

Mechanical Properties of Advanced Multifunctional Coatings

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Message from the Guest Editors

Advanced multifunctional coatings have been widely used in different fields, such as aeronautics, transportation, biomedicine, electrical and electronic equipment, etc., due to the great and unpredicted progress in their synthesis, characterization, and properties. Mechanical properties are key to how advanced multifunctional coatings interact with external forces and environmental factors. An in-depth understanding of mechanical properties of these coatings, however, still requires complex material modeling and characterization tools. This Special Issue aims to present the latest findings and to promote further research in the areas of mechanical behaviors of advanced multifunctional coatings, including experimental characterization and theoretical calculations.

Potential topics:

- Advanced multifunctional coatings in mechatronics;
- Advanced characterization methods and tools;
- Advanced coatings for preparation and applications;
- Numerical simulations and computational modeling, including FEM/XFEM, MD, MC, DFT, etc.;
- Theoretical studies;
- Design and synthesis strategies affecting mechanical behaviors;
- Industrial case studies.



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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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