



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

RAW MATERIALS

A sustainable and effective supply for primary and secondary raw materials management and process. Multidisciplinary research groups of the University of Bologna are developing technological and management solutions for primary and secondary raw materials processing.



The research of the University of Bologna covers a wide range of issues:

Raw Materials Engineering

- Principles of mineral processing and plant design
- Raw materials for industry and for construction
- Substitution of Critical Raw Materials (CRMs): production and treatment optimization for innovative, low CRM, high-performance metallic materials
- Design and analysis of dedicated materials chain by a life cycle assessment approach

Exploitation of earth resources

- Characterization, modelling, and exploitation of mineral deposits
- Evaluation of resources and reserves also by geostatistical analysis
- Reclamation in planning, design and requalification projects

Secondary Raw Materials processing

- Recycling of raw materials, disassembly and mechanical treatment plants, removing of hazardous, rare earths elements and valuable components
- Development of new processes and technologies for secondary raw materials production from end-of-life products (WEEE, end-of-life tyres and vehicles, concrete and inert waste)
- Application of life cycle assessment (LCA)
- Implementation of circular economy and industrial symbiosis and development of models for secondary raw material in the anthroposphere analysis

HIGHLIGHTS

Facilities and equipments

The University of Bologna can count on:

- Laboratories for solid material characterization
- Circular Economy Lab for WEEE (Waste from Electrical Electronic Equipment) and CDW (Construction and Demolition Waste)
- Circular Economy Biotechnologies lab
- Instruments for soil and plant C and mineral determination, for mineral N in soil determination and for plant photosynthesis measurements

Collaborations and international research projects

The collaborations of the University of Bologna in the field span industries, multi-utilities, local authorities and research centers.

The University is partner of the EIT Raw Materials and the EIT Climate-KIC and it is involved in several international projects aiming at developing innovative solutions.

The University of Bologna is also member of the European Innovation Partnership on Raw Materials and it takes part to the activities of its Operational group whose mission is to provide high-level guidance to the European Commission, Members States and private actors.