

Abstract Submitted
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PNIPAM grafting on the surface of zirconium phosphate HAI LI, XUEZHEN WANG, ZHENG DONG CHENG, Texas A&M Univ, DR.CHENG'S GROUP TEAM — We are reporting for the first time the grafting of the thermoresponsive polymer PNIPAM (poly n-isopropylacrylamide) on the surface of inorganic nanoplates zirconium phosphate. Particularly, the grafting on inorganic nanoplates using gamma rays has never scarcely been reported and yet proved to be successful in our synthesis. We proved that by gamma ray irradiation, the peroxide groups has been produced on the ZrP particles since that peroxide groups, on the surface of the hexagonal nanoplates, which upon heating initiated the free radical polymerization and subsequent attachment of PNIPAM. The presence of covalent band between ZrP and PNIPAM were observed and characterized by TGA, FTIR and solid state NMR respectively. The attachment of a thermoresponsive polymer to ZrP nanocrystals brings thus remarkable possibilities for their employment in the fields of medicine, oil industry, as well as physics.

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