

## **Research area**

**Recycling of Minerals and Metals, or more specifically:**

**Promotion of recycling or use in alternative applications  
and minimization of waste generated in the industry**

**Recycling of minerals and metals from scrap and used  
consumer goods**

**One of the Centres of Excellence financed by VINNOVA.**

## Member companies and research foundations

**Iron and Steelmaking:** AB Sandvik Materials Technology, Outokumpu Stainless AB, Outokumpu Stainless Oy, Erasteel Kloster AB, Fundia Special Bar AB, Höganäs AB, Ovako Steel AB, Ruukki Oy, SSAB Tunnpåt AB, Uddeholm Tooling AB, Jernkontoret

**Mineral producers:** Svenska Mineral AB, Minfo

**Non-ferrous producer:** Boliden Mineral AB

**Ferro alloys:** Vargön Alloys AB

**Mining:** LKAB

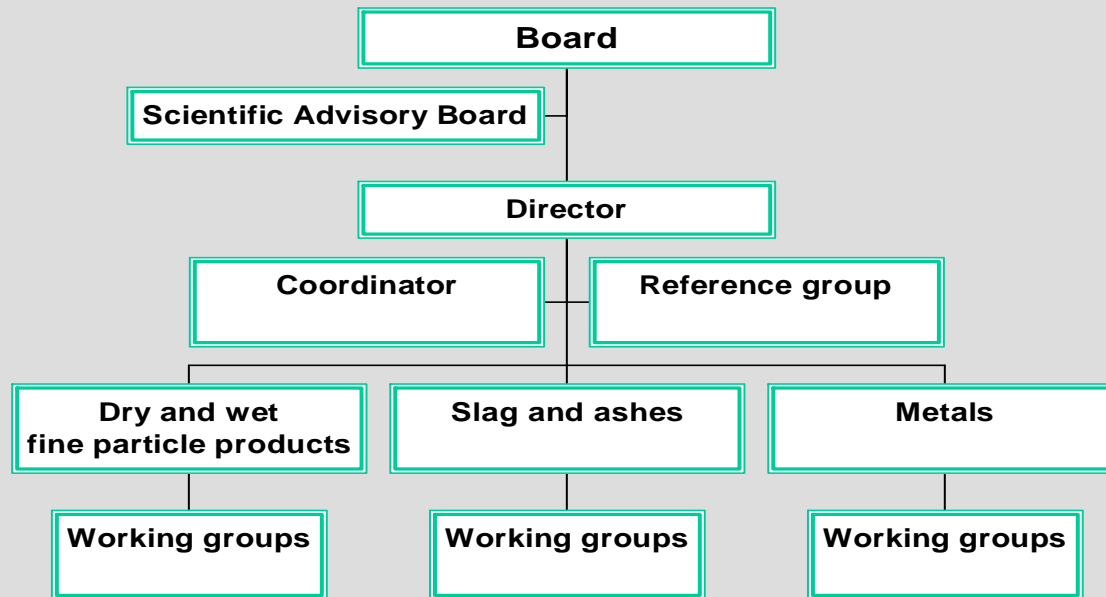
**Energy producer:** Vattenfall AB

**Cement production:** Cementsa AB

**Recycling, by-product processing and scrap treatment:** BDX Företagen AB, MultiServ AB, SSAB Merox AB, Stena Metall AB

**Supplier to steel industry:** Linde AG

# Organisation





## **Board**

**Göran Carlsson, SSAB, chairman**

**Bo Björkman, Ltu, centre director**

**Eric Forssberg, Ltu**

**Theo Lehner, Boliden Mineral AB**

**Birgitta Lindblad, Jernkontoret**

**Bo Rogberg, Sandvik Materials Technology**

**Bo Svahn, Minfo**



## Resources

- **Well equipped laboratories for characterization (mineralogy, particle size, leaching etc.), high temperature reactions, hydrometallurgy, physical separation ... etc at Ltu as well as access to equipment at member companies**
- **Presently 5 professors, 7 researchers, 6 PhD students and one research engineer involved**
- **Presently Div. of Process Metallurgy, Div. of Mineral Processing and Div. of Waste Science and Technology at Ltu, Mefos and earlier also Div. of Chemistry at Ltu and CBI in Stockholm, colaborating within the centre.**
- **Extended international network with other research institutes and universities**

**Financing of MIMER year 1 -2 of stage 4 (kSEK).**

	<u>Year 1</u>	<u>Year 2</u>	<u>Sum for year 1-2</u>
<b>VINNOVA</b>	<b>6 000</b>	<b>6 000</b>	<b>12 000</b>
<b>Companies (own work)</b>	<b>6 175</b>	<b>5 505</b>	<b>11 680</b>
<b>Companies (membership fees)</b>	<b>1 360</b>	<b>1 360</b>	<b>2 720</b>
<b>Research foundations</b>	<b>120</b>	<b>120</b>	<b>240</b>
<b>LTU</b>	<b>6 000</b>	<b>6 000</b>	<b>12 000</b>
<b>Totally</b>	<b>19 655</b>	<b>18 985</b>	<b>38 640</b>

## Success stories

**Project I. C Pickling sludge** Presently tested in practical operation at Outokumpu Stainless AB in Avesta.

**Project I. B Recycling of metallurgical residues from scrap based steel making** Three different applications tested for longer time in practical operation at Outokumpu Stainless AB in Avesta and at Uddeholm Tooling AB in Hagfors and in one case implemented into ordinary practice (Uddeholm).

**Project I. A Recycling of metallurgical residues from ore based steel making** Two different applications tested in practical operation at SSAB Tunnpåt AB in Luleå

## Continuation

- Present financing from VINNOVA is ended in dec. 2005.
- We will apply for a new VINN Excellence Centre

### Centre for sustainable use of mineral and metal resources

**Research area: Raw material usage, including recycling, that best contribute to a sustainable growth, i.e. from technical, economical and environmental point of view.**

# Research collaboration

