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Microwave synthesis of graphene nickel aluminum layered double hydroxide (LDH)

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**Abstract content (Max 300 words)
Formatting &
Special chars**

Layered double hydroxide (LDH) with petal-like platelets structure has been produced via microwave irradiation reaction within 1-3 hours by hydrolysis of urea with homogeneous solution of Nickel nitrate and Aluminum nitrate. The feed ratio of the Ni and Al, microwave reaction power and time has been optimized. Pure crystalline Layered double hydroxide (LDH) structure was obtained for feed ratio of 2.0 and reaction power of 100 W with growth time of 1 hour. The structure obtained shows uniform and homogeneous size distribution with high crystallinity. The sample was functionalized with graphene foam and the samples were characterized by x-ray diffraction (XRD), scanning electron microscope (SEM) and Raman spectroscopy. The obtained LDH/graphene composite materials were tested as electrode for electrochemical capacitors and it demonstrate good capacitance behavior as potential candidate for energy storage applications.

**Apply to be
 considered for a student
 award (Yes / No)?**

yes

**Level for award
 (Hons, MSc,
 PhD)?**

MSc

**Main supervisor (name and email)
and his / her institution**

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**Would you like to
 submit a short paper
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 Proceedings (Yes / No)?**

no

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