

## **Innovative benign by design methodologies: towards integrated biorefineries from waste valorization**

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### **Abstract**

The design of benign and environmentally sound methodologies has been the driving force of scientists in recent years. Attractive and innovative protocols that nowadays are even part of industrial ventures including biomass-derived porous carbonaceous materials, biodiesel integrating glycerol into its composition and more recently gasification and waste valorisation have been recently developed in our group in past years. These topics have extensively covered the preparation and design of (nano)materials and their utilisation in heterogeneously catalysed processes as well as in biomass and waste valorisation practises.

In this talk, we aim to provide an overview of recent trends in the utilisation of novel greener methodologies and recent efforts on integrated biorefinery schemes entailing biomass and waste valorisation of forestry (e.g. lignin) as well as food and related residues (e.g. orange peel, macroalgae) to high added value products including chemicals, materials and biofuels using environmentally sound methodologies and heterogeneous catalysis.