Editorial

The papers included in this special issue of *Journal of Renewable Materials* are a selection of those presented at the 5th Workshop Green Chemistry and Nanotechnologies in Polymer Chemistry, ECLIPSE Workshop, BIOPURFIL Workshop that was held in Donostia-San Sebastián (Spain), from the 9th to the 11th of July 2014. The workshop was organized by the University of the Basque Country with the collaboration of many other academic partners and institutions and it attracted around 100 delegates from all over the world. In total, 31 oral communications were presented and 53 posters were permanently displayed throughout the conference, catalysing numerous discussions and providing good visibility of the exhibited work. The conference had the honor to host three distinguished scientists. Three Plenary Lecturers gave overviews on different fields, Catalysis for biomass-based products (Pedro Luis Arias, University of the Basque Country, Spain), Industrial biofoam from building to automotive (Mohini Sain, University of Toronto, Canada) and Green synthesis of biobased materials (Alessandro Gandini, PAGORA, France).

The conference was a forum for bringing together academics, industrial specialists, and students to explore and discuss the latest trends in research and technology in the field of bio-based raw materials, polymer and reinforcements, biopolymer blends and biocomposites. The conference covered several topics related to green chemistry, such as renewable materials, natural polymers and fibers; synthesis, properties and applications of bio-based monomers and polymers; processing, properties and applications of bio-based blends, composites and hybrids; biodegradation, LCA and environmental issues; isolation and functionalization of bionanofillers; synthesis and surface modification of nanofillers; processing, functionalization and compatibilization of polymer nanocomposites as well as properties and applications of nanocomposites.

The first four papers deal with the study of polyurethane foams from renewable sources and a Life Cycle Inventory study of rapeseed oil derived polyol for polyurethane production. Aranguren and coworkers synthesise novel bio-based rigid polyurethane foams from a linseed oil derived polyol and substitute part of the linseed oil polyol by hydroxyl-containing modifiers of lower molecular weight. They provide a comprehensive discussion of the effect of modifiers on the reactivity and final properties of the foams. Prociak and coworkers describe the effects of the modification of polyurethane system with rapeseed oil-based polyol on the cell structure and physical-mechanical properties of conventional flexible polyurethane foams. Replacing 50 wt% of petrochemical polyol with the bio-based polyol, more comfortable foams were obtained. Paberza and coworkers highlight the role of tall oil- and lignin-based polyols, showing an improvement of photodegradation when replacing commercial polyol by these bio-based polyols. The improved resistance to UV degradation can also provide added-value products in the polyurethane market. In the fourth paper related to bio-based polyurethane foams, Fridrihsone-Girone presents a Life Cycle Inventory (LCI) study of rapeseed oil polyols suitability for polyurethane production. The study provides though LCI analysis an assessment of the profitability and viability of production in a desired final product.

Saad and coworkers report helpful and interesting results in the characterization of tannin composition, extraction process and use of Tunisian pomegranate tannins in wood adhesive formulation. This work provides a helpful study for tannin resource exploitation and application.

The final two papers focus on the use of different procedures for the preparation of functional biomaterials. Irusta and coworkers prepare biodegradable polyester mats by solution electrospinning, which could be of potential interest in tissue engineering. They highlight the importance of polymer concentration and solvent nature on the morphology of the obtained mats and their wettability. Hydrophobic surfaces can be obtained when the electrospun mats present fiber-like morphologies. Fernandez and coworkers

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design biopolymer-based photoactive multilayer films by the layer-by-layer (LbL) technique. The obtained LbL films consist of alternating layers of chitosan and a light-responsive material, such as an azobenzene-containing polymer. The authors provide a comprehensive discussion of the effect of pH and of the number of bilayers on the structure and optical properties of the films.

We want to express our gratitude to our contributing authors for their outstanding work and to the scientific and local organizing committees of the workshop for their contribution to making this event successful.

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