Abstract Submitted
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High-Energy-Density Cost-Effective Graphene Supercapacitors VLADIMIR SAMUILOV, YING YING MU, NADER HEDAYAT, Department of Materials Science and Engineering, SUNYSB, VYACHESLAV SOLOVYOV, Graphene ESD, SENSOR CAT AT STONY BROOK TEAM — We introduce a cost-effective graphene platelet composite material as a replacement of an expensive reduced graphene oxide for electrodes in high energy density supercapacitors. We have tested a low size supercapacitor prototypes with the graphene platelets electrodes and newly developed polymer-gel Li+ ion electrolyte. We discuss the ways how to increase the capacitance and the energy densities of the supercapacitor significantly. A working prototype for testing the concept of the high voltage supercapacitor has been developed as well. The first test done up to 10 V showed excellent performance of the multy-cell multi-layer high voltage test assembly.

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