metal production

Norges forskningsråd

SFI Metal Production

Agglomeration Seminar NyKoSi, 22. - 23. November 2016

Centre Director Aud Wærnes
Host: NTNU

Vision
Resource efficient metal production from a clean industry

http://www.ntnu.edu/web/metpro/cri-metal-production

SINTEF NTNU teknova HYDRO ALCOA FESIL

GLENCORE MANGANESE NORWAY AS ERAMET NORWAY FINNFJORD Elkem WACKER TiZir Titanium & Iron

metal production

Industry & Research

Wacker - Holla

Hydro Aluminium, Sunndal

Pilot experiment
at NTNU/SINTEF

SFI Metal Production Overview

Vision: Resource efficient metal production from a clean industry

Primary objective

- ✓ Strengthen the future of Norway's largest, land based industry by establishing an interdisciplinary Research Centre for Metal Production enabling industrial innovation.
- ✓ Give the industry long term access to world class fundamental competence and candidates.
- ✓ The Centre will focus on close collaboration between Industry and Academic/Research communities in Norway, to enable accelerated implementation of new knowledge in industry practice and innovation

Task 3.3 Recycling Waste in Products and Processes

Waste management in the metallurgical industry in Norway

Metal production in Norway start with raw materials that is extracted from ores.

In most cases, the metal production will generate byproducts/wastes streams. Today, some byproducts are processed into commercial products (microsilica). However, there are still materials ending up on landfills.

An overview of the byproducts/waste streams originating from the SFI partners are now summarized in a report. Some wastes will be selected for further processing in the SFI. Agglomeration will in many cases, be the first step in a process for utilising the valuable elements. The Wastes from the Eyde Waste to Value, is part of this study.

A Post Doc will be shared between the SFI Metal Production and IPN Waste to Value.

Quartz composites

Master level - Postponed/cancelled?

The goal is to describe the reaction mechanisms and to quantify the kinetic parameters for use of different types of composite raw materials in Si and FeSi production.

The effect of mixing with different waste materials will be investigated. The main results will be presented in a mathematical form for further use in calculations and modelling.

Composites have not been a prioritized area in the SFI. So far, the main focus has been to study the kinetic and thermodynamic for chemical reactions in the furnace. Composites will be considered on a later stage in the SFI.

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Thank you for your attention!