

# Preparation and performance of few layer graphene in energy storage applications

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In BASF, advanced carbon materials are being investigated for several potential fields of application such as electronics, catalysis, and energy storage and conversion devices. Graphene, one such advanced and emerging carbon material has recently spurred strong interest of scientific research both in academia and industry owing to its remarkable properties.

Owing to its higher electrical conductivity, few layer graphene (FLG) is proposed as a new carbon material to replace or complement traditional carbon black additives in lithium-ion batteries (LIB) as well as activated carbon in supercapacitor devices. Additionally FLG – silicon composite materials is proposed as potential anode material for LIB applications.

The presentation will focus on two aspects: (i) synthesis and characteristics of FLG and graphene oxide via electrochemical route and (ii) performance of FLG in supercapacitor and LIB devices. Finally the talk will present the challenges lie ahead for the commercialization of FLG to make it to reality in the near future.