

DEVELOPMENT OF RECOVERY PROCESSES OF HIGH-VALUE METALS FROM ASH COMING FROM THERMAL TREATMENT

Innovations and Benefits - The recovery and valorisation of materials contained in ash coming from waste thermal treatment is an option which is recently gaining an important and strategic role to significantly reduce landfill disposal and to ensure, at the same time, the availability of an increasing amount of secondary raw materials.

In the last years, the high disposal costs of hazardous waste and the difficult social acceptance of new landfills is making more interesting, also from the environmental point of view, its valorisation.

In this framework, our research group developed hydrometallurgical processes for the recovery of :

- Metals contained in ash coming from combustion of spent industrial catalysts (platinum group metals, Mn, Co etc.)
- Elements contained in fly ash coming from thermal valorization of municipal solid waste (for example Ti)
- Elements contained in fly ash of coming from petroleum industrial tar (for example V)

Use -

- Critical raw materials re-entering in the production processes
- Natural resources conservation
- Reduction of waste to be landfilled

Applications and ongoing Activities - Lab and pilot tests to verify the recovery yields and the conditions for industrial upscaling.

Mass balance and air emissions and secondary waste streams assessment, in order to reuse them in the production chain, thus minimising process costs and reducing the environmental impact.

