

Editorial

Scientific understanding of natural and renewable materials has surged in recent times due to a combination of factors that range from advances in instrumentation to renewed interest in sustainable chemistry and engineering. Notwithstanding the appearance of new scientific journals in all formats reaching pandemic proportions, why does the launch of the *Journal of Renewable Materials* deserve to be singled out as an original and necessary enterprise? The simple answer is because there is no periodical comprehensively covering all aspects related to polymers from renewable resources, an area of macromolecular science and technology that is experiencing a vigorous scientific and industrial blooming. To keep up with this blistering pace of scientific and technological advances in the area of renewable materials, a forum is needed for effective communication of these ideas and results. This hybrid access journal, combined with the journal web blog, will provide channels for communication of new results and innovations.

Fundamental and applied research in this field cover a wide spectrum of activities, from monomer chemistry to structure-properties relationships, from the modification of natural polymers to the synthesis of novel materials and composites, including their development, applications and life cycle assessment. All these facets incorporate, moreover, efforts to enhance the green connotations of each process. This trend parallels the concomitant flurry of activities associated with renewable energy, both strategies engaged in enhancing sustainability.

In the context of monomers from renewable resources, two distinct approaches are being pursued, namely on the one hand, the exploitation of naturally occurring structures, such as terpenes or lactic acid, using novel polymerization processes that generate materials with improved properties and hence a wider domain of applications. On the other hand, the synthesis of new monomers, such as furans, from different natural sources opens the way to original macromolecules with unique features, including self-mending and recyclability.

Natural oligomers, such as vegetable oils and tannins, constitute precious sources of new materials

through innovative chemical transformations previous to their polymerization or copolymerization.

A similar strategy is applied to the modification of natural polymers, such as the major polysaccharides, both in bulk and at their surface, and this realm is now being enriched by the boom of nanocelluloses and their revolutionary applications. Furthermore, reactive extrusion occupies a leading role in improving the performance of such polymers as thermoplastic starch. Elastomers from natural sources have already carved a niche in numerous applications and have also demonstrated that variations in feedstock (specifically molecular weight or molecular weight distribution) does not always limit commercial utility, but rather provide unique combination of properties.

Finally, composites in which either the matrix or the reinforcing elements, or both, arise from renewable resources, are attracting a great deal of attention both as viable substitutes of existing counterparts based on fossil resources and inorganic reinforcements, or as materials with much improved properties.

It is very important to emphasize that this very broad ferment of activity is by no means confined to the search for substitutes to current materials based on fossil resources but is, moreover, aimed at showing that renewable resources are a Pandora box with innumerable capabilities of generating polymers with value-added features. In addition, these materials offer unique characteristics throughout their life cycle that are inaccessible to their fossil-based counterparts.

The role of the *Journal of Renewable Materials* is therefore to reflect on the advances in all these fields through original peer-reviewed contributions and critical reviews, thus providing academic and industrial professionals involved in the development of these materials, a stimulating and up-to-date source of information. Its multidisciplinary character is a fundamental feature of its purpose and hence its core originality; fundamental and applied topics will receive equal attention and thus, it is hoped, attract a very wide audience.

The present inaugural issue offers a selection of invited contributions in the form of “perspectives”, together with some original studies. The breadth of scopes within this modest number of papers is a clear illustration of the aim of our journal, with topics spanning from wood to enzymatic polymerization, and

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including materials from vegetable oils, the potentials of bacterial cellulose, the polymerization of stiff monomeric structures, and the chemical modifications of a microbial polymer.

The Journal starts out as a quarterly although we expect and hope to expand as the issues and volumes roll on. We trust that it will rapidly acquire an important readership and contributions from experts in the area and we welcome all feedback as well as having the honor of publishing your research.

As mentioned above, JRM supports hybrid Open Access which means the contributor can choose to pay to have his/her article published which is then made available without cost to anyone who requests a copy. More information can be obtained from writing to openaccess@scrivenerpublishing.com.

In an effort to reach out to the community, we have created our own blog and LinkedIn pages. The moderator for both these undertakings is Michael Tolinski, the author of *Plastics and Sustainability* and a contributing editor to the magazine *Plastics Engineering*. The blog will provide informative advance alerts on forthcoming JRM articles and other issues involving the journal. The blog and LinkedIn "Journal of Renewable Materials Discussion Group", can be accessed through the JRM's website located at www.scrivenerpublishing.com.

Please feel free to join both forums.

The Editors
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