Competition Details: All Kerala Project Competition sponsored by IEEE/IA/IE/PELS Jt. Chapter (Industry Applications Society (IAS), Industrial Electronics Society (IES) and Power Electronics Society (PELS)) conducted by IEEE chapter of Jyothi Engineering College

Organic Capacitor From Water Hyacinth- Towards a Sustainable Green Economy

The rapid increase in use of inorganic substances for the production of capacitors leads to the great disposal problems and health issues for mankind. This research work proposes a cheap and renewable energy storage device with water hyacinth (WH) biomass as a better alternative. The WH is a troublesome aquatic weed and was converted into solid fraction via nanostructured carbon material (Graphene Oxide). The WH has excessive reproduction rate and is rich in cellulose, hemicellulose and lignin, it can potentially be employed as a proper carbon source. The WH has lignocellulose content, which constitute 48% hemicellulose as the major component, along with 20% cellulose and 3.5% lignin. For this reason, in order to break the lignocellulose bond, it is treated with Sodium hydroxide (NaOH) and Sodium Sulphide (Na_2S). The capacitance value measured from the organic capacitor was found to be satisfactory with varying composition of grapheme oxide. The capacitor derived from WH have excellent capacitance than the conventional paper capacitors. In future production of capacitor dielectric from WH will be economical and feasible.

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2nd Prize: Amount 10,000 Rs