

Program: Materialer for det grønne skiftet: utfordringer og muligheter

Wednesday Aug. 28th

08:15 Registration		
Plenary Session	Room: Messanin 1	Chair: Marisa Di Sabatino
09:00 Welcome	Marisa Di Sabatino , professor at NTNU	
09:10 An example of a heavy industry for mass application: Building thermal management, thermal efficiency, electrification, decarbonation	Yves Brechet , Scientific director of Saint Gobain (France) and professor at Monash University (Australia)	
09:40 Green aluminium constructions: Opportunities and challenges	Trond Furu , Research Manager at Norsk Hydro ASA, professor II at NTNU	
10:10 Pause		
10:30 Critical raw materials for Net-Zero: The influence of technological and societal paths to meet global material demand	Moana Silva Simas , Research Scientist at Sintef Industry	
11:00 Challenges with well-established metallic materials applied for the green shift	Gothard Mälzer , Leading Advisor Materials Technology - Metallic Materials & Welding, Equinor ASA	

11:30 Lunch			
Parallell session 1	Room: Messanin 1	Parallell session 2	Room: Nils Arne
Material Processing 1		Data Management, Modelling and Characterization	
Chair: Marisa Di Sabatino (NTNU) and Morten Onsøien (SINTEF)		Chair: Ida Westermann (NTNU) and Bjørn Holmedal (NTNU)	
13:00 Increased raw material utilisation not trivial but by necessity in the future	Maria Wallin, keynote	Data sharing for cross-disciplinary green solutions	Jesper Friis, keynote
13:20 Additive manufacturing of a high temperature coating for aero-engine applications	Ingrid Bergheim	Data documentation and storage for advanced materials development	Tor S. Haugland
13:35 Aluminothermic reduction: a sustainable method for producing Fe65Si26B9 phase change material	Jianmeng Jiao	Crystal plasticity finite element method, implementation, and applications	Hassan Moradi Asadkandi
13:50 3D-printing og Støping – Venner eller konkurrenter?	Morten Onsøien	Do we need crystal plasticity theory in metal forming simulations?	Bjørn Holmedal
14:05 Pause		Pause	
14:25 Hydrogen reduction of ilmenite: Comparing two ores	Tristan Petrus Maria Van Kaam	Indexing of Electron Backscatter Patterns using EBSD Indexer software	Yingda Yu
14:40 Implementing Pre-Reduction in Mn-Alloy Production: A Case Study at Eramet Porsgrunn	Vincent Canaguier	Flux-Assisted Sessile Drop Method on the Stability and Wettability of the 1xxx/TiC system	Ingvild Runningen
14:55 Removal of Zn and other volatile elements from molten Al by vacuum refining	Sarina Bao	Morphology and refractive index characterization of subsurface ultrashort pulsed laser modifications in ZnS	Eskil Einmo
15:10 A Short Review of Metal Additive Manufacturing by Laser Powder Bed Fusion	Kai Zhang	Recycling of B-added Steel Scrap Into Spheroidal Graphite Iron: Microstructural Analysis	Andreas Bugten
15:25 Quality requirements for 3D printed parts	Stian Gurrik, keynote	The NorFab Infrastructure - opportunities for materials research in Norway, the Nordics and beyond	Peter Andreas Köllensperger, keynote
15:45 End of Day 1			

18:30 Dinner at Rockheim Panorama			
Thursday Aug. 29th			
Material Processing 2	Room: Messanin 1	Corrosion and off-shore materials	Room: Nils Arne
Chair: Merete Tangstad (NTNU)		Chair: Marianne Videm (Force Technology)	
09:00 SFI PhysMet – Status and recent research highlights	Knut Marthinsen, keynote	Material challenges in the ocean industry, from a regulators perspective	Morten Langøy, keynote
09:20 Atomization of silicide powders for Additive Manufacturing	Kristina Dyrli Log	Development of a Welding Procedure for High Strength Steel Armour Wires for Subsea cables	Jonas Larsson
09:35 Modular semi-industrial scale Liquid Metal Loop with MHD pumping	Robert Fritzsche	Hydrogen assisted cracks in jack-up rigs	Marianne Videm
09:50 Pause		Pause	
10:20 SiO reduction using hydrogen: Exploring reaction conditions	Liya Jacob	Corrosion of Steel Wires in Musical Instruments due to Emissions from Cellulose Nitrate	Vera de Bruyn-Ouboter
10:35 Slag flow into coke beds in Mn-furnaces	Vishal Rimal	Effekt av økt Fe, Zn og Cu innhold i Aluminiums-legeringer på mekaniske egenskaper og korrosjon	Ola Jensrud
10:50 Utilization of biochar in Mn-sinter production	Yu Han		
11:05 Lab scale to pilot scale pelletization; bauxite residue agglomerates for H2 reduction	Frida Vollan		

11:30 Lunch			
Al and light alloys	Room: Messanin 1	Energy materials	Room: Nils Arne
Chair: Trond Furu (Hydro)		Chair: Gabriela K. Warden (NTNU)	
13:00 Effect of impurity elements on the recycled HPDC aluminium alloys: a literature study	Supreet Kaur	Fused Quartz Crucibles for Czochralski Silicon Production	Gabriela Kazimiera Warden
13:15 Effect of Trace Elements in Recycled Aluminium Alloys for Extrusion	Eva Mørtsell	Hydrogen storage properties of Nb-rich alloys of the Nb-Cr-Mn system	Bruno Hessel Silva
13:30 Effekt av bråkjølingshastighet på mekaniske egenskaper og restspenninger i Aluminiumsblokker for maskinering	Stanka Tomovic-Petrovic	Investigations of gas flow in charge materials with biocarbon	Frida Vollan
13:45 Pause		Pause	
14:05 Misconceptions about the Beta to Alpha Transformation in 6xxx Aluminium Alloys	Jostein Røyset	Metallic phase change materials for high temperature latent heat thermal energy storage applications	Paolo Lai Zhong Lo Biundo
14:20 Multi-billet extrusion of aluminium for large section panels	Kristian Grøtta Skorpen	Optimisation of the formulation of silicon anodes for lithium-ion batteries	Alberto Olivo
14:35 Optimizing the Mn and Cr content in fibrous 6005A Aluminium alloys	Jostein Røyset	Revolutionizing Lithium-Ion Batteries: Sustainable Silicon Waste Transformation into High-Performance Anode Materials	Kai Tang

14:50 End of Conference