

Synthesis, Characterization and DC Conductivity Studies of CaCl_2 -PEO Doped Polyaniline Complexes

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Abstract: *The polymer electrolyte based on polyethylene oxide (PEO) complexes with conducting Polyaniline (PANI) and Cobalt Chloride (CoCl_2) has been prepared in different weight percentage (wt%) by in situ polymerization method. The complexation is characterized by X-ray diffractometry (XRD) and scanning electron microscopy (SEM), which confirmed the presence of polyethylene oxide complexes with conducting Polyaniline and Cobalt Chloride salt. DC conductivity studies show thermally activated behavior of all the composites. The conductivity was found to increase with the increase in temperature indicating the semiconducting behavior of all the complexes. Maximum conductivity was observed in 30 wt% of Cobalt Chloride salt complexes with conducting Polyaniline and polyethylene oxide.*

Keywords: Polyaniline, Cobalt Chloride salt, Polyethylene oxide, complexes, DC conductivity

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