Recent developments in the functionalisation strategies of carbon based nanostructures and their role in electrochemical energy storage

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In the frame of this talk, novel concepts for the functionalisation of carbon based nanomaterials such as, 1D carbon nanotubes and 2D graphene nanosheets with various polymer heterostructures will be presented. I will also discuss the applicability of carbon nanostructures in creating novel nanostructured matrices exhibiting superior properties. The morphologies of these nanostructures and various associated properties of the composites that were scrutinized will also be presented. Investigations on the preparations of metal free graphene nanosheets and their importance will be highlighted.

Additionally, unique means for the fabrication of metal nanoparticles and functionalisation on the surfaces that include gold and quantum dot heterostructures will be presented. These new types of nanocomposites should be more interesting and promising because; the three-component systems could combine together the individual properties of each material, as well as the noble metal nanoparticles. The discussions will show that carbon nanomaterial's can be effectively used to fabricate various nanoscale topographies, which in turn opens a gateway to achieving periodically functionalized structures for a variety of applications including energy storage and conversion.

References:

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