

## Conductive Clay Nanocomposite Using Smectite and Poly(O-Anisidine)

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**Abstract :** In this study, Na-smectite crystals purified of bentonite were used after being swelling with benzyltributylammonium bromide (BTBAB) as alkyl ammonium salt. Swelling process was carried out using 0.2 g of BTBAB for smectite of 0.8 g with 4 h of mixing time after investigated conditions such as mixing time, the swelling agent amount. Then, the conductive poly(o-anisidine) (POA)/smectite nanocomposite was prepared in the presence of swollen Na-smectite using ammonium persulfate (APS) as oxidant in aqueous acidic medium. The POA content and conductivity of the prepared nanocomposite were systematically investigated as a function of polymerization conditions such as the treatment time of swollen smectite in monomer solution and o-anisidine/APS mol ratio. POA/smectite nanocomposite was characterized by XRD, FTIR and SEM techniques and was compared separately with components of composite.

**Keywords :** clay, composite, conducting polymer, poly(o-anisidine)

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