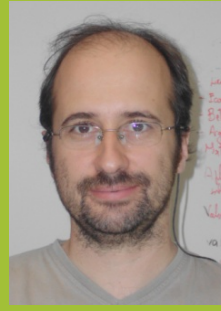


Department of Sciences and Technology of Biomass - DCTB

Valorization of ashes from combustion processes

UBiA – Environmental Biotechnology Unit



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Objectives

Main objective:

Define new valorisation routes of bottom and fly ashes from combustion processes

How to achieve?

Producing new materials for civil engineering works

Using them in wastewater treatment systems to remove nutrients and metals

Methodology

- To produce new formulations of concretes by using fly and bottom ashes as substitutes of cement and fine aggregates, respectively
- To assess the mechanical, chemical and ecotoxicological properties of new concretes and compare them with reference concretes
- To apply the ashes in chemical adsorption assays and to assess the removal kinetics in synthetic and real wastewater samples.

Expected Results

- New formulations of concretes able to be used in coast protection
 - With medium compressive strength
 - With the same or even lower emission rates of chemical species than the reference concretes
 - With the same or even lower ecotoxicological levels than the reference concretes
- New adsorption system based in the use of ashes that can be able to reduce in more than 80% the concentrations of P and toxic metals in liquid media

Concrete with biomass ashes



Compressive strength test



Batch system with ashes to remove P and Pb



Funding:



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