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Smart Polymeric Coatings for Corrosion Mitigation

Guest Editor:

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Deadline for manuscript submissions:
closed (31 December 2023)

Message from the Guest Editor

Dear Colleagues,

Over the last two decades, interest has been growing in applying "smart coatings" in protecting against metal corrosion, owing to their capability of responding to a broad spectrum of environmental stimuli on demand, including temperature, pH, aggressive ions, heat, light, or mechanical stress. Polymers with diverse and tailorable functional groups are the perfect materials for such a purpose and therefore have been extensively explored. Organic or inorganic corrosion inhibitors are often embedded into the polymeric coating substrate either by direct dispersion or encapsulation, thereby allowing the metal substrate to self-heal upon corrosion damage. However, several challenges still exist in this actively developing area. Therefore, the purpose of this Special Issue is to collect high-quality research or review articles focusing on smart polymeric coatings for corrosion mediation. We encourage researchers to publish their articles in this journal, providing their novel solutions to developing novel polymeric coatings and addressing some of the existing challenges.

We look forward to receiving your contributions.

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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.

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