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Highly selective sensing of nitroaromatics using nanomaterials of ellagic acid

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We report the synthesis, characterization, and application of nanobelts and nanowires of ellagic acid for sensing nitroaromatics. The nanostructures are composed of aggregated ellagic acids that are held together by hydrogen bonds and π-π interactions. The molecules are oriented with their long axis perpendicular to the nanowire or nanobelt and the π-π stacking direction parallel to the longitudinal axis of the wire or belt. Both the conductivity and fluorescence of the nanobelts change selectively in the presence of vapor of nitrobenzene, a representative nitroaromatic compound, suggesting the nanobelt of ellagic acid may be used for selective detection of explosives.

Biography

Hai-Feng Ji did a postdoctoral research at Department of Chemistry, the University of Florida, after earning his PhD in Chemistry Chinese Academy of Sciences. He has authored about 100 research publications that include 5 book chapters review articles.

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