



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730471

Research and Innovation Action (RIA)

CHROMIC

Project title: **effiCient mineral processing and Hydro-metallurgical RecOvery of by-product Metals from low-grade metal contaIning seCondary raw materials**

Project coordinator: **Vlaamse Instelling voor Technologisch Onderzoek N.V. VITO, Mol, Belgium**

HZDR participant: **Helmholtz Institute Freiberg for Resource Technology**

Starting date: **01.11.2016**

Duration (months): **48**

Summary

Europe is faced with the challenge of sustaining a secure supply of by-product metals, which play a fundamental role in the competitiveness of the manufacturing sector and innovations in high-tech sectors. To loosen the growth restrictions imposed by the inflexible supply from primary mining, alternative sources for these metals must be explored.

At the same time a wealth of metals is entrapped within the vast amounts of secondary resources still being landfilled or used in applications where their intrinsic value is not fully utilized. To unlock the potential of these resources, a radically new approach to metal recovery must be deployed.

Crucial factor within this new value chain is the zero-waste approach, which captures not only the contained metals but also valorises the residual matrix (often >95% of the bulk material). Such an approach requires the development of innovative, highly selective metal recovery technologies that fully capture the metal-value without impairing the properties of the residual matrix material for valorisation.

CHROMIC aims to develop such new recovery processes for critical (Cr, Nb) and economically valuable (Mo, V) by-product metals from secondary resources, based on the smart integration of enhanced pre-treatment, selective alkaline leaching and highly selective metal recovery across the value chain. An overarching assessment of the related economic, environmental and health and safety aspects will be carried out in an iterative way to ensure that the developed technologies meet the requirements of the circular economy whilst being in line with current market demand.

The technology will be developed for two models streams (stainless steel slags and ferrochrome slags) with the potential of replication to numerous industrial residues across Europe. Involvement of society from early on will smooth the path towards implementation, so that the CHROMIC processes can contribute to securing Europe's supply of critical raw materials.