**Study the structural properties and electrical conductivity of the epoxy/polyaniline composites**

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**Abstract**

In this study, pure samples of epoxy doped with Polyaniline (PANI) were prepared and studied. The casting method was employed to prepare the samples with different doped ratios of PANI (1, 2, 3 %wt) and the morphological, structural and electrical properties of the prepared samples were examined. The field-emission scanning electron microscope FE-SEM images revealed that the doping of PANI improves the morphology of the samples by reducing the cracks in the surface of the samples, while the X-ray diffraction spectra showed that the samples are all polycrystalline and that the crystal structure enhances by increasing the percentage of PANI in samples. The functional groups and bonds were confirmed through infrared spectra examinations FT-IR in the range of 400-4000 cm-1. The electrical tests represented by the D.C conductivity demonstrated an increase in conductivity with an increase in PANI doping, where its value was 1.34E-9 for pure epoxy sample and increases up to 3.44E-9 for samples doped with 3%wt PANI.