

Electronic supplementary information (ESI)

Enhanced Supercapacitor Performance of Cu-Fe₂O₃/g-C₃N₄ Composite Material: Synthesis, Characterization, and Electrochemical Analysis

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Supporting SI 1

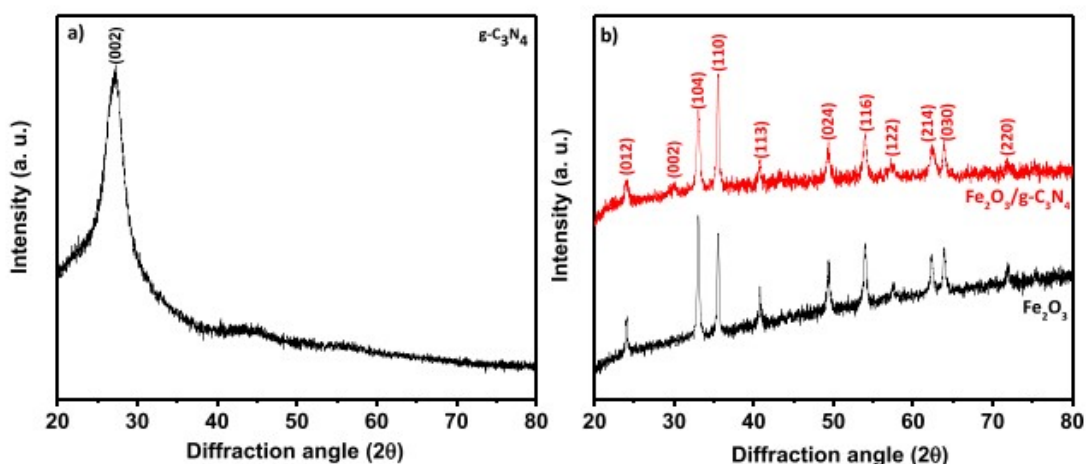


Figure SI 1 XRD diffraction spectra of (a) g-C₃N₄ and (b) Fe₂O₃, and Fe₂O₃/g-C₃N₄ ¹.

Supporting SI 2

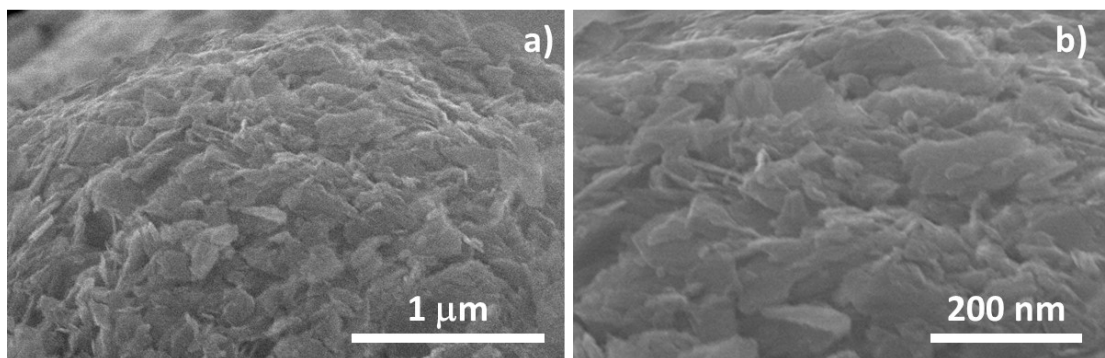


Figure SI 2 FESEM images of pristine $g\text{-C}_3\text{N}_4$.

Supporting SI 3

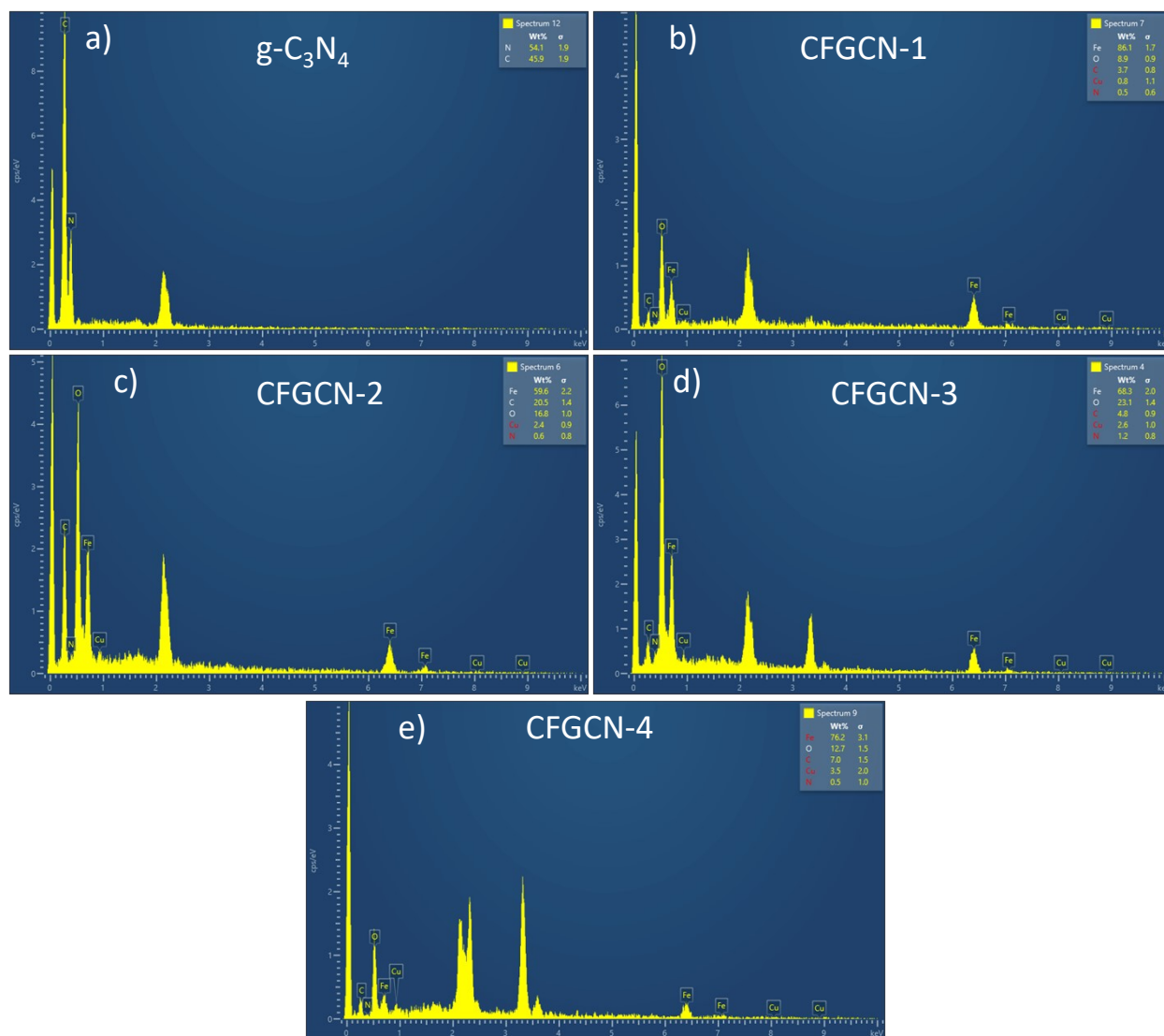


Figure SI 3 EDS of pure $g\text{-C}_3\text{N}_4$ and Cu doped $\text{Fe}_2\text{O}_3@g\text{-C}_3\text{N}_4$ nanocomposites.

Supporting SI 4

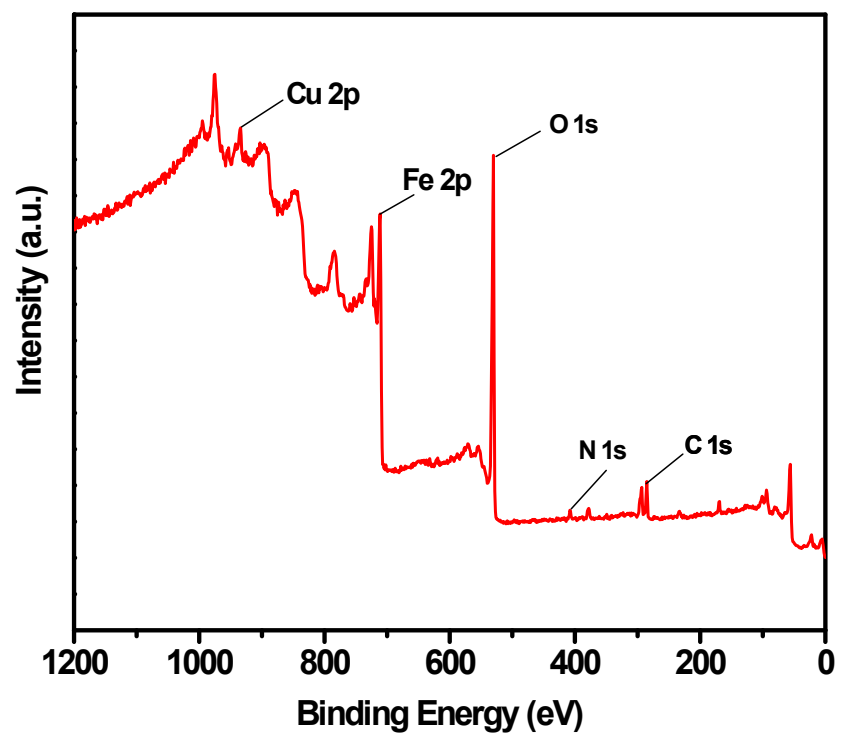


Figure SI 4 XPS survey spectra of Cu doped $\text{Fe}_2\text{O}_3@g\text{-C}_3\text{N}_4$ nanocomposites ².

Table SI 1 Summary of the various preparation conditions of Cu doped Fe₂O₃@g-C₃N₄ nanocomposites.

Sample	Amount of Cu (%)	1M CuSO ₄ .5H ₂ O (mL)	1M Fe(NO ₃) ₃ (mL)	g-C ₃ N ₄ (mg)	0.2M NaOH (mL)
CFGCN-1	2%	1.0	49.0	50	Till precipitation of all salts
CFGCN-2	4%	2.0	48.0	50	
CFGCN-3	6%	3.0	47.0	50	
CFGCN-4	8%	4.0	46.0	50	

References:

1. Balgude, S.; Godase, S.; Shinde, A.; Harak, C., Succinate assisted synthesis of magnetically separable Fe₂O₃/g-C₃N₄ nano-heterostructure: A stable catalyst for environmental remediation. *Current Research in Green and Sustainable Chemistry* **2021**, *4*, 100210.
2. Harak, C.; Satpute, D.; Kadam, V.; Kolhe, N.; Wade, A.; Balgude, S.; Mardikar, S.; Balgude, S.; Pawar, H., Morphology controlled fabrication of Fe₂O₃/GCN composites: a comparative study of hydrothermal and sonochemical synthesis methods for efficient sunlight driven photocatalysis for environmental remediation. *Emergent Materials* **2023**.