Special Issue

Multi-Functional Liquid-Repellent Coatings: Innovative Approaches for Protecting Surfaces

Message from the Guest Editors

The demand for anti-liquid intrusion technology is increasing globally across diverse applications. From consumer electronics (mobile phones, televisions, audio equipment) to transportation systems (automobiles, ships) and building infrastructure, effective liquid intrusion prevention technology has become critical for product reliability and longevity. However, traditional methods for preventing liquid intrusion often face challenges, including complex fabrication processes, inadequate interfacial adhesion between coatings and substrates, and limited durability. This Special Issue aims to advance the science and engineering of liquid-repellent coatings through cutting-edge research in three key areas: Novel preparation technologies (additive manufacturing, thermal spraying, laser/plasma surface modification, chemical vapor deposition, etc.); Performance characterization (hydrophobicity, chemical resistance, abrasion resilience, high-temperature stability, extreme environmental adaptability, etc.); Coating durability (computational modeling of failure mechanisms, accelerated aging tests, in-service performance prediction, etc.).

Guest Editors

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Deadline for manuscript submissions

15 March 2026

Coatings

an Open Access Journal by MDPI

Impact Factor 2.8
CiteScore 5.4

mdpi.com/si/239920

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About the Journal

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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