

Editorial

This special issue of the *Journal of Renewable Materials* contains contributions from authors who presented at the third International Conference on Bio-based Materials and Composites (ICBMC '14), held at the Polytechnic School of Montreal in Montreal, Canada, May 13–16, 2014. This conference is one of the most successful scientific events in the field of biobased materials and composites. The goal of the ICBMC conference series is to foster understanding, scientific and technical progress, and recent knowledge in the fields of natural polymers extraction, biopolymers, biomaterials and their blends, composites, biobased materials for energy conversion and IPNs. Many participants from more than 30 countries all over the world attended the conference, including chemists, physicists, biologists, technologists, doctors and engineers. The conference provided a discussion forum for the worldwide community of scientists and engineers in the field of biobased materials and composites. Many contributions from interdisciplinary research were presented on processing, morphology, structure and properties of natural polymers, biomaterials, biopolymers, their blends, composites, IPNs and gels from macro- to nanoscales and their various applications. Contributions on biocomposites and bionanocomposites were numerous and their scientific quality was qualified as very good by the scientific committee of the ICBMC conference.

It is worth noting that the ICBMC conference organizers decided to dedicate each ICBMC series as a small acknowledgement to eminent professors and researchers for their contributions to polymer science in general and polymers from renewable resources in particular. ICBMC '14 was dedicated to Professor Alessandro Gandini, who has provided a globally recognized scientific contribution.

All of the eight articles in this special issue were accepted and developed by the editorial board of the *Journal of Renewable Materials*. The topics covered in these research articles revolve around new concerns in the field of biocomposites, namely the evaluation of the biodegradability of biocomposites, the use of reinforcements from natural resources, the development of new composites from plant resources, etc.

The issue of compatibility between cellulose fibers and some polymers is discussed in the article by Boukerrou *et al.* on a new natural filler which has not been previously described in literature: olive husk flour. The effect of PVC-g-MA as compatibilizer on the morphology and mechanical and physical properties of olive husk flour/PVC composites are examined in this study.

Although the biodegradability of biocomposites is topical, relatively few literature articles deal with its evaluation. Tazi *et al.* evaluated the biodegradability of PE/sawdust composite by fungi attack. They also discuss how the coupling agent (MAPE) reduces the biodegradation rate.

The use of biocomposites in EMI shielding and electrostatic discharge applications were studied by Sittissar *et al.* In this study the authors used composites based on polypropylene filled with nickel-coated cellulose fibers (NCCF), and various properties such as EMI shielding effectiveness, surface resistivity, volume resistivity and flexural strength are characterized.

Fully biobased or “green” composites are topical. The development of new green composites is an increasingly interesting area of research both at the academic and industrial level. In this special issue two articles are devoted to this family of biocomposites. Rodrigue *et al.* studied green composites based on PLA and flax fibers. They show how the thermal and mechanical properties of PLA were changed by the incorporation of flax fibers. Another article on green composites is presented by Ojala *et al.* They investigated a new method of producing thermomoldable nonwoven composite based on kraft lignin (KL) and softwood kraft pulp (KP) in which a mixture of starch acetate (SA) and triethyl citrate (TEC) was used as water insoluble plasticizer for KL. This composite was compared to the KP/thermoplastic lignin-based one.

Biocomposites from recycled plastics and natural fibers are a promising new recycling method for plastic waste. The introduction of natural fiber can overcome the loss of mechanical performances and bring the property of biodegradability to the resulting composite. Talla *et al.* studied biocomposites based on

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hemp fibers and PET to show how the introduction of hemp fibers impacts the compounding process and the thermal and mechanical properties of the PET.

In addition to the articles on biocomposites, we have selected two other interesting studies: One on wood modification in which Noel *et al.* studied the effect of cell wall bulking treatments on dimensional stability using new biobased oligomers. The second on cellulose nanocrystals in which de Menezes *et al.* studied the surface chemical treatment of cellulose nanocrystals to enhance their nonpolar nature and improve their dispersibility in a nonpolar macromolecular matrix.

The Guest Editors of this special issue are thankful to the Editor-in-Chief of the *Journal of Renewable Materials*, Professor Alessandro Gandini. Thanks are also due to Mr. Martin Scrivener, the Journal Manager, to Mrs. Linda Mohr, the Journal's Assistant Manager, and the entire production team of the journal for their valuable support in bringing out this issue. We also

extend our sincere appreciation to all the reviewers for their invaluable and critical review comments on manuscripts that were submitted for this special issue. We look forward to other special issues of the *Journal of Renewable Materials* for future editions of the ICBMC conference series.

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