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## Summer school Invitation

The Division of Resource Recovery would like to invite you to participate in four summer schools that will take place from the 17<sup>th</sup> – 20<sup>th</sup> of September 2024 at KTH in Stockholm, Sweden. These summer schools are part of the joint initiative between EIT Raw Materials and project partners within Dyscovery, EU Magnesium, Scaleup and Valore.

### Is this for you?

Are you in industry roles like engineer, scientist, technologist, or researcher? Or are you in academia as a postgraduate student or postdoctoral researcher? If the answer is yes to any of the above, then you are the ideal participant.

### Cost

Registration to this event is free. Click [here](#) to register. However, the travel, accommodation and subsistence costs will be borne by the participant.

### Contact

Should you have questions or need more information, email: [cledwyn@kth.se](mailto:cledwyn@kth.se)



## Programme: Day 1, 17<sup>th</sup> of September

### Dyscovery – EoL permanent NdFeB and SmCo magnet recycling

Time	Topic	Presenter
9:00 - 9:30	<i>Morning coffee</i>	
9:30 - 10:00	Primary raw materials for magnet manufacturing: challenges and risks	Beate Orberger, CATURA
10:00 - 10:30	NdFeB magnets and the rare earth market: manufacturer perspective	Matej Zaplotnik, Magneti
10:30 - 11:00	NdFeB magnets and the rare earth market: end user perspective	Fabio Scaffidi Muta, CRF
11:00 - 11:30	NdFeB magnets (structure, composition)	Pavel Korzhavy, KTH
11:30- 12:00	Magnet preparation for recycling	Daniel Vogt, TUBAF
12:00- 13:00	<i>Lunch Break</i>	
13:00- 13:45	The Dyscovery project overview: Challenges and accomplishments	Anastasia Moschovi, Monolithos
13:45- 14:15	The H <sub>2</sub> -free Dyscovery leaching process	Robin Scharfenberg, MEAB
14:15- 15:00	<i>Coffee Break</i>	
15:00- 15:30	Hydrometallurgical processing of REE	Kerstin Forsberg, KTH
15:30- 16:00	Electrowinning in the Dyscovery project	Daniel Vogt, TUBAF
16:00- 16:30	Life-cycle assessment and MFA	Dimitria Skentzou SE&C
16:30- 17:15	Participation of students: 20 min workshops upon questions for students in small groups and 3 min presentations of their results	
17:15- 17:30	Concluding discussions	

## **Programme: Day 2, 18<sup>th</sup> of September**

EU Magnesium – Mg extraction and production from Cr production residues and dolomite

<b>Time</b>	<b>Topic</b>	<b>Presenter</b>
9:00 - 9:30	<i>Morning coffee</i>	
9:30 - 10:30	Magnesium and Scandium in the Master alloy automotive or aircraft sector industries	Henk van de Laan, VIC
10:30 - 11:30	The Magnesium market and market evolution: Risks, challenges, potential for Europe	Henk van de Laan, VIC
11:30 - 12:15	Primary and secondary Magnesium resources, and introduction to the EU-Magnesium project	Beate Orberger, CATURA
12:15 - 13:00	<i>Lunch Break</i>	
13:00 - 13:45	MURES Magnesium: Magnesium metal production in and for Europe (Challenges (investment), risks, successes)	Duane Runciman – Matt Dey (MURES Magnesium)
13:45 - 14:30	How sustainable brownfield redevelopment provides Magnesium to the EU	Martin Dreiseite, F & R Worldwide
14:30 - 15:00	<i>Afternoon coffee</i>	
15:00 - 16:15	Mg metal production via molten salt electrolysis and Aluminium thermoreduction	Alen Rupnik, Blaz Likozar, National Institute of Chemistry
16:15 - 17:00	Life Cycle Assessment of MURES plant – challenges and results	Dimitra Skentzou, SE@C
17:00 - 17:30	Concluding discussions	

## Programme: Day 3, 19<sup>th</sup> of September

### Scaleup – Scaling up Scandium production from European Bauxite Residue

Time	Topic	Presenter
9:00 - 9:30	<i>Morning coffee</i>	
9:30 - 10:00	Scandium overview	Dag Øistein Eriksen, UiO
10:00 - 10:30	Scandium and Al/Sc alloy market	Admiris
10:30 - 11:00	Bauxite and the Scale-up project	Beate Orberger, CATURA
11:00 - 12:00	Pilot plant and leaching operation	Efthymios Balomenos, Mytilineos
12:00 - 13:00	<i>Lunch Break</i>	
13:00 - 13:30	Sc separation by ion exchange	Elena Mikeli, NTUA
13:30 - 14:00	Impurity reduction	
14:00 - 14:30	Crystallization of Sc compounds	Kerstin Forsberg, KTH
14:30 - 15:00	<i>Afternoon coffee</i>	
15:00 - 15:30	Sc-Al alloys	Dimitrios Sparis, NTUA
15:30 - 16:00	Business perspective	Mytilineos, Admiris
16:00 - 17:00	<i>Workshop</i> Participants work in groups on theme related questions and presents their conclusions.	
17:00 - 17:30	Concluding discussions	

## Programme: Day 4, 20<sup>th</sup> of September

### Valore – V, Ga extraction from Bayer Liquor

Time	Topic	Presenter
9:00 - 9:30	<i>Morning coffee</i>	
9:30 - 10:00	The Gallium market and market evolution: Risks, barriers and or challenges, opportunities for Europe	Dirk Vangeneugden, Vito
10:00 - 10:30	Endusers view: Gallium applications in the electronics sector	Ericsson
10:30 - 11:15	Primary and secondary extraction of Gallium resources	Jochen Petersen, UCT
11:15 - 12:00	Introduction to the EU-Valore project	Beate Orberger, CATURA
12:00 - 13:00	<i>Lunch Break</i>	
13:00 - 13:45	Case Study: Gallium metal production within Al and Zn extraction and recycling: The business case (Challenges, risks, successes) <i>Mytilineos (Resins)/MEAB (SX) – Piloting</i>	Carsten Dittrich, MEAB
13:45 - 14:30	The Vanadium market and market evolution: Risks, barriers and or challenges, opportunities for Europe	Elena Mihaela Seftel, Vito
14:30 - 15:00	<i>Afternoon coffee</i>	
15:00 - 16:00	Vanadium extraction: Novel vs Conventional route – Panel Presentations <ul style="list-style-type: none"> <li>• Bayer chemistry: Behaviour of V and Ga within the Bayer process</li> <li>• Vitos adsorbent development journey</li> <li>• Vanadium crystallization</li> </ul>	Efthymios Balomenos, Mytilineos Subhamoy Bhowmick, Vito Cledwyn Mangunda, KTH
16:00 - 16:15	Q & A to panel members	
16:15 - 17:00	Participants group activity (3 groups: -10 minutes presentation plus 5 minutes to take questions fielded at them.	Mytilineos, Admiris
17:00 - 17:15	<i>Kahoot online Q &amp; A of material presented. - Prizes awarded to top 3 participants.</i>	
17:15 - 17:30	Concluding discussions	