

## Program

# SFI Metal Production Spring Meeting

**April 18-19, at SINTEF's adm. building (Strindveien 4, Trondheim)**

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**Wednesday April 18, 08:30 – 20:00**

### **08:30-10.15 Sustainable Metal Production session (M. Tangstad)**

Summary of my PhD work, by Pyunghwa Peace Kim (NTNU)

Melting and mixing of Mn raw materials, by Eli Ringdalen (SINTEF Industry)

Excavation of Wacker furnace, by Michal Ksiazek (SINTEF Industry)

Metal production summary, by Merete Tangstad and Kristian E. Einarsrud (NTNU)

**Poster session** for Sustainable Metal Production

### **10:15-11:15 Refining & Emissions session (G. Tranell)**

The fundamentals of Si-Refining, by Erlend L. Bjørnstad (NTNU)

Al-filtration, by Massoud Hassanabadi (NTNU)

Emissions work summary, by Gabriella Tranell (NTNU)

### **11:15-12:15 Waste session (A. Kvithyld)**

Spent potlining solutions and research, by Kai Erik Ekstrøm (NTNU)

Reducing dross by using CO<sub>2</sub> atmosphere by Nicholas Smith (NTNU)

Furnace optimisation for increased recycling, by Egil Solberg (Alcoa)

Recycling of post-consumed aluminium scrap, by Ingrid Meling (NTNU)

Refining and recycling summary, by Anne Kvithyld (SINTEF Industry)

### **12:15 – 13:15 Lunch**

13:15 – 14:30 **Poster session** for Refining & Emissions and Waste

### **14:30 – 18:00 Associated project session (12 projects á 15 minutes)**

Waste-to-Value, Controlled Tapping, BEST, HighTempQuartz, SiNoCO<sub>2</sub>, Carma, EIMet, INTPART, ENSENSE, Ensural, RemovAl, Reduced CO<sub>2</sub>.

**Dinner** at SINTEFs canteen, 18:00-20:00

## Thursday April 19, 08:30 – 15:30

### Innovation and industry session

08:30 – 09:15 “Catapult, innovation and possibilities”,  
by Lars Petter Maltby (Eyde Cluster)

09:15 – 10:00 “SINTEF in an industry perspective”,  
by Alexandra Bech Gjerv (SINTEF)

### Coffee Break

10:15 – 10:45 “Implementation of SFI results”,  
by Benjamin Ravary/Leif Hunsbedt (Eramet)

10:45 – 11:15 “Finnfjord – research and development”  
By Erlend Olsen (Finnfjord).

11:15 – 11:45 “Use of results from SFI Metal Production at Wacker Chemicals”  
By Randi Synnøve Hegdal Chapana (Wacker)

11:45 – 12:15 “Evaluation of the Scheme for Research-based Innovation (SFI)”  
by Tor Einar Johnsen (RCN).

### 12:15 -13:15 Lunch

13:15 – 13:45 “Enova – instruments for Innovation”  
By Ståle Kvernørd (Enova)

### About SFI Metal Production and Mid-term evaluation

13:45 – 14:15 Status, SFI Metal Production, by Aud N. Wærnes

14:15 – 14:45 About the Mid-term evaluation, by Aud N. Wærnes

14:45 – 15:30 Discussion about the coming SFI Mid-term evaluation

15:30 Finished

## Wednesday April 18, Overview of the Posters

- Silicon carbide production during the process, PhD Sethulakshmy Jayakumari
  - Dissolution kinetics of graphite in Fe-Mn, PhD Hamideh Kaffash
  - Cavity formation in silicon furnaces, Industrial PhD Raghed Saadieh (Elkem/NTNU)
  - Slag reactivity towards agglomerated biocarbon for SiMn production, Industrial PhD Leif Storlien (Ferroglobe Mangan Norway/NTNU)
  - Characterization of freeze lining in ilmenite smelter, BSc-students Yngvar Andersen and Tor-Eivind Ebbesen.
  - Characterization of oxide rafts from electrolysis cells, BSc-students Andrea Nautnes, Ingrid Hansen and Sofie Nilssen Neverdal
  - Alumina dissolution in cryolite, MSc student Sindre Engzeliuss Gylver
  - Pre-reduction behaviour of manganese ores in CO+H<sub>2</sub> gas atmosphere, Didier Ngoy
  - Temperature measurements in the ladle and runner during tapping in FeSi production, MSc-student Hanne Mette Hustad
  - Mathematical modelling of alumina feeding, Attila Kovács Oxford univ.
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- Recycling of post-consumed Aluminium Scrap, MSc Student Ingrid Meling
  - Removal of Aluminium Carbide from Liquid Removal of Aluminium Carbide from Liquid, MSc student Trygve S. Aarnæs.
  - Chemical Reactivity and Thermal Stability of the AlPO<sub>4</sub>-Bonded Binder used in Al<sub>2</sub>O<sub>3</sub>-based CFFs, MSc student Cathrine Kyung Won Solem.
  - Verification of experimentally determined permeability and form coefficient of Al<sub>2</sub>O<sub>3</sub> Ceramic foam filters (CFFs) at high and low flow velocity, PhD student Massoud Hassanabadi.
  - Effects of CO<sub>2</sub> cover gas on the oxidation of AlMg alloys, PhD student Nicholas Smith
  - Waste/by-products in Aluminium industry, Anne Kvithyld, Martin Syvertsen and Arne Petter Ratvik
  - Modelling of the Mass Transfer of Ca and Al in the Oxidative Ladle Refining of Si, PhD Erlend Lunnan Bjørnstad.
  - Mechanistic Study of the Drain Free CFF Filtration Technology on the Metal Cleanliness of Aluminium and Its Alloys, Industrial PhD Are Bergin (Hydro/NTNU)
  - Salt free separation of aluminium dross with oxide recycling, Martin Syvertsen and Bjarte Øye, SINTEF.