



PMSE 157: Synthesis of core-shell halloysite-chalcogenides based nanocomposites and its application in photocatalysis

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Body

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Halloysite is a nanomaterial that appear in nature in a form of aluminosilicate nanotubes. Tubular structure of the halloysite makes it an interesting template for a formation of core-shell structures. A few core-shell architectural strategies are available: 1. pristine halloysite based structures; 2. selective loading of the core into lumens with an aluminosilicate shell; 3. nonselective loading of agent inside/outside nanotubes. Fast and practical synthesis methods could be applied such as simple impregnation or vacuum loading, organic ligand assisted synthesis and others. We have developed materials with the halloysite shell and metal selenides and sulfides core, as well as the chalcogenides containing shell (CdS, FeSe, ZnS, InS) and halloysite core as well as multishell systems. Immobilization onto the solid support increases the stability of nanoparticles and limits its aggregation. The obtained halloysite based composites serves as inorganic pigments, optical markers for biomedical studies, and photocatalysts.

Sessions



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Monday, Mar 19 10:40 AM

Studio 9, New Orleans Marriott Canal Street

(/acsnola2018/event/1ad8094c93e26b609b420b33634aba0f)