

Synthesis of polymeric organic-inorganic hybrid materials. Partially deacetylated chitin-silica hybrid

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This work reports the synthesis of a novel polymeric organic-inorganic hybrid. The inorganic component is a silica network obtained by controlled hydrolysis of tetraethyl orthosilicate via sol-gel process and the organic counterpart is partially deacetylated chitin (CHI). The resulting polymer hybrids were homogeneous transparent film forming glassy materials being compatible through a wide composition range. Simultaneous thermal analysis of a CHI/silica 1:1 mixture confirms the intermolecular complex formation between organic and inorganic polymers.