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(57) Abstract :
The present disclosure relates to an electrochemical energy storage device and a process thereof. Transition metal sulphides are tried as a new type of electrode materials for supercapacitors and good performance. Cadmium doped CuS nanostructures are prepared via a sample hydrothermal process at 130Â° C. Nanocomposite of cadmium doped CuS are the focus of intensive study due to potential applications in diverse fields. The nanostructures are characterized by XRD, FTIR, SEM/ EDS and TEM. The XRD pattern reveals that the Cd nanoparticle incorporated CuS shows crystallite nature and the crystallinity increases with addition of cadmium on CuS. Electrochemical analysis is performed using a 2M KOH electrolyte in the technique called CV and EIS study. Cd-CuS exhibits hexagonal architecture and the specific capacitance is calculated as 458 F/g at 5mV/s scan rate. The high utility of pseudocapacitive Cd-CuS is achieved only in highest doping concentration of cadmium on CuS.

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