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Extraction and Characterization of New Natural Fibre from *Adansonia Digitata* L Pod.

The environmental friendliness of some plant-derived fibre has driven research interest in material science and engineering because they can be a good substitute for products made from petroleum. This study investigated the extraction and characterization of baobab pod fibre and its potential in the reinforcement of polymer composites. The properties of the fibre were studied with Fourier transform infrared spectroscopy, X-ray diffraction (XRD), scanning electron microscopy (SEM) and thermogravimetric analyzer (TGA). Chemical composition analysis show that baobab pod fibre contains 53.2 % cellulose, 15.7 % hemicellulose, 26.1 % lignin, 3.7 % pectin and 1.3 % wax. The morphology of baobab pod fibre was analyzed using scanning electron microscope. Crystallinity index value of 53.06 % was obtained. The density, tensile strength, tensile modulus of fibre was measured as 0.65 g/cm³, 40.15 MPa and 2.68 GPa respectively. Thermal analysis showed that the onset and maximum degradation temperature as 225 °C and 330 °C. The results suggest baobab pod fibre could serve as substitute in natural fibre polymer reinforcement.