



Editorial

## Editorial for "Materials Chemistry" Sections on *Molecules*

## Assunta Marrocchi †

Department of Chemistry, Biology and Biotechnology, University of Perugia, via Elce di Sotto 8, 06123 Perugia, Italy; assunta.marrocchi@unipg.it

† Section Editorial Board of Materials Chemistry Section on Molecules.

Received: 30 November 2020; Accepted: 2 December 2020; Published: 10 December 2020



Materials chemistry has been one of the most talked-about areas of materials research over the past decades. Spanning from polymers and composites to metallic, ceramic, and hybrid materials, as well as nano- and micromaterials, chemistry is unique in creating diverse arrays of new materials for applications in catalysis, energy conversion and storage, advanced electronics, environmental devices, drug delivery, smart textiles, packaging systems, or scaffolding for tissue engineering—to name but a few, with potential broad scientific and societal impact.

At the same time, matching materials and sustainability is becoming crucial, as a result of ever more stringent regulatory requirements in the European Union, North America and developed Asian countries [1–4]. These regulations have driven the development of new, eco-efficient and safe materials and technologies, following the principles of green chemistry [5] and green chemical engineering [6], to achieve enhanced functionality and environmental benefits.

Special importance is being attributed to the efficient use of the starting materials for obtaining the desired functional final products, while avoiding waste and the use of toxic substances, minimising the need for energy and using renewable resources [7–10]. As a potentially more sustainable alternative to conventional materials, for example, several bio-based materials and products have been introduced in the past few years in many areas, from agriculture to electronics, clothing or packaging [9,11–14]. Many sustainability-related education programmes have been introduced in undergraduate curricula to meet the ever-growing demand for green jobs in a large number of sectors, including the materials sector [15].

A selection of cutting-edge "Hot Papers" in the field of renewable materials, published in the Materials Chemistry Sector of *Molecules*, is reported in the Reference section of this Editorial [16–25].

The target of the "Materials Chemistry" Section in *Molecules* is to provide an open-access publishing platform for the effective dissemination of high-quality scientific outputs at the core of research on Materials Chemistry. The Section invites papers related to either experimental or theoretical studies about synthesis, properties, characterization, and application of materials in the widest sense (i.e., organics and inorganics, including—but not limited to—nanomaterials, hybrids, biomaterials, self-assembling systems of biologic and synthetic nature, thin-films).

What are the benefits of publishing in the "Materials Chemistry" Section of *Molecules*? Discoverability, to begin with. Open access, indeed, translates into wider readership, greater visibility and increased citations; moreover, the Editorial Team of Molecules ensures online dissemination through social media tools, to maximize the visibility of the published research. Next, the Journal is associated with a favorable and constantly increasing impact factor (3.267). Furthermore, the committment of the Journal to the peer-review process ensures the high quality of the article accepted and a very efficient timeline.

Materials Chemistry is experiencing a paradigm shift from traditional production technologies and practices to one that assigns value to the replacement of fossil fuels with renewable resources,

Molecules **2020**, 25, 5833 2 of 3

waste minimization, and avoiding the use of substances that pose serious risk to human health and the environment. In this context, the prospect for research on alternative feedstocks, environmentally benign reagents, solvents, and catalysts, and safer and more readily recyclable products, as well as non-persistent, non-bioaccumulative, eco-compatible materials, looks exciting. We hope you will consider submitting your materials' chemistry-related manuscripts to *Molecules*. Please also note that, in doing this, the "Materials Chemistry" Section should be selected from the drop-down menu.

Funding: This research received no external funding.

Conflicts of Interest: The author declares no conflict of interest.

## References

 EUR-Lex. Available online: https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:02006R1907-20180509&from=EN (accessed on 29 November 2020).

- 2. Public Law 114–182—June 22, 2016 Frank R. Lautenberg Chemical Safety for the 21st Century Act. Available online: https://www.congress.gov/114/plaws/publ182/PLAW-114publ182.pdf (accessed on 29 November 2020).
- 3. Summary of the Toxic Substances Control Act. Available online: https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act (accessed on 29 November 2020).
- 4. Ha, S.; Seidle, T.; Lim, K.-M. Act on the Registration and Evaluation of Chemicals (K-REACH) and replacement, reduction or refinement best practices. *Environ. Health Toxicol.* **2016**, *31*, e2016026. [CrossRef] [PubMed]
- 5. Anastas, P.; Eghbali, N. Green Chemistry: Principles and Practice. *Chem. Soc. Rev.* **2010**, *39*, 301–312. [CrossRef] [PubMed]
- Anastas, P.T.; Zimmerman, J.B. Design through the Twelve Principles of Green Engineering. *Environ. Sci. Tech.* 2003, 37, 94A–101A. [CrossRef] [PubMed]
- 7. Marrocchi, A.; Facchetti, A.; Lanari, D.; Petrucci, C.; Vaccaro, L. Current methodologies for a sustainable approach to *π*-conjugated semiconductors. *Energy Environ. Sci.* **2016**, *9*, 763–786. [CrossRef]
- 8. Prat, D.; Wells, A.; Hayler, J.; Sneddon, H.; McElroy, C.R.; Abou-Shehada, S.; Dunn, P.J. CHEM21 selection guide of classical- and less classical-solvents. *Green Chem.* **2016**, *18*, 288–296. [CrossRef]
- 9. Irimia-Vladu, M.; Glowacki, E.D.; Sariciftci, N.S.; Bauer, S. *Green Materials for Electronics*; Wiley-VCH Verlag GmbH & Co.: Hoboken, NJ, USA, 2018.
- 10. Ahmed, S.; Hussain, C.M. (Eds.) *Green and Sustainable Advanced Materials*; Wiley: Hoboken, NJ, USA, 2018; Volume 1–2.
- 11. Pacheco-Torgal, F.; Ivanov, V.; Tsang, D.C.W. (Eds.) *Bio-Based Materials and Biotechnologies for Eco-Efficient Construction*; Woodhead Publishing: Cambridge, UK, 2020.
- 12. Bettenhausen, C. Eastman and DuPont blend biobased fibers. Chem. Eng. News 2020, 98, 10. [CrossRef]
- 13. Maraveas, C. The sustainability of plastic nets in agriculture. Sustainability 2020, 12, 3625. [CrossRef]
- 14. Sapuan, S.M.; Ilyas, R.A. *Biobased Packaging: Material, Environmental and Economic Aspects*; Wiley Series in Renewable Resource; Wiley: Hoboken, NJ, USA, 2021.
- 15. Green Economy Could Create 24 Million New Jobs. Available online: https://www.un.org/sustainabledevelopment/blog/2019/04/green-economy-could-create-24-million-new-jobs/ (accessed on 29 November 2020).
- Sag, J.; Goedderz, D.; Kukla, P.; Greiner, L.; Schönberger, F.; Döring, M. Phosphorus-Containing Flame Retardants from Biobased Chemicals and Their Application in Polyesters and Epoxy Resins. *Molecules* 2019, 24, 3746. [CrossRef] [PubMed]
- 17. Ecochard, Y.; Decostanzi, M.; Negrell, C.; Sonnier, R.; Caillol, S. Cardanol and Eugenol Based Flame Retardant Epoxy Monomers for Thermostable Networks. *Molecules* **2019**, 24, 1818. [CrossRef] [PubMed]
- 18. Becerril, R.; Nerín, C.; Silva, F. Encapsulation Systems for Antimicrobial Food Packaging Components: An Update by Raquel Becerril, Cristina Nerín and Filomena Silva. *Molecules* **2020**, *25*, 1134. [CrossRef] [PubMed]
- 19. Markwart, J.C.; Battig, A.; Velencoso, M.M.; Pollok, D.; Schartel, B.; Wurm, F.R. Aromatic vs. Aliphatic Hyperbranched Polyphosphoesters as Flame Retardants in Epoxy Resins. *Molecules* **2019**, *24*, 3901. [CrossRef] [PubMed]

Molecules **2020**, 25, 5833

20. Ahmad, Z.; al Dajani, W.W.; Paleologou, M.; Xu, C. Sustainable Process for the Depolymerization/Oxidation of Softwood and Hardwood Kraft Lignins Using Hydrogen Peroxide under Ambient Conditions. *Molecules* **2020**, 25, 2329. [CrossRef] [PubMed]

- 21. Chung, Y.-H.; Pan, G.-T.; Hong, Z.-Y.; Hsu, C.-T.; Thomas, S.-C.; Yang, C.-K.; Huang, C.-M. Biomass-Derived Porous Carbons Derived from Soybean Residues for High Performance Solid State Supercapacitors. *Molecules* **2020**, *25*, 4050. [CrossRef]
- 22. Grząbka-Zasadzińska, A.; Klapiszewski, Ł.; Jesionowski, T.; Borysiak, S. Functional MgO–Lignin Hybrids and Their Application as Fillers for Polypropylene Composites. *Molecules* **2020**, *25*, 864. [CrossRef] [PubMed]
- 23. Morais, E.S.; da Costa Lopes, A.M.; Freire, M.G.; Freire, C.S.R.; Coutinho, J.A.P.; Silvestre, A.J.D. Use of Ionic Liquids and Deep Eutectic Solvents in Polysaccharides Dissolution and Extraction Processes towards Sustainable Biomass Valorization. *Molecules* 2020, 25, 3652. [CrossRef] [PubMed]
- 24. Nnadozie, E.C.; Ajibade, P.A. Multifunctional Magnetic Oxide Nanoparticle (MNP) Core-Shell: Review of Synthesis, Structural Studies and Application for Wastewater Treatment. *Molecules* **2020**, 25, 4110. [CrossRef] [PubMed]
- 25. Vaičiukynienė, D.; Nizevičienė, D.; Mikelionienė, A.; Radzevičius, A. Utilization of ZeoliticWaste in Alkali-Activated Biomass Bottom Ash Blends. *Molecules* **2020**, *25*, 3053. [CrossRef]

**Publisher's Note:** MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



© 2020 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).