

Supporting Information

Origin of Modified Luminescence Response in Reduced Graphitic Carbon Nitride Nanosheets

Sayan Bayan¹, Anupam Midya², Narendar Gogurla¹, Achintya Singha³ and Samit K. Ray^{1,4*}

¹Department of Physics, ²School of Nanoscience and Technology, Indian Institute of Technology Kharagpur, West Bengal 721302, India

³Department of Physics, Bose Institute, Kolkata, West Bengal 700009, India

⁴S. N. Bose National Centre for Basic Sciences, Kolkata, West Bengal 700106, India

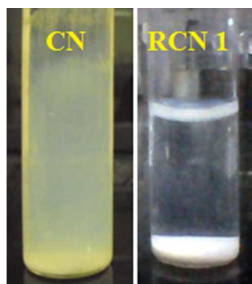


Figure S1: Optical image of the pristine (CN) and NaBH₄ treated sample (RCN 1) in water after 24 hrs. The pristine sample is found to be quite stable, while RCN 1 is completely precipitated.

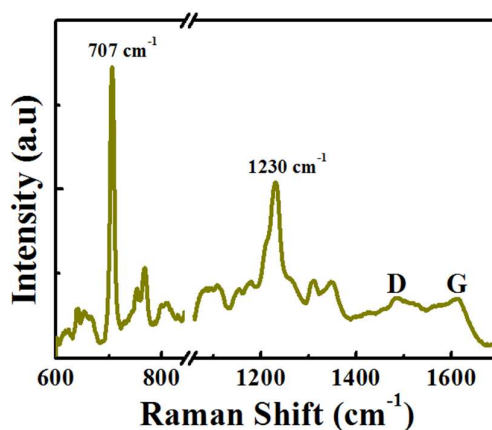


Figure S2: Raman spectrum of the pristine g-C₃N₄ nanosheets. The prominent peak at ~ 707 cm⁻¹ originates from the in-plane vibration of the heptazine rings. The small features within

1200-1400 including the strong peak at $\sim 1230\text{ cm}^{-1}$ indicate the C-N stretching vibrations. Further the D and G peaks can be located at the extreme end of the spectrum.¹

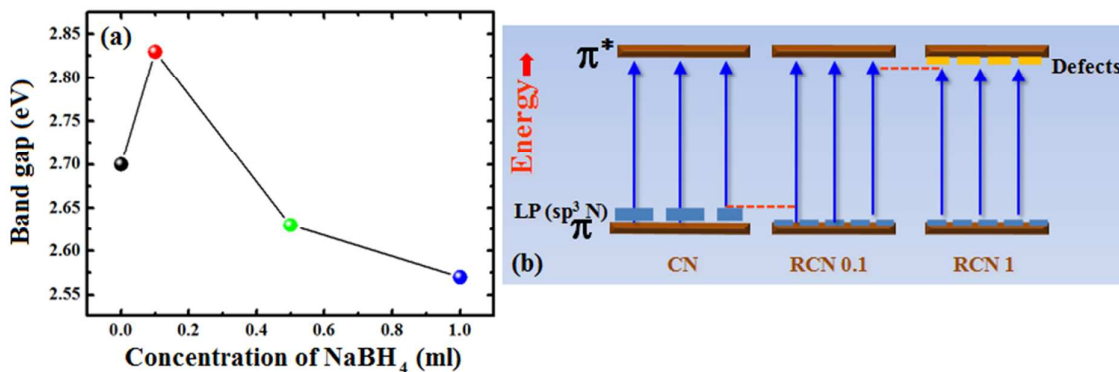


Figure S3: (a) Variation in band gap of the nanosheets with NaBH₄ concentration, (b) Schematic representation of the events occurring during the absorption process for different samples.

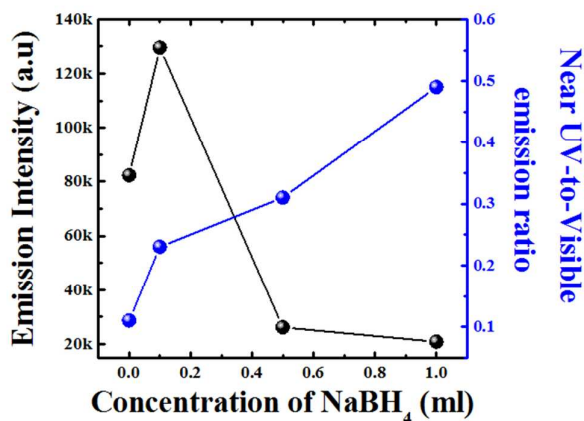


Figure S4: Variation in overall emission intensity and ratio of the near UV emission to the visible emission of the nanosheets for different concentration of NaBH₄.

References:

(1) Yuan, Y.; Zhang, L.; Xing, J.; Utama, M. I. B.; Lu, X.; Du, K.; Li, Y.; Hu, X.; Wang, S.; Genç, A.; Dunin-Borkowski, R.; Arbiol, J.; Xiong, Q. High-Yield Synthesis and Optical Properties of g-C₃N₄. *Nanoscale* 2015, 7, 12343-12350.