



ABOUT

Politecnico di Torino (POLITO) is internationally ranked among the most important universities in Europe for engineering and architecture studies, with 33 000 students, more than 900 teaching staff and about 800 contracts yearly with industries, government institutions and local organisations. Since 2014 POLITO has received funds amounting to €56 million for 151 projects funded in the framework of the Horizon 2020 Programme. POLITO participates to several thematic networks and associations, in particular within the Raw Materials sector it is part of the operational groups of the European Innovation Partnership (EIP) on Raw Materials.

The Department of Environment, Land and Infrastructure Engineering (DIATI) and the Department of Applied Science and Technology (DISAT) carry out research activities in the field of Raw Materials, Sanitary and Environmental, Excavation and Safety and Metallurgy Engineering.

DIATI promotes, coordinates and manages basic and applied research, training, technology transfer and services to the local community in the field of engineering applications within land sciences, natural sciences and economic and management sciences. Raw Materials Engineering team carries out researches on: durability of natural stones; recycling of secondary raw materials; mineral processing; asbestos-containing materials treatment and analysis (NOA and ACM).

DISAT focuses on research and education involving the fundamental principles of matter and energy, their transformation and related engineering applications. Metallurgy team brings its knowledge on the advance powder metallurgy manufacturing routes and the need of efficiently use raw materials within these processes.

EXPERTISE

POLITO is involved with DIATI and DISAT in the following activities:

- Raw and secondary materials processing:
 - Experimental study on the recovery of different wastes (both from mining and from industrial sector) focusing in particular on natural stone cutting sludge valorisation.
 - Partnership in the WeCARE Commitment (Wastes from Construction industry As a Resource) recognised by EIP Raw Material through the Raw Materials Engineering team.
 - Collaboration with the Italian network "Laboratorio Materie Prime" (Raw materials lab), for enhancing the sustainable development of raw materials.

- Raw materials and extractive metallurgy:

- The metallurgy team of POLITO focuses on the re-use of gas atomised powders within additive manufacturing processes, needed for advanced powder metallurgy processes, such as additive manufacturing and net shape hot isostatic pressing.
- The Metallurgy group has been involved in several EU projects on the topic of Additive Manufacturing and Net Shape Hot Isostatic Pressing (GETREADY, NEWTEAM, HUC within JTI-Cleansky calls).



SERVICES

The characterisation of raw and secondary materials is carried out in DIATI Multimodal Analysis laboratory equipped with MOCF, MOLP, micro-durimeter, SEM, XRD, micro-RAMAN and micro-FTIR.

Research on mineral and secondary raw materials treatment are carried out in DIATI Solid Processing laboratory equipped for dimension and shape determinations, comminution tests, magnetic, electrostatic and gravimetric separations, flotation tests.

The DISAT Materials characterisation laboratory is equipped with machines for materials chemical and morphological characterisation and powder metallurgy processing purposes. In particular, the major equipment for materials characterisation are ICP and light element (C, S, N, O, H) combustion analysis, XRF, thermoionic SEM, FESEM, XPS, XRD, density and flowability tester, metallographic preparation and related microstructural analysis, hardness and major static and dynamic mechanical testing. In terms of materials processing the DISAT research group has direct access to laser AM and EBM. Furthermore, within 2019 the DISAT laboratory will be equipped with a gas atomiser and a hot isostatic pressing.



MORE INFORMATION

Website: <https://www.polito.it/>

Contact: Rossana Bellopede
rossana.bellopede@polito.it