

Special Issue

Biolubricants: Synthesis, Properties, Applications and Future Prospects

Message from the Guest Editor

With the continuous promotion of green, low-carbon, and circular-development economic systems, energy conservation, environmental protection, low carbon usage, and efficiency have become new requirements that various industries must meet, and the lubricant industry is no exception. Currently, lubricants are mainly made of mineral oil which leads to a significant amount of oil leakage and discharge into the environment. Mineral oil lubricants have poor biodegradability and can accumulate in soil and water, causing pollution. Waste mineral oil contains harmful pollutants, including volatile organic compounds and heavy metals. Biolubricants made from vegetable oils are a sustainable solution that can meet the needs of various industries without harming the environment. Many countries have prioritized the development and research of biolubricants to address environmental concerns. More research is needed to understand the performance mechanisms despite efforts. Therefore, this Special Issue aims to introduce the latest developments in biolubricants and reveal the mechanism by which biolubricants improve anti-friction and wear reduction performance.

Guest Editor

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Message from the Editorial Board

Now more than ever, research is asked to deliver knowledge and technologies to solve the major challenges faced by our society. The development of new materials and devices for (without the ambition to be exhaustive) energy, health and food technology, together with the need for establishing processes that reduce the impact on critical resources and the environment, is indeed in the spotlight of most contemporary research. Surface science and engineering play a key role in this regard, with an incredible potential in delivering new and deep scientific understanding and technical solutions essential to solve most of the major societal challenges.

Coatings is a well-established, peerreviewed, online journal dedicated to the vibrant field of surface science and engineering. Coatings publishes original research articles that report cutting-edge results and review papers that make the point on the hottest research topics.

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