



Aalto University
School of Chemical
Engineering

INTERNATIONAL PROCESS METALLURGY SYMPOSIUM

Metallurgy as a tool for challenges in circular economy

5 – 6 November, 2019

Aalto University School of Chemical Engineering
Department of Chemical and Metallurgical Engineering
Espoo, Finland



Tuesday, November 5th, 2019, Morning

Time	Keynote Session
	Vice President for Innovation Janne Laine , Aalto University, Finland Opening Speech
	N.N. European Commission (tbc) EU Battery Presentation
	CEO Joni Lukkaroinen , Terrafame Why battery metals, why Finland?
	Prof. Andy Abbott , University of Leicester Ionometallurgy: Metal processing using ionic liquids
	L U N C H

Tuesday, November 5th, 2019, Afternoon

Time	Session 1 Battery Materials	Session 2 Carbon Footprint
	<u>Session Keynote</u> Dr Emma Nehrenheim , Northvolt, Sweden Northvolt story	<u>Session Keynote</u> Jarmo Lilja , SSAB, Finland
	CEO, PhD, Prof. Pertti Lamberg , Keliber, Finland Production of battery grade lithium chemicals from spodumene ore – Case Keliber	Prof. Timo Fabritius , Oulu University, Finland Biomass based reductants in ironmaking and steelmaking
	Prof. Zhihong Liu , Central South University, China Recycling status of spent lithium ion power batteries in China	Prof. Paul Beukes , North West University, South Africa Reduced CO ₂ emissions in Cr-ferroalloy production.
	CEO Joni Hautojärvi , Nornickel Sustainable integrated battery chemicals production from nickel mattes	Dr. Eli Ringdalen , SINTEF Industry Pretreatment of manganese ore as a mean to reduce CO ₂ emissions
	Post Doctoral Researcher Fupeng Liu , Aalto University, Finland Synergistic recycling of spent NiMH and Li-ion batteries based on green chemistry principles	Prof. Merete Tangstad , Norwegian University of Science and Technology, Norway Reduced CO ₂ emissions in Mn-ferroalloy and Si/Fe-production
	Jaakko Savolainen , Fortum, Finland Battery Life Cycle services - How Add value to batteries in all life cycle stages.	Outokumpu tbc
	Dr. Alejandro Datas , Technical University of Madrid, Spain Energy storage in molten silicon: AMADEUS project overall concept and context	N.N. (tbc)
	Prof. Tuomo Sainio , Lappeenranta University of Technology Continuous ion exchange in purification of battery metals – case Co.	Prof. Ari Jokilaakso , Aalto University, Finland Non-fossile recuctants in non-ferrous metals refining
	Prof. Mari Lundström , Aalto University, Finland BATCircle – Recycling and Industrial Integration	Doctoral student Samant Nagraj , KU Leuven, Belgium Plasma-driven metal extraction from industrial process residues.
	Shichao He , Central South University, China Recovery of spent LiCoO ₂ cathod material with the reduction calcination-leach-precipitation process	Prof. Hürman Eriç , University of the Witwatersrand, South Africa Quo Vadis Metal Processing? Carbon Footprint, Sustainability and Circular Economy

Wednesday, November 6th, 2019, Morning

Time	Session 1 Gold/Precious metals	Session 2 Process Simulation
	<p><u>Session Keynote</u> Petri Latostenmaa, Boliden Harjavalta Precious metals production in Boliden Harjavalta</p>	<p><u>Session Keynote</u> Dr. Jiliang Xia, Outotec, Finland CFD modeling as a powerful tool in development of Outotec products and processes</p>
	<p>Violeta Barranco, Cenim, Spain Electrochemical recovery of trace Pt from Cu-ER electrolyte – and functional surfaces created.</p>	<p>Doctoral student Alejandro Llamas, Freiberg University, Germany Development of a comprehensive product-centric sustainability indicator framework.</p>
	<p>Doctoral student Stylianios Spharriotis, University of Leicester, UK Electrowinning of metals in deep-eutectic solvents.</p>	<p>Doctoral student Jani-Petteri Jylhä, Aalto University, Finland Coupled CFD-DEM modelling of flash smelting furnace</p>
	<p>Doctoral student Pelin Altinkaya, Aalto University, Finland Cyanide free leaching of gold.</p>	N.N. (tbc)
	<p>Prof. Herman Potgieter, University of Witwatersrand, South Africa How successful is ionic liquids to extract gold from low grade refractory tailings?</p>	<p>Doctoral student Roberto Macchieraldo, University of Bonn, Germany Study of solvent miscibility by computational methods.</p>
	N.N. (tbc)	<p>Doctoral student Gwydyon Marchelli, University of Bonn, Germany In-silico design of selective metal extractants</p>
	<p>Doctoral student Ivan Korolev, Aalto University, Finland Electrochemical process for selective recovery of gold.</p>	<p>Dr. Sirpa Kallio, VTT CFD modeling of reactive gas-solid flows with examples from combustion processes</p>
	N.N. (tbc)	<p>Post-doc Min-Kyu Paek, Aalto University, Finland Development of Simulation Model for Vacuum Tank Degasser Process</p>
	<p>Doctoral student Joonas Heikkinen, Aalto University, Finland Pyrolysed carbon for platinum recovery by electrodeposition-redox replacement</p>	<p>Prof. Daniel Lindberg, Aalto University, Finland Elemental recovery and valorization of biomass and waste incinerator ashes</p>

Wednesday, November 6th, 2019, Afternoon

Time	Session 1 Valorisation	Session 2 Resource efficiency
	<p><u>Session Keynote</u> Dr. Leona Wunderlich, Boliden Odda, Norway Research case of Ag-thiosulfate leaching of neutral residue</p>	<p><u>Session Keynote</u> N.N. (tbc)</p>
	<p>Dr. Mari Lindgren, Outotec Technologies enabling circular economy and opportunities that lie within</p>	<p>Prof. Dimitrios Panias, National Technical University of Athens, Greece Resource Efficiency in Primary Alumina/Aluminum Industry</p>
	<p>Doctoral student Ionna Maria Pateli, University of Leicester, UK Ionometallurgical leaching of industrial process residues using deep-eutectic solvents.</p>	<p>Doctoral student Giacomo Damilano, KU Leuven, Belgium Synthesis of extractants and ionic liquids from renewable chemicals</p>
	<p>Doctoral student Thupten Palden, KU Leuven, Belgium Biocompatible solvometallurgical leaching methods for low-grade industrial process residues.</p>	<p>Prof. Zhiyong Liu, Central South University, China Mobility and speciation of arsenic species from the lead-zinc smelter</p>
	<p>Doctoral student Jennifer Astoveza, Imerys Aluminates, France Residual matrix valorisation as supplementary cementitious materials in calcium aluminate blended cements</p>	<p>Prof. Emeritus Pekka Taskinen, Aalto University, Finland tbc</p>
	<p>Doctoral student Christina Siakati, KU Leuven, Belgium Iron-rich inorganic polymers derived from residual matrices.</p>	<p>Dr. Justin Salminen, Boliden Kokkola, Finland By-product metals recovery from complex streams'</p>
	<p>Dr Oluf Bøckman – Glencore Nikkelverk High lights from 11 years R&D and expected benefits for the new Cu-EW demoplant at Glencore Nikkelverk AS</p>	<p>Prof. Tianzu Yang, Central South University, China Oxygen pressure dissolution of antimony trioxide in potassium hydroxide solution</p>
	<p>Prof. Yongxiang Yang, TU Delft, The Netherlands Recycling e-waste and REE</p>	<p>Doctoral student Nikos Nikolopoulos, KU Leuven, Belgium Advanced characterisation of metal-containing low-grade metallurgical residues.</p>
	<p>Prof. Bart Blanpain, KU Leuven Zero waste processing of metallurgical slags: dream or reality</p>	<p>Prof. Longgong Xia, Central South University, China The Strengthening of Copper Recovery from the Smelting Slag</p>