

**US-EU-Japan Working Group on Critical Materials
4th Annual Meeting**

Iowa State University

Hosted by
The Critical Materials Institute
The Ames Laboratory

September 8, 2014

AGENDA

8:30 Registration

9:00 Welcome
Alex King, Director, Critical Materials Institute

Opening Remarks

9:10 Akito Tani, Deputy Director-General, Manufacturing Industries Bureau, MET

9:20 Gwenole Cozigou, Director, DG Enterprise and Industry

9:30 Mark Johnson, Director, Advanced Manufacturing Office, DOE

Session 1: Anticipating Materials Criticality

Chair: Takashi Nakamura, Professor, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University

9:40 *Exploration and Discovery – the upstream part of the critical materials life cycle*
Larry Meinert, Program Coordinator - Mineral Resources Program, United States Geological Survey

10:00 *Current issues on Rare Earths Industry*
Chikara Okada, President, Santoku Corporation

10:20 *Life Cycle knowledge-base for materials criticality management and resource policy support*

Gian Andrea Blengini, Scientific Officer/Sr. Researcher, JRC ISPRA

10:40 Q&A and Summary

10:50 Coffee Break

Session 2: New Material Discovery and Deployment

Chair: Elbert Loois, Head Business Development, RA Rohstoffallianz

11:10 *Outline of R & D Project "Development of magnetic material technology for high-efficiency motors"*

Mamoru Nakamura, Director, Material Research Institute for Sustainable Development, National Institute of Advanced Industrial Science and Technology (AIST)

11:30 *Roadmaps on developing substitutes of CRMs*

David Peck, TU Delft

11:50 *Creating a Quantitative Framework for Cost Effective Materials Development*

Adam Schwartz, Director, The Ames Laboratory

12:10 Q&A and Summary

Lunch and Observer-Nation Presentations

Chair: Rod Eggert, Deputy Director, Critical Materials Institute – Colorado School of Mines

12:20 Buffet Lunch

12:30 *Canadian Rare Earth Elements - feeding the global supply chain*

Janice Zinck, Manager, Natural Resources Canada -Mine Waste Management and Processing Research Program

12:50 *The current activity of Korea for the rare metals future*

Min-Ha Lee, Principal Researcher, Rare Metals R&D Group, Korea Institute of Industrial Technology

Session 3: Computation and Theoretical Simulations

Chair: Eric Schwegler, Focus Area Lead, CMI – Lawrence Livermore National Laboratory

- 1:20 *R&D for Hydrometallurgical Critical Metal Recycling – specific effects linked to elements d & f*
Jean-François Dufrêche, Professor, Université de Montpellier, ICSM- CEA : Separative Chemistry
- 1:40 *Electronic theory of Nd-Fe-B permanent magnets*
Hiroki Tsuchiura, Associate Professor, Department of Applied Physics, Tohoku University
- 2:00 *Breaking ground on molecular engineering of extractants: How to save millions on design*
Theresa Windus, Professor, CMI-Iowa State University
- 2:20 Q&A and Summary

Session 4: Critical Materials Processing and Reprocessing

Chair: David Hardy, Senior Technology Advisory, DOE – Advance Manufacturing Office

- 2:30 *Separation of Adjacent Lathanides*
Scott Herbst, Deputy Focus Area Lead, CMI – Idaho National Laboratory
- 2:50 *Recycle of rare earth magnet with pyrochemical process*
Koji Mizuguchi, Group Manager, Rare Earth technology Group, Nuclear Chemical System and R&D Dept., Power & Industrial System Research & Development Center, Toshiba Corporation Power Systems Company
- 3:10 *A global perspective on Recycling from a key EU player*
Maurits Van Camp, Director Competency Platform, Recycling and Extraction, Umicore
- 3:30 Q&A and Summary

Closing

- 3:40 James Gavigan, Scientific Counsellor, EU Delegation – Washington
- 3:45 Tohru Nakamura, Director, Electronics, Materials Technology and Nanotechnology Dept, NEDO
- 3:50 Diana Bauer, Director, DOE - Office of Energy Systems Analysis and Integration
- 4:00 Reception and Poster Session
- 6:00 Transportation to Des Moines