Simple route for gram synthesis of less defective few layered graphene and its electrochemical performance†

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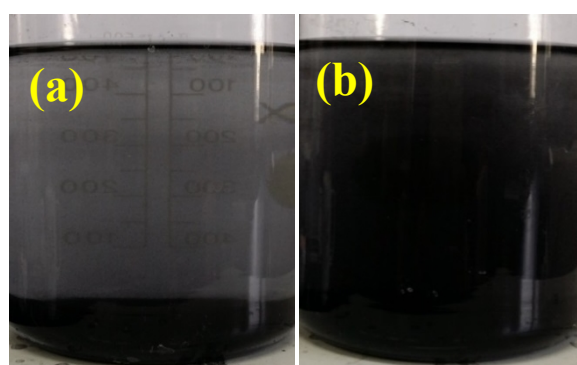**Digital photographs of gram synthesis of FLGN**

Fig. S1 (**a**) Exfoliated FLGN suspension at the bottom of electrolyte solution and (**b**) Dispersed FLGN in electrolyte solution.

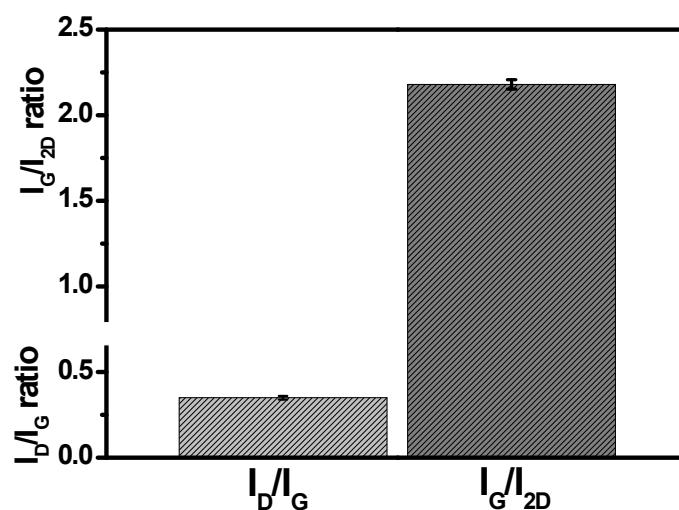**I_D/I_G and I_G/I_{2D} ratio bar graph of FLGN**

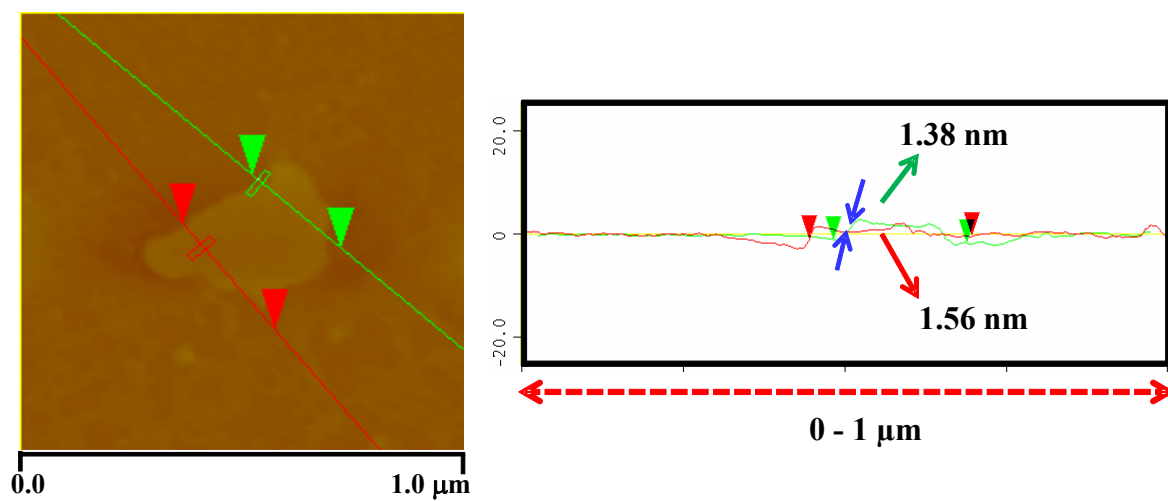**Fig. S2** I_D/I_G and I_G/I_{2D} ratio bar graph of FLGN.

AFM image of FLGN

1.38 nm

1.56 nm

0.0   1.0 μm

0 - 1 μm

Fig. S3 AFM image of FLGN.
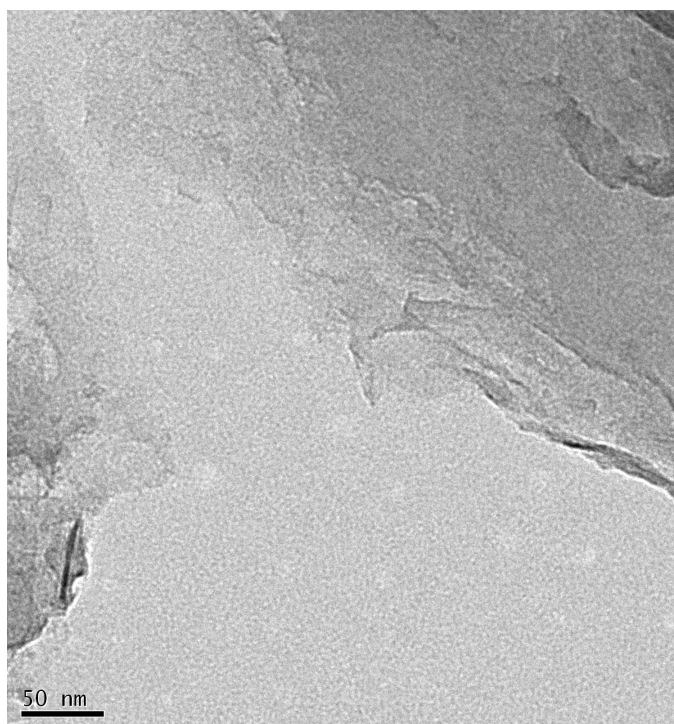
TEM image of FLGN

50 nm

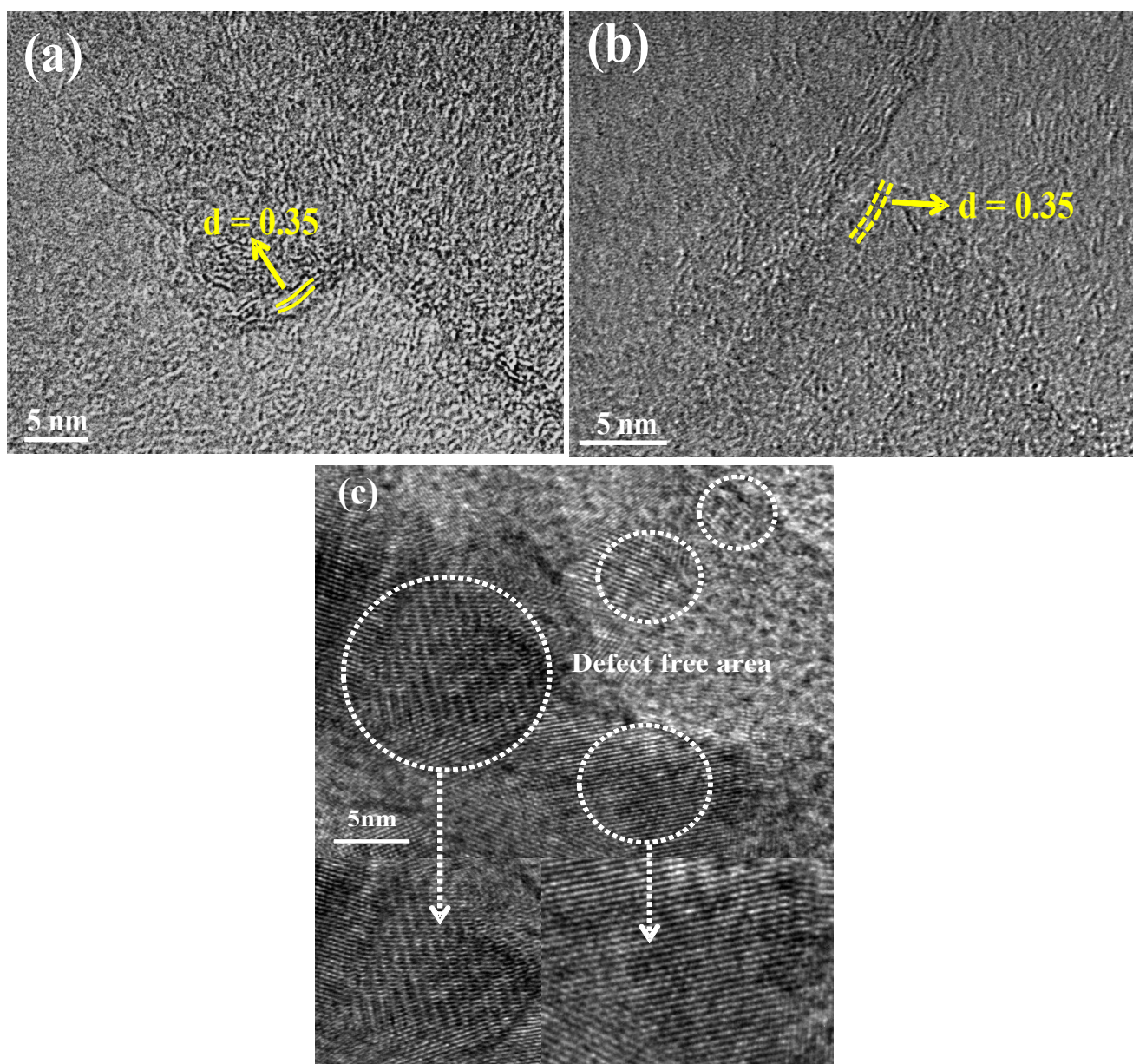**Fig. S4** TEM image of FLGN.

HRTEM images of FLGN

Fig. S5 HRTEM images of FLGN (**a, b** and **c**).

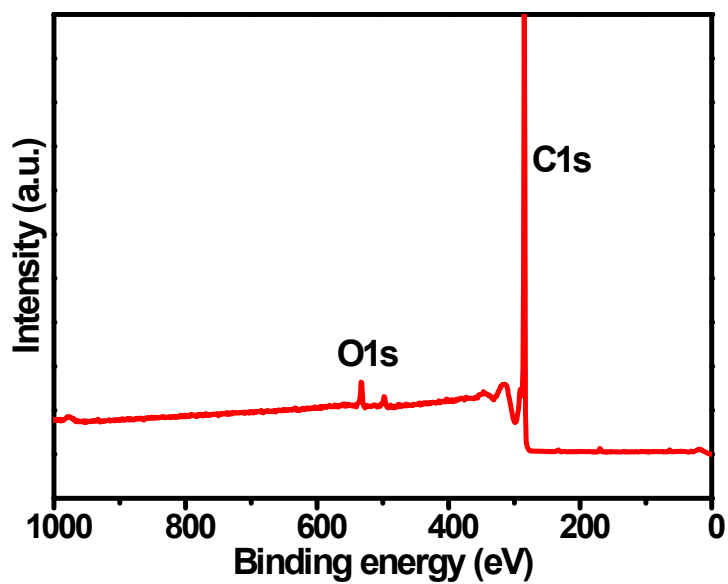**XPS survey spectra of FLGN**

Fig. S6 XPS survey spectra of FLGN.

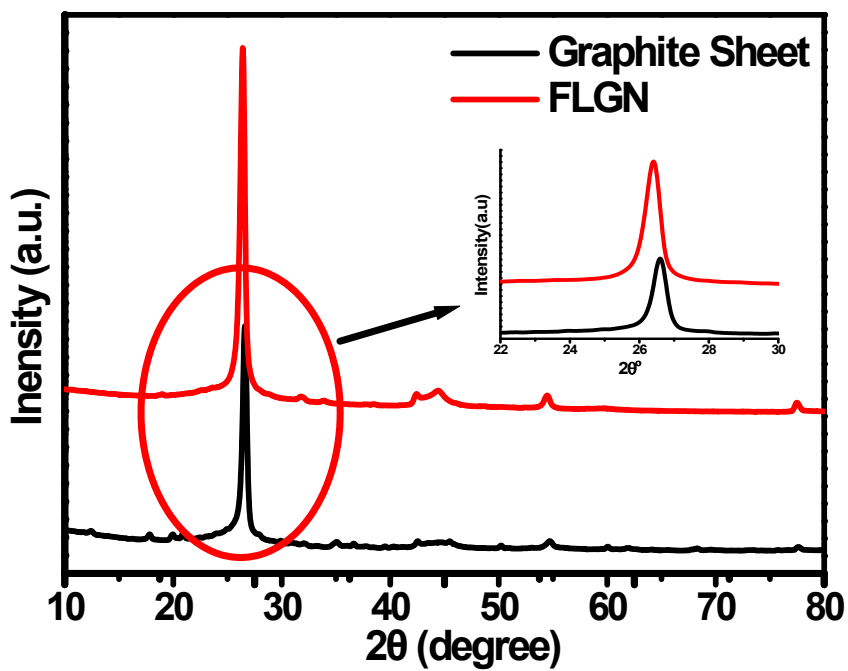**XRD pattern of graphite sheet and FLGN**

Fig. S7 XRD pattern of the FLGN.

Table S1: Summary of the inorganic salt based electrolytes investigated in the electrochemical exfoliation of graphite sheet

Electrolyte	Electrolyte concentration (M)	Voltage	Time	Results
$NaClO_4$	0.1	+10V	5 to 10 min	No exfoliation. (Intercalation of graphite electrode occurs)
NaOH	0.1	+10V	5 to 10 min	Poor exfoliation. (Product yield is very Low)
$Na_2S_2O_3$+ NaOH+ $NaClO_4$	0.1	+10V	3 to 5 min	Efficient exfoliation. (As described in the text)
NaOH+ $Na_2S_2O_3$	0.1	+10V	5 to 10 min	Poor exfoliation
$Na_2S_2O_3$+ $NaClO_4$	0.1	+10V	5 to 10 min	Poor exfoliation

Table S2: Comparison of the specific capacitances based on GN

Product	Specific capacitance	Scan rate	Reference
exfoliation of graphite (EG)	75 F/g	10 mA/g	33
KOH modified GN	136 F/g	10 mA/g	34
Pillared Graphene-Paper (GP)	138 F/g	10 mA/g	35
FLGN	147 F/g	10 mA/g	Present work