Nanomaterials for Chemosensor Development & Water Purification

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Abstract: The challenge for this century lies in cleaning-up the waste generated during industrial, domestic and agricultural activities. Water pollution is undoubtedly one of the major problems faced by the world today. Advances in nanoscale science and engineering suggest that many of the current problems involving water quality can be resolved using nanosorbents, nanocatalysts, bioactive nanoparticles, nanostructured catalytic membranes and nanoparticle enhanced filtration among other products resulting from the development of nanotechnology. Nanomaterials can also be functionalized with various chemical groups to increase their affinity toward some sets of pollutants. They can also serve as high capacity and recyclable ligands for toxic metal ions, radionuclides, organic and inorganic solutes/anions in aqueous solutions. This presentation will highlight the application of nanomaterials as critical components for purification and to monitor the quality of industrial and public water supply.