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Polydopamine Nanomaterials: Synthesis and Applications

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Message from the Guest Editors

Dear Colleagues,

In the last ten years, polydopamine and similar materials produced from the oxidation of catecholamines have revolutionized surface science as versatile coatings able to coat the surface of any kind of material with a conformal and easy-to-functionalize coating. However, the chemistry leading to such coatings of controllable thickness and wettability, tuned by the nature of the used oxidant and the reaction time, also occurs in solution, leading to a huge loss of material in the form of an insoluble and useless precipitate. Owing to the eumelanin-like properties of polydopamine, recent efforts were devoted to control the self-assembly pathway(s) leading to a variety of applications ranging from a solar thermal fluid dopant to a suitable building block material for theranostic systems. Even though the polydopamine field has successfully produced a variety of applications, many aspects of its fundamental properties, as well as additional appliances, remain a subject of active investigation. This Special Issue aims to cover the fundamental aspects as well as the applications of such bio-inspired, easy-to-produce nanomaterials.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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