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Electronic Supplementary Information

# Novel synthesis of RGO/NiCoAl-LDH nanosheets on nickel foam for supercapacitor with high capacitance

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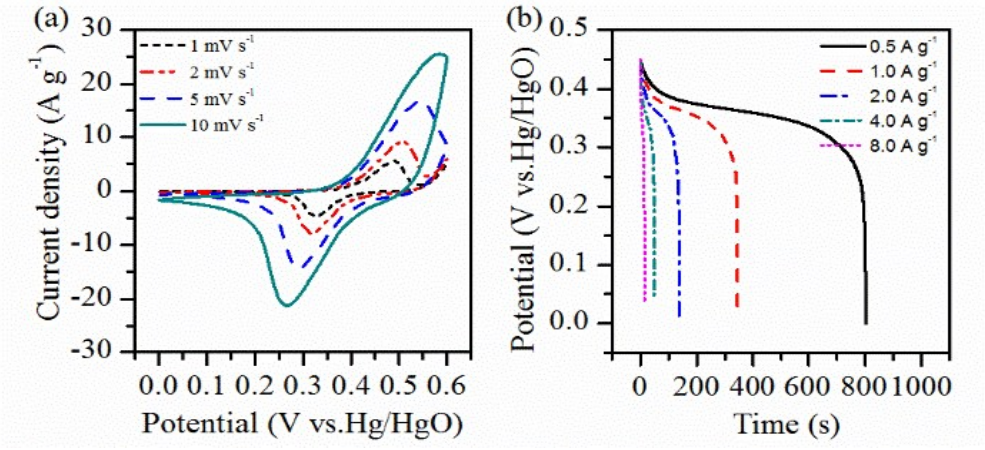


**Figure S1.** (a) CV curves of the RGL-2 nanosheets at various scan rates; (b) Galvanostatic charge-discharge curves of RGL-2 electrode measured at various current densities

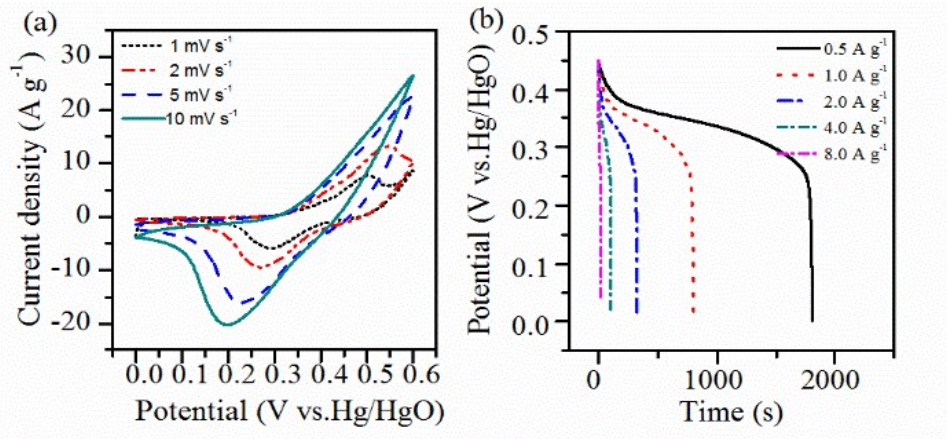


**Figure S2.** (a) CV curves of the RGL-1@NF nanosheets at various scan rates; (b) Galvanostatic charge-discharge curves of RGL-1@NF electrode measured at various current densities.

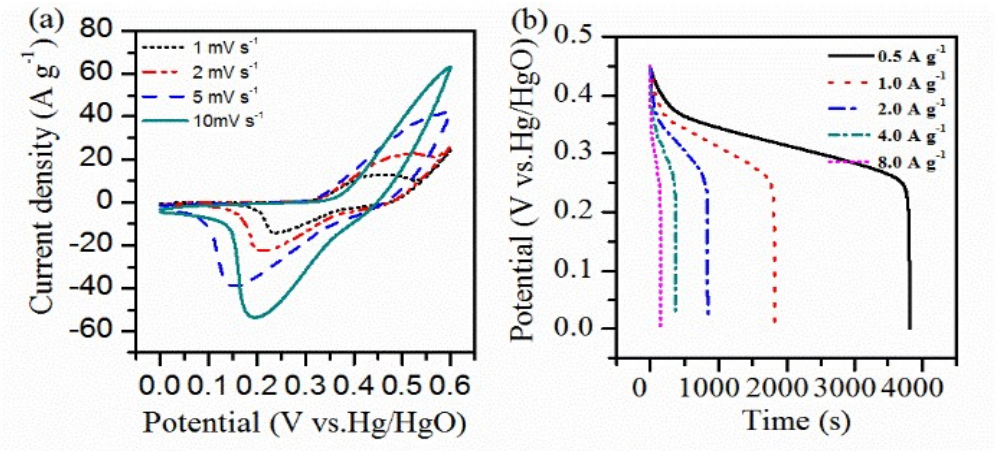


**Figure S3.** (a) CV curves of the RGL-3@NF nanosheets at various scan rates; (b) Galvanostatic charge-discharge curves of RGL-3@NF electrode measured at various current densities

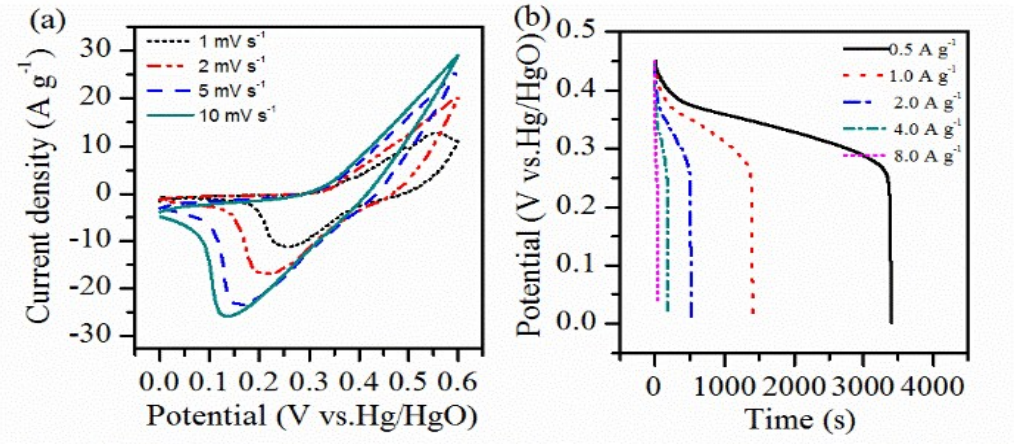


**Figure S4.** (a) CV curves of the RGL-4@NF nanosheets at various scan rates; (b) Galvanostatic charge-discharge curves of RGL-4@NF electrode measured at various current densities.

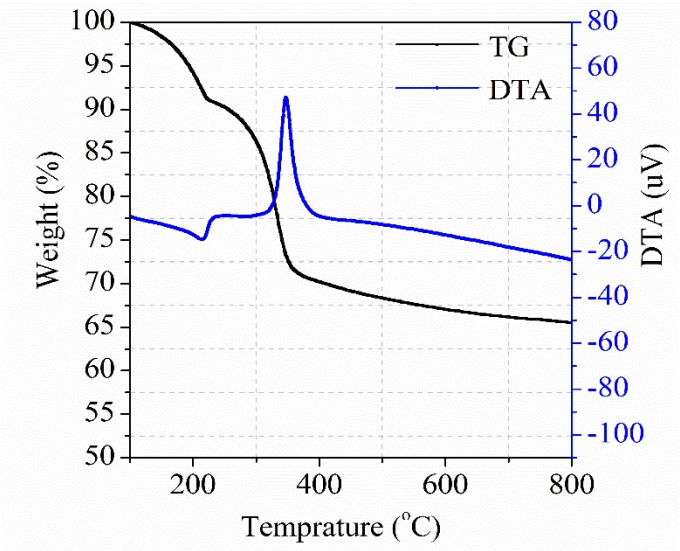


**Figure S5.** TG and DTA profiles of RGL-2 composite.

**Table S1.** Specific capacitance of the electrode materials at different current density

| Sample | Specific capacitance (F $g^{-1}$) | | | | |
|---|---|---|---|---|---|
| | 0.5 A $g^{-1}$ | 1 A $g^{-1}$ | 2 A $g^{-1}$ | 4 A $g^{-1}$ | 8 A $g^{-1}$ |
| RGL-2 | 893.2 | 773.3 | 612.4 | 437.3 | 244 |
| RGL-2@NF | 4849 | 4732 | 4462 | 4068 | 3262 |

**Table S2** Specific capacitance of the RGL-2 and the residual precipitate RGL-2/NF at different current density

| Sample | 0.5 A $g^{-1}$ | 1 A $g^{-1}$ | 2 A $g^{-1}$ | 4 A $g^{-1}$ | 8 A $g^{-1}$ |
|---|---|---|---|---|---|
| RGL-2/NF | 1301 | 1263.2 | 1253.6 | 1160 | 1000 |
| RGL-2@NF | 4849.7 | 4732.6 | 4462.8 | 4068.4 | 3262.2 |