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## **Ultrafast Synthesis of Nitrogen Doped Graphene Quantum Dots by Fenugreek Seed**

As a new class of fluorescent carbon sources, graphene quantum dots (G-QDs) have gain much attention due to their excellent properties. At present, the G-QDs applications are limited by the current synthesis method which requires longer synthesis and processing time [1]. Herein, we present ultrafast synthesis of Graphene Quantum Dots via PECVD method using the fenugreek seeds as carbon source. Highly luminescent G-QDs can be synthesized in a matter of five minutes. As synthesized G-QDs have excellent colloidal, photo-stability, environmental stability (pH) and do not require any additional surface passivation step to improve the fluorescence. The morphology, structural analysis and optical properties were investigated using transmission electron microscopy (TEM), UV-vis absorption spectroscopy, Photoluminescence spectroscopy, Raman spectroscopy, Zeta-sizer & Zeta-potential. The synthesized graphene quantum dots provide promising applications in various areas such as bio imaging, biomedicine, sensors, photovoltaics and optoelectronics.

### **References**

- [1] Anil Suryawanshi, Mandakini Biswal, Dattakumar Mhamane, Rohan Gokhale, Shankar Patil, Debanjan Guin and Satishchandra Ogale, J Nanoscale, 2014, 6, 11664–11670.