



EDITORIAL

Special Issue on 15th Brazilian Polymer Conference: Biopolymers, Eco-Friendly and Biodegradable Polymers and Other Topics Related to Polymeric Materials Derived from Renewable Materials

Antonio Aprigio da Silva Curvelo¹, Antonio José Felix Carvalho^{2,*} and Daniel Pasquini³

¹São Carlos Institute of Chemistry, University of São Paulo, São Carlos, 13566-590-SP, Brazil

²São Carlos School of Engineering, University of São Paulo, São Carlos, 13563-120-SP, Brazil

³Institute of Chemistry, Federal University of Uberlândia, Uberlândia, 38400-902MG, Brazil

*Corresponding Author: Antonio José Felix Carvalho. Email: toni@sc.usp.br

Received: 10 December 2020 Accepted: 11 December 2020

This issue of Journal of Renewable Materials is a special issue dedicated to the 15th Brazilian Polymer Conference (15th CBPol) which was held in Bento Gonçalves, Rio Grande do Sul State, Brazil, from 27 to 31 October, 2019 [1]. CBPol is the main scientific forum in the field of polymer science and technology in Brazil. The conference has been held biannually since 1991 and in this event had almost 900 participants mainly from Brazil, but also from Argentina, Chile, Peru, USA, Canada, Belgium, France, Great Britain, Portugal and Spain, with 60% students and 40% professionals. A total of 1,100 papers from 2725 authors were presented, from which 25% (280 papers) was in the field of Biomaterials showing the importance of these materials which are in general based on renewable resources. These 280 works were developed mainly by researchers from Brazilian institutions (universities and research institutes), mainly from the south and southeast regions of the country. The subject of more than 70% of the works was dedicated on vegetal raw materials, medicinal applications, packaging and composite materials.

The three vegetal raw materials most used in the works presented were Cassava (11%) and Corn (9%), as a source of starch, and Eucalyptus (8%), as a source of cellulose and lignin. Sugarcane was used as a raw material in only 4% of the works presented.

Among the vegetal macromolecules studied, we highlight the polysaccharides (mainly starch, cellulose and chitosan). Studies involving starch have focused on the production of blends and composites and the production and characterization of thermoplastic starch. Cellulose, both vegetal and bacterial, has been the object of studies dealing mainly with production, characterization and applications of nanocellulose.

Among the biodegradable polymers used in works involving the study of composites, blends or even in pure form were PLA, PHB (V), PBAT, TPS and PCL.

The manuscripts selected for this special issue included also works from other areas such as blend and composites and others.

This special issue includes five manuscripts as research articles, including works on cellulose, starch, chitin and chitosan, lignocellulosic fibers and biodegradable synthetic polymers based on renewable resources such as poly(lactic acid). These works are briefly described. Camargo et al. [2] studied the processing by melt extrusion films of poly(L-lactic acid) and sodium metabisulfite intended for application in packaging with antimicrobial properties. de Souza et al. [3] studied systems involving preparation and characterization of hydrophobic wood pulp modified with isocyanates to be applied as oil



spill from contaminated water. Almeida et al. [4] described water coagulants for water cleaning based on complexes of chitosan and carboxymethylcellulose. In the work of Mundim et al. [5] lignin was used as a modifier agent for sisal to improve its performance as reinforcement in composites of cementitious matrixes and Reichert et al. [6] studied the effect of mercerization treatment on Pineapple crown fiber for application in composites with polypropylene.

This is the second CBPol Special issue in JRM, the first was in the 14th edition in 2015 and thank to Tech Science Press for this collaboration and in particular we are grateful to JRM Editors Prof. Antonio Pizzi, Ramaswamy Nagarajan and Shengjie (Patrick) Zhai and to Ms. Crystal for its technical support. We also thank all the authors of this Special Issue who's submit their manuscript.

We hope this issue could give an idea of the works in the field of polymers derived from renewable resources and we expect to meet this vibrating community again in the next conference which will be in Ouro Preto, State of Minas Gerais from 24 to 28 October, 2021.

Acknowledgement: We thank Journal of Renewable Materials for their support in publishing this special issue and the organizers of the 15th Brazilian Polymer Conference.

Funding Statement: Authors thanks to FAPESP, CNPq and CAPES for funding the 15th Brazilian Polymer Conference.

Conflicts of Interest: The authors declare that they have no conflicts of interest to report regarding the present study.

References

1. Bianchi, O., Fajardo, A. R., Canto, L. B. (2019). 15th Brazilian Polymer Conference–15th CBPol Bento Gonçalves, RS. *Polímeros*, 29(4), E7–E15.
2. Camargo, M. F., Machado, N. M. P., Melo, G. C., Feijó, G. G., Puton, B. M. S. et al. (2020). Melt extrusion of environmentally friendly poly(L-lactic acid)/sodium metabisulfite films for antimicrobial packaging applications. *Journal of Renewable Materials*, 9(2), 337–349. DOI 10.32604/jrm.2021.011081.
3. de Souza, G., Kramer, R. K., Carvalho, A. J. F. (2020). Urethane modified hydrophobic compact wood pulp paper for oil spill cleanup. *Journal of Renewable Materials*, 8(10), 1257–1268.
4. Almeida, J. L. I. O., Junior, R. N. L., Abreu, F. O. M. S., Andrade, J. (2020). Chitosan and carboxymethylchitosan as high turbidity water biocoagulants. *Journal of Renewable Materials*, 8(11), 1489–1504. DOI 10.32604/jrm.2020.011629.
5. Mundim, P. B., Ferreira, R. A. R., Motta, L. A. C., Henrique, M. A., Pasquini, D. (2020). Study of the superficial modification of sisal fibers with lignin, and its use as a reinforcement agent in cementitious composites. *Journal of Renewable Materials*, 8(8), 891–903. DOI 10.32604/jrm.2020.010655.
6. Reichert, A. A., de Sá, M. R., Silva, G. E., Beatrice, C. A., Fajardo, A. R. et al. (2020). Utilization of pineapple crown fiber and recycled polypropylene for production of sustainable composites. *Journal of Renewable Materials*, 8(10), 1327–1341.