Supporting Information

Synergistically Enhanced Electrocatalytic Performance of N-Doped Graphene Quantum Dots Decorated Three-Dimensional MoS_2-Graphene Nanohybrid for Oxygen Reduction Reaction

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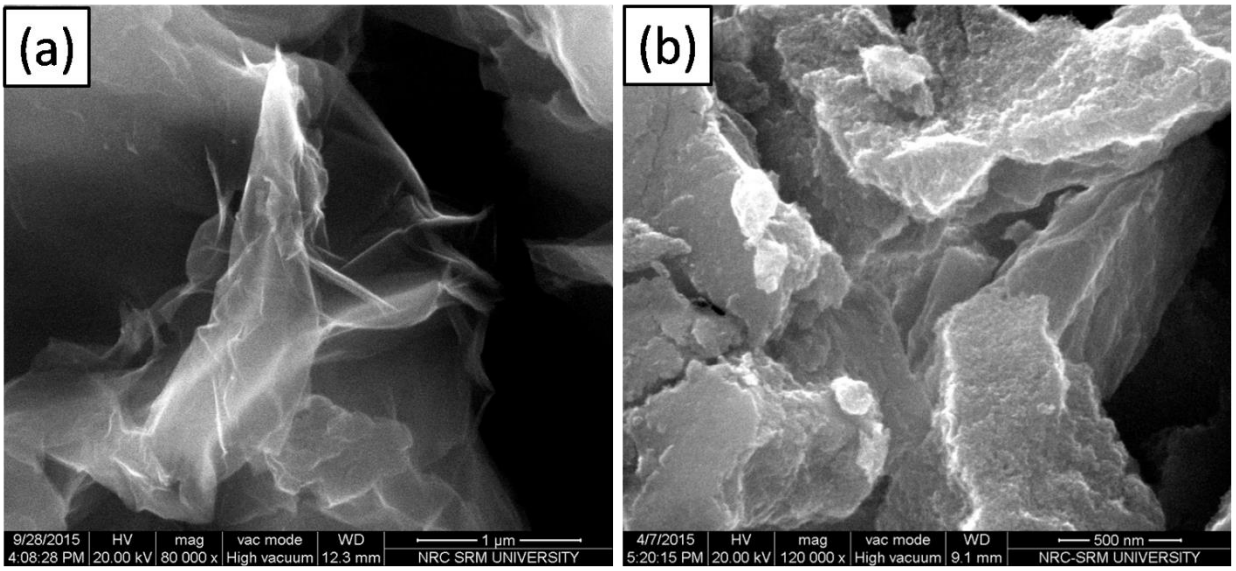

Figure S1. FE-SEM image of (a) GO and (b) MoS_2.

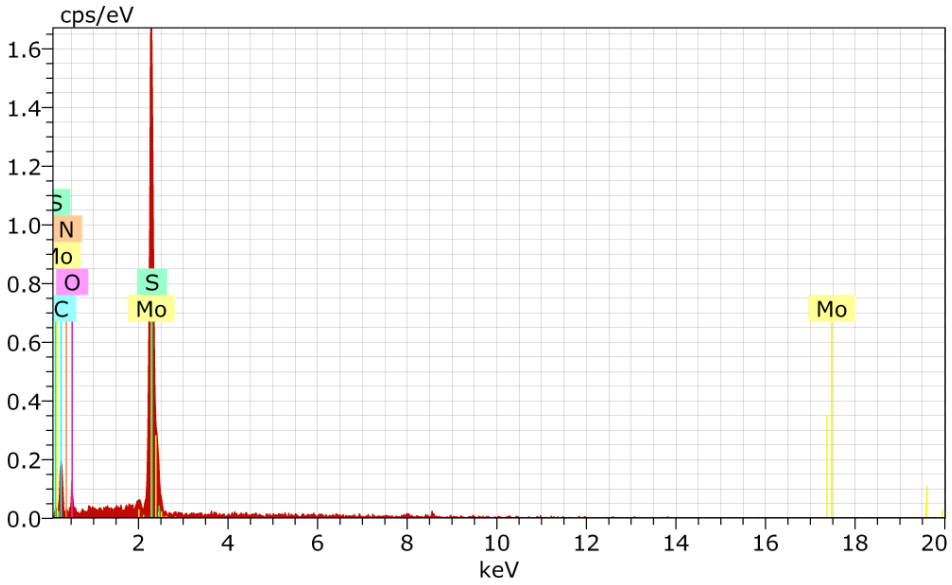

Figure S2. EDX spectrum of N-GQDs/MoS_2-rGO nanohybrid.

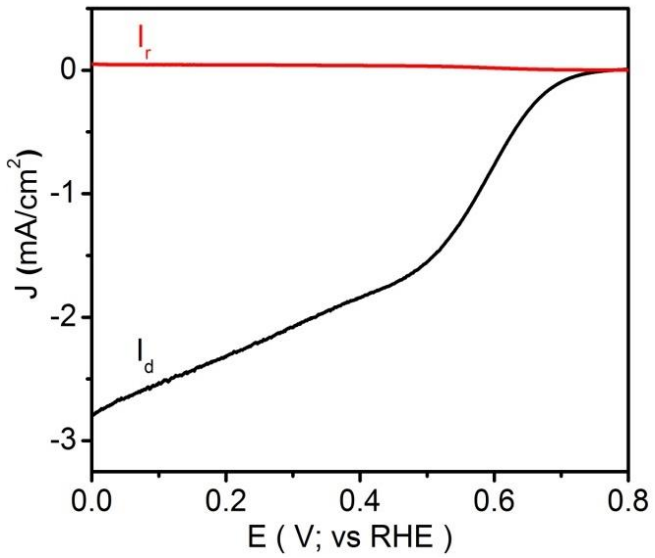

Figure S3. Disk current (I_d) and the corresponding ring current (I_r) for 3D N-GQDs/MoS_2-rGO nanohybrid using RRDE in the presence of O_2 saturated 0.1 M KOH at 1600 rpm with the scan rate of 10 mV/s.

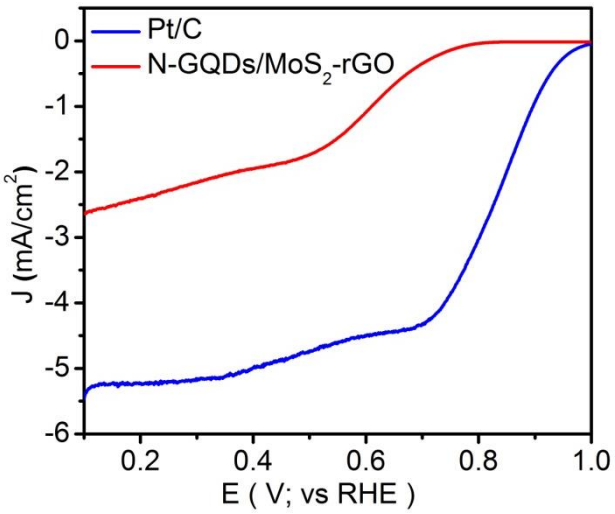

Figure S4. LSV comparison of N-GQDs/MoS_2-rGO nanohybrid with commercial Pt/C catalyst in the presence of O_2 saturated 0.1M KOH at 1600 rpm with the scan rate of 10 mV/s.

Table S1. Comparison on the electrocatalytic performance of some carbonaceous nanomaterials based electrocatalysts toward oxygen reduction reaction.

Electrocatalyst	**Method**	**Electrolyte**	**Current density at 1600 rpm (mA/cm^2)**	**Onset potential (V) *vs.* RHE**	**Ref.**
MoS_2 NDs/NGr	Thermal annealing	0.1M KOH	4.7	0.93	1
MoS_2/N doped graphene	Hydrothermal	0.1M KOH	4	0.88	2
B,N-GQD/Graphene	CVD	0.1M KOH	4.5	0.99	3
N, P, S co-doped graphene	Thermal annealing	0.1M KOH	NA	0.68	4
$Co(OH)_2$-MoS_2/rGO	Hydrothermal	0.1M KOH	NA	0.85	5
N doped carbon dots	Sovothermal	0.1M KOH	NA	0.83	6
3D N doped graphene	Thermal annealing	0.1M KOH	NA	0.83	7
3D crumpled graphene –cobalt oxide	Thermal annealing	1 M KOH	NA	0.90	8
3D Fe_3O_4-N doped graphene aerogel	Hydrothermal	0.1M KOH	NA	0.80	9
3D rGO/BN composite	Hydrothermal	0.1M KOH	3.0	0.79	10
3D N-GQDs/ MoS_2-rGO nanohybrid	**Hydrothermal**	**0.1M KOH**	**2.56**	**0.81**	**This work**

Note: *The potential conversion of Ag/AgCl and SCE into RHE was calculated using the standard conversion factor*

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