**Abstract**

 Indium tin oxide nano particles are synthesized via hydrothermal and ultrasonication methods. The XRD pattern confirms that the as-prepared Indium Tin oxide (ITO) nano particles consist of both In2O3 phase in cubic and rhombohedral structures and SnO2 phase in orthorhombic structure. The FTIR spectra of ITO nanoparticles show that two bands around 1590 cm-1 and 435 cm-1 are due to the presence of In-O bond in the compound. The peaks corresponding to SnO2 appear at lower frequency. The peaks at 550 and 660 cm-1are related to Sn-O-Sn antisymmetric stretching vibration and also a weak band around 470 cm-1 is due to the presence of symmetric vibration in the compound. The sample has moderate agglomerated nanoparticles which is flattened shaped structure. The synthesized samples are used as a negative electrode material for supercapacitor applications in three electrode configuration and the electrochemical properties of the ITO nano electrode is analyzed through cyclic voltammetry (CV) and Galvanostatic charge-discharge (GCD) measurements. From CV measurements, the sample synthesized via hydrothermal method seems to have better specific capacitance values than the samples from ultrasonication. The potential-time profiles measured from GCD measurements exhibit a good linearity, indicating a well-defined capacitive behavior of the ITO nano particle. The non-linear behavior of the curves explains the electrochemical reaction happens due to the redox mechanism and the pseudocapacitive nature of the electrode. It can be seen that the specific capacitance of ITO negative electrode maintains about 90% of its initial value after 5000 cycles, signifying a good stability of the compound.