

Self-Healing Organic-Inorganic Coatings

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Message from the Guest Editors

Hybrid coatings provided outstanding metallic protection in extreme environments for combining features of organic and inorganic materials that not only result in a remarkable barrier but also in improved mechanical, thermal, chemical and adhesion properties. In recent decades, the development of self-healing materials has added the possibility to regenerate hybrid coatings after failure, extending their service life. Driven by the current applications of smart materials, the design of self-healing organic–inorganic coatings must maintain their structural integrity without compromising barrier and adhesion properties. To this end, the unlimited possibilities for the design, synthesis, testing, and applications of high-performance anti-corrosion materials support this SI to host papers in the following scope:

- Methods to synthesize self-healing coatings
- Smart ecofriendly coatings for corrosion protection
- Green materials for effective corrosion inhibition
- New organic–inorganic systems for protection of metallic alloys
- Water uptake calculations, prediction of performance and durability of hybrid coatings in extreme environments
- Self-healing mechanisms



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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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