Resource recovery from HIsarna dust

Background
HIsarna is a new steel making technology in which iron ore is converted into liquid pig iron in one reactor. This allows for a drastic reduction in energy consumption and CO_2 emissions. Furthermore, HIsarna offers new possibilities for the use of lower quality raw materials, as phosphate-rich iron ore. The technology is developed by Tata Steel and is now being used in IJmuiden in a pilot plant with a capacity of 65 kton per year.

Challenge
In addition to the primary iron product, a dust fraction is produced. This HIsarna dust contains a number of valuable elements. However it is not yet understood how these elements can be recovered for use as feedstock in other processes. Possibly 3 marketable salts can be produced from the dust by utilising differences in water solubility in combination with selective materials; this has to be investigated experimentally though.

Aim
To characterise the HIsarna dust and to explore if valuable fractions can be produced from the dust through selective leaching, precipitation and filtration.

Requirements
- EU citizen or international student registered at a Dutch university enrolled in graduate (MSc) studies
- Fluent in English both spoken and written
- Strong background in chemistry or related areas
- Experience with wet-chemical laboratory work
- Knowledge on mineralogy is a plus

Starting date: Jan-Feb 2020

Duration: 5-6 months (MSc Internship or Thesis)

Our Offer:
- Experience of working at a cutting edge water technology research institute
- The opportunity to work in an international environment
- Living allowance of €175/month

This project is carried out at Wetsus, European Centre of Excellence for Sustainable Water Technology, in Leeuwarden, the Netherlands www.wetsus.nl

How to Apply: Send CV and motivation letter to wokke.wijdeveld@wetsus.nl