Special Issue

Nanodiamond Hybrid Materials: Synthesis and Application

Message from the Guest Editors

The discipline of surface engineering includes a broad spectrum of techniques, which can be used to functionalize surfaces and develop a wide range of physical or chemical properties. There are plenty of applications for functionalized surfaces in the automotive, aerospace, power. This Special Issue will focus on surface engineering approaches to changing material functionalities. Nanodiamonds, due to the susceptibility to modification of their surface, are used in industrial lubricants, polishing, composite, galvanochemical coatings, metal, polymer-based composites, drug delivery, and catalysis and can be used as sensors or carriers of active substances with specific biological or biochemical properties. Functionalized nanodiamonds are also used as cross-linkers or kinetic chain carriers in polymer synthesis. This allows obtaining refined plastics for special applications as well as smart materials with self-healing properties. Nanodiamond contributes to the reinforcement of mechanical properties of polymer and ceramic composites. The abovementioned applications can be used in thin film coatings on utility materials to improve their properties or give them completely new ones.

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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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