

## Synthesis and Characterization of Polyaniline-Carbon

### Fiber Composites

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In this work, we synthesized a strategy for uniform coating of polyaniline on carbon fiber for their potential use in various fields.  $\beta$ -Naphthalenesulphonic acid ( $\beta$ -NSA) was used as surfactant and dopant which offers the uniform coating on Carbon fiber. Polyaniline (PANI)-Carbon fiber composites have been prepared by chemical oxidative polymerization route whose conductivity lies in the range 10.73–23.5S/cm. The TEM analysis of composites reveals the presence of thick and uniform coating of PANI over surface of carbon fiber. The SEM of PANI- carbon fiber also revealed the nonporouscoating, which can be used for selective incorporation of other carbon forms. Morphology of PANI- carbon fiber shows the incorporation of carbon fiber in PANI matrix. Such planned conformally polymer coated carbon fiber could be a favourable candidate for next generation building block material in numerous applications.