

Novel hyper branched polyaniline nanocomposites with manganese and/or manganese/zinc

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Novel hyper branched poly aniline/manganese (PANI/Mn) and poly aniline/manganese/zinc (PANI/Mn/Zn) nanocomposites have been successfully prepared. Aniline monomer has been polymerized in presence of Mn²⁺ and/or Mn²⁺/Zn²⁺ ions under high shearing effect homogenizer at 10000 rpm. The prepared nanocomposites have been characterized via scanning electron microscopy SEM, transmission electron microscopy TEM, UV-Visible spectrometry UV-VIS, gel permeation chromatography GPC, Fourier transform infrared spectroscopy FT-IR and thermo gravimetric

analysis TGA. The morphological studies revealed that the nanocomposites are highly branched and dendritic. The Ac conductivity measurements as well as optical properties of the prepared nanocomposites have been also investigated. The ac conductivity measurements showed that the conductivity of the prepared nanocomposites are frequency dependent and follow up hopping conduction mechanism. As far as we know, this novel highly branched PANI nanocomposites have not been reported yet in the open literature.

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