

Special Issue

Nanostructured Adsorbents for Environmental Remediation

Message from the Guest Editors

Water is the most important substance for the development of life. However, due to increasing industrialization, different pollutants are inappropriately released into water resources, causing damage to human health. Nanotechnology, known for the unique excellent physicochemical properties of nanomaterials, represents a technology applied in different areas of environmental pollution, where adsorbent nanomaterials are materials with at least one dimension smaller than 100 nm. Nanostructured adsorbents used for the treatment of environmental pollution are graphene, nanohydrogels, carbon nanotubes, silver nanoparticles, ZnO nanoparticles, TiO₂ nanoparticles, nanofiber materials, nano-zerovalent iron (nZVI) and NF membrane materials; they are very beneficial for the remediation of water pollution. On the other hand, computational chemistry allows for the analysis and identification of materials for the adsorption of different contaminants. For example, obtaining free energy using density functional theory or semi-empirical models allows for determining the capacity of an adsorbent towards a contaminant, as well as identifying the adsorption mechanism and the interactions present.

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