

α -Phase organic/inorganic layered nanohybrids, types, structures and their application as the precursors for producing carbon materials for use as polymeric fuel cell cathode materials

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The α -phase metal hydroxides are layered materials with positively charged layers formed solely with divalent cations in the brucite-like structure. These layered hydroxides are important materials owing to their ability to intercalate various organic/inorganic functional anions to produce layer by layer nanohybrids. This leads to the production of the materials with new physico-chemical properties when combined with the appropriate guest species to be used in diverse technological applications. Moreover, α -phase layered hydroxides and their nanohybrids are suitable precursors to obtain two-dimensional nanostructures of pure and doped metal oxides, metallic alloys, carbon materials as well as metal oxide/carbon composites.

This present deals with a short description of structures, properties and applications of α -phase metal hydroxides and their nanohybrids. Moreover, in particular, carbon materials produced by heat-treatment of an organic/inorganic nanohybrid, namely Ni/Co/Fe doped zinc hydroxide-nitro benzoate/gallate to be used as polymeric fuel cell cathode materials is addressed here.

Biography

Mohammad Yeganeh Ghotbi has completed his Ph.D. in the field of Nanomaterials and Nanotechnology (Department of Advanced Materials, Institute of Advanced Technology (ITMA), UPM, Malaysia). He has published more than 18 papers in reputed journals, 5 patents and 1 book chapter in Nova Science Publishers, New York, 2012. He has also been as an Organizing Committee Member (EMN Fall Meeting, Nevada, USA, 2012), Guest Editor (Journal of Chemistry) and Technical Advisory Member (The 2nd international conference on fundamental and applied sciences ISFAS (UTP), Malaysia, 2012).

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