

IME Process Metallurgy and Metal Recycling

The activities of the Institute for Process Metallurgy and Metal Recycling essentially consist of applied research and teaching in the fields of recycling, vacuum, electric arc and hydrometallurgy.

Research Areas

Pyro-Recycling-Processes

- recovery of valuable metals from scrap, dusts, sludges and zero waste strategies
- rotary kiln vaporisation
- injection and hollow electrode technology
- IRRC with 0,5 MW TBRC, 1MW electro-furnace



Vacuum- and Inert-Gas-Metallurgy

- lab- and demo-scale VIM's and EB, pilot-scale (P) ESR and VAR
- master alloy manufacturing
- purification by vacuum distillation
- vacuum degassing



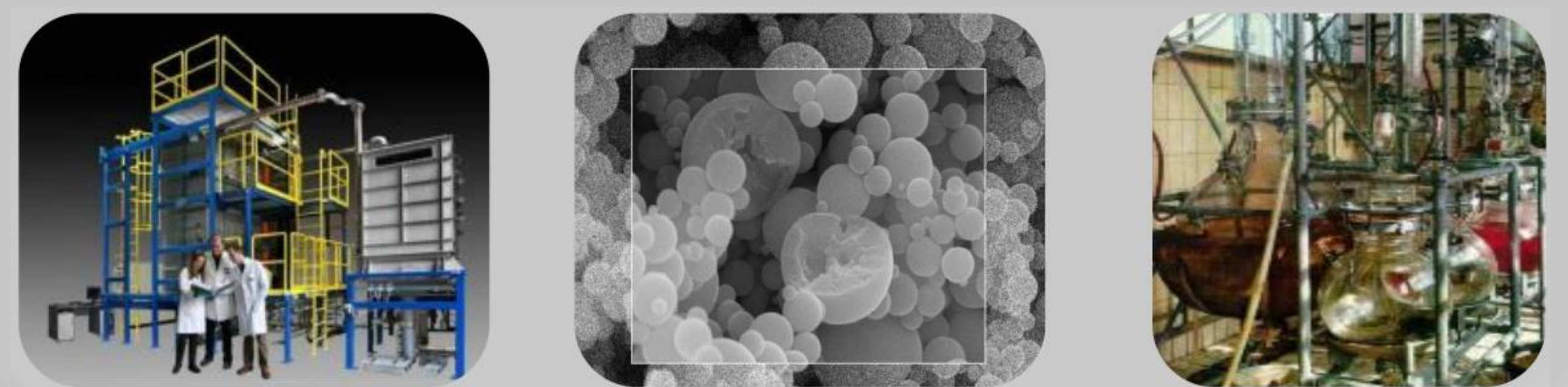
Melt Treatment and Purification

- fractional crystallization of alloy melts
- injection of reactive gases in molten metals
- selective oxidation by slag treatment
- metal filtration
- salt slag refining using centrifugal technique



Hydrometallurgy and Electrolysis

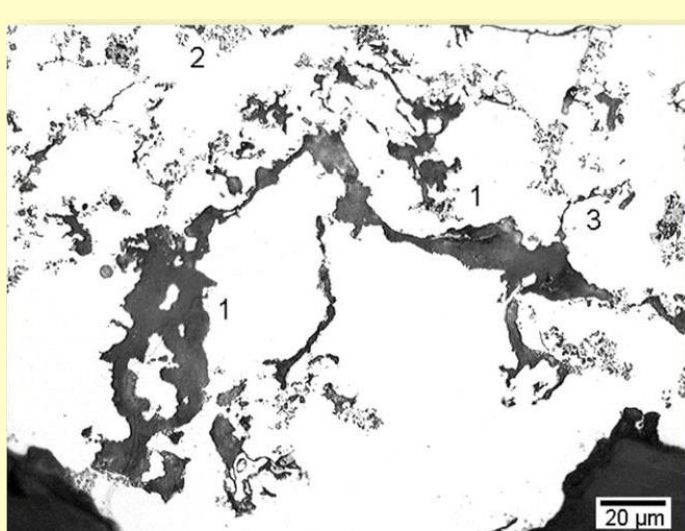
- aqueous and molten salt electrolysis
- fixed bed and reversal-current cells
- heap, agitation and pressure leaching
- synthesis of nano particles by ultrasonic spray pyrolysis



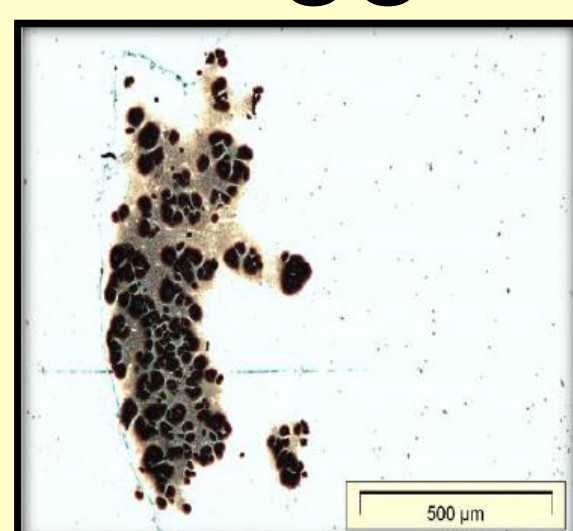
IME is represented in the following projects



P4 "Melt Cleanliness"



P4C "Inclusion Agglomeration and Floatation"



P5 "Aluminium Recycling"



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