The Resource Recovery and Environmental Management (R2EM) group is a consolidated SGR group since 1995 with a former name of SETRI. It is composed of researchers from the areas of knowledge of Chemical Engineering and Chemical Sciences and Environmental Technology working primarily in the field of chemical engineering, environmental engineering, applied chemistry.

R2EM group is performing research activity on development of sustainable urban and industrial waste management cycles based on resource recovery approaches, promoting circular solutions of Waste to Product and Waste to Energy. Research also involves efforts on developing environmental remediation solutions for soils and groundwater, process and environmental monitoring and environmental risk assessment.

This research area is devoted to the development and evaluation of new materials and processes to improve separation processes and to provide waste processing routes for added value by-products recovery.

Other recovery schemes are based in new and low cost waste-based materials such as vegetable waste, biopolymers and reactive resins.

Research projects:
- Recycling strategies of wastes containing rare earths: sorption processes by magnetic nanocomposites and liquid membranes for their separation and recovery (CTM2017-83581-R)
- Separation/recovery of rare earth metals by sorption on biopolymers, composites and membrane process (CTM2016-42770-R)

Environmental monitoring, Remediation and Risk Assessment

The field of risk assessment is devoted to:
- Evaluation of environmental impacts in ports and development of useful methodologies to assist ports in their environmental management
- Environmental risk assessment of chemical in different environmental compartments: water, soil and groundwater

The current research line are on the development of a new methodology to assess the contribution of ports to climate change and the evaluation of nanoparticles risk in aquatic ecosystems

Research projects:
- Simultaneous study of the processes of mobility and reactivity of nanoparticles in porous media for the elimination and recovery of contaminants in waters (NANOREMOV) CGL2017-87216-C3-1-R
- Green synthesis of metallic nanoparticles from acidic mine waters and extracts from agro-food waste (Mininano) CTM2016-68859-C2-2-R
- Pierc observatory for performance indicator analysis (PORTOPAI) (FP7-605176)