

Preparation of conductive carbon from softwood kraft lignin and its application

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Graphite is widely utilized not only as electric materials, such as conductive carbon and electrode of lithium-ion battery, but also hydrophobic industrial feedstocks. It can be produced by heating petroleum coke at extremely elevated temperature of more than 2000 °C. Such carbonaceous feedstock for graphite is nowadays called as “soft carbon”. On the other hand, the transformation of wood charcoal into graphite by simple heating is too hard, therefore, it is termed as “hard carbon”. We considered that char derived from wood components, cellulose and lignin, was also “hard carbon”. However, when softwood kraft lignin (SKL) was heated at more than 2500 °C, the resultant carbon was found to be a partially graphitized material, and to exhibit significantly high electrical conductivity. In this presentation, we will introduce an application of SKL-based conductive material to an electricity-storage device.