

### Electrical Properties of Poly(ethylene oxide) Blend with Acid-doped Polyaniline

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Conducting polymer blends or composites have been investigated because of potential applications in batteries, capacitors, electrochromic devices, sensors, and antistatic materials. To improve the processability of polyaniline (PANI), it can be made solubly in organic solvent by using a CSA (10-camphor sulfonic acid) or DBSA (dodecylbenzene sulfonic acid) as a functionalized doping acid having a bulky volume. PANI/PEO blend solution is prepared by dissolving PEO and PANI doped with CSA or DBSA as a functionalized doping acid. From this solution, the preparation of conducting polymer blend films or fibers can be possible. The electrical and the thermal properties of blends are investigated as a function of PANI content or doping acid content. As the PANI-CSA content increases, the mass decrease at 250°C becomes larger of TGA graphs. The decrease can be related with loss of CSA doping acid from PANI-CSA and the intensities of peak at 19° and 23° show an increase as the PANI-CSA content increases from 9% to 30% of XRD patterns. From this result, it can be concluded that the chain orientation of blend fibers is improved by incorporating linear and rigid PANI polymer.