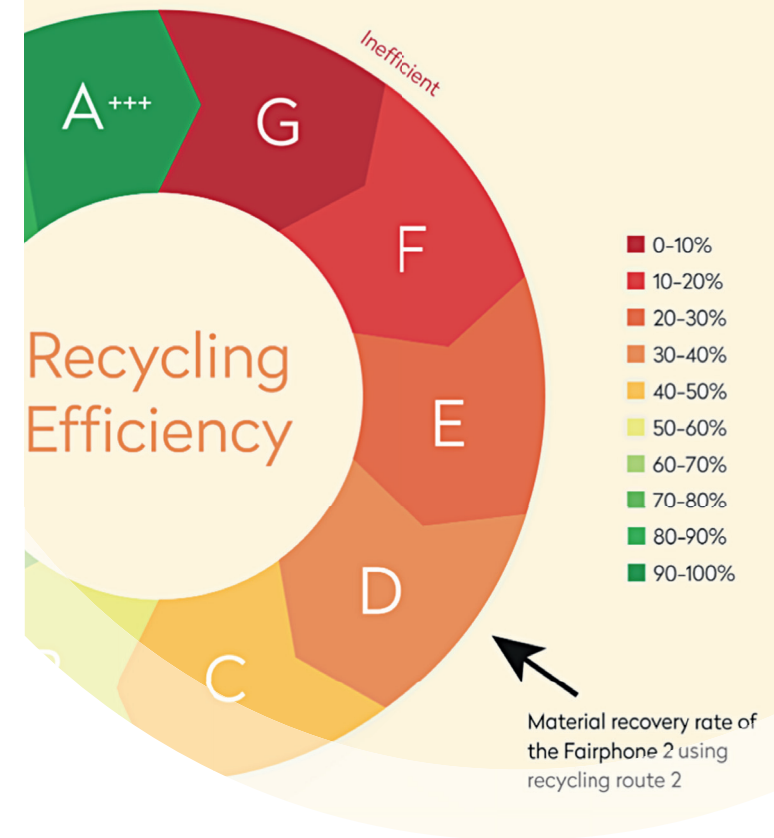
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<http://courses.eitrawmaterials.eu/EIT/>

The EIT RawMaterials Regional Center Freiberg is a cooperation office of TU Bergakademie Freiberg, Helmholtz Institute Freiberg for Resource Technology and EIT RawMaterials.



Helmholtz Institute Freiberg for Resource Technology



Simulation based footprint of technology

9–11 January 2018 – Freiberg, Germany
15–17 May 2018 – Freiberg, Germany
27–29 November 2018 – Berlin, Germany



This activity has received funding from the European Institute of Innovation and Technology (EIT), a body of the European Union, under the Horizon 2020, the EU Framework Programme for Research and Innovation

Simulation based footprint of technology taught by case studies and hands on simulation

Metallurgy is a key enabler of a circular economy (CE), its digitalization is the metallurgical Internet of Things (m-IoT). In short: Metallurgy is at the heart of a CE, as metals all have strong intrinsic recycling potentials. Process metallurgy, as a key enabler for a CE, will help much to deliver its goals. The first-principles models of process engineering help quantify the resource efficiency (RE) of the CE system, connecting all stakeholders via digitalization. This provides well-argued and first-principles environmental information to empower a tax paying consumer society, policy, legislators, and environmentalists. It provides the details of capital expenditure and operational expenditure estimates. Through this path, the opportunities and limits of a CE, recycling, and its technology can be estimated.

The true boundaries of sustainability can be determined in addition to the techno-economic evaluation of RE. The integration of metallurgical reactor technology and systems digitally, not only on one site but linking different sites globally via hardware, is the basis for describing CE systems as dynamic feedback control loops, i.e., the m-IoT. It is the linkage of the global carrier metallurgical processing system infrastructure that maximizes the recovery of all minor and technology elements in its associated refining metallurgical infrastructure. This course will illustrate some of these concepts with hands-on training.

Course dates

9–11 January 2018, Freiberg, Germany
15–17 May 2018, Freiberg, Germany
27–29 November 2018, Berlin, Germany

Course description

The course has the following objectives and outcomes:

- Simulation based footprinting of Technology
- Simulation of Recycling systems from product “Mineralogy” to metal
- Environmental analysis
- Exergy analysis

Format

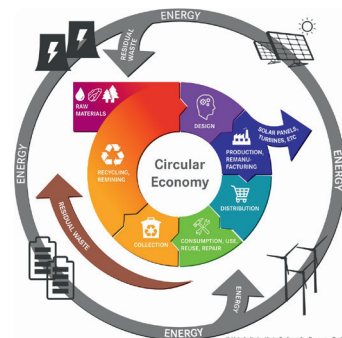
The course is combining both classroom lectures as well as case studies and practical simulation with HSC SIM (www.outotec.com) and GaBi (www.thinkstep.com)

Course contents

- Module 1: **Overview of concepts and introduction to cases to solved with the simulation tools**
Module 2: **Working out a case from EoL (End-of-Life) product to metal recovery**
Module 3: **Analysis of results and recommendation**

Lecturer:

- **Prof. Dr. Dr. h.c. Markus Reuter** – Director of Helmholtz-Institute Freiberg for Resource Technology and honorary professor at the TU Bergakademie Freiberg
www.researchgate.net/profile/Markus_Reuter3



Locations

TU Bergakademie Freiberg
Krügerhaus
Schlossplatz 3
09599 Freiberg
Germany

EIT RawMaterials GmbH
Location to be confirmed
Place to be confirmed
Berlin
Germany

Target audience

Systemic thinkers who want to understand Circular Economy Engineering in the context of process metallurgy, recycling and design for recycling will find this valuable. Therefore, metallurgical knowledge, process engineering as well as simulation interest would be valuable. Exposure to the economics of engineering systems will also help to develop the case studies in this course.

Course fee

€ 1500 per person, plus statutory VAT
EIT RawMaterials members: € 1100 per person, plus statutory VAT

