

## **SYNTHESIZE AND CHARACTERIZATION OF GRAPHENE NANOMATERIALS FROM KRAFT LIGNIN**

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Renewable carbon source, wood pulping byproducts lignin was carbonized at 1000 °C for the preparation of carbon-based nanomaterials with using an iron-based catalyst. The multilayer graphene (MLG) was detected in the products using X-Ray Diffraction (XRD), scanning electron microscopy (SEM), and high-resolution transmission electron microscopy (HRTEM). The formation of graphene nanomaterials probably is related to iron catalytic graphitization of lignin at 1000 °C. This study indicates the wood pulping byproducts lignin can be used as a carbon source for the production of graphene nanomaterials and provides a new research and utilization for lignin.

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