

## Author's Accepted Manuscript

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PII: S0022-2313(15)00310-5  
DOI: <http://dx.doi.org/10.1016/j.jlumin.2015.05.056>  
Reference: LUMIN13387

To appear in: *Journal of Luminescence*

Received date: 18 June 2014  
Revised date: 18 March 2015  
Accepted date: 27 May 2015

Cite this article as: Juan Ge, Yan Li, Bo-Ping Zhang, Ning Ma, Jun Wang, Chang Pu and Ying-Chang Xiang, Electrochemical tuning of optical properties of graphitic quantum dots, *Journal of Luminescence*, <http://dx.doi.org/10.1016/j.jlumin.2015.05.056>

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# Electrochemical tuning of optical properties of graphitic quantum dots

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**Abstract:** Graphitic quantum dots (GQDs), as a new class of quantum dots, possess unique properties. Among the various reported approaches for their fabrication, electrochemical method possesses numerous advantages compared with others. In particular, the formation process of the GQDs could be precisely controlled by this method through adjusting the electrochemical parameters and environment. In this study, GQDs with multi-color fluorescence (FL) were obtained by this method through tuning only the applied potential window of cycling voltammetry. The luminescence mechanism of those GQDs was discussed and explained by the ultraviolet (UV)-visible, photoluminescence (PL), and photoluminescence excitation (PLE) spectra. The influence of the applied potential window on the PL properties of GQDs and the relationship between the degree of surface oxidation and PL properties were also investigated.

**Keywords:** graphitic quantum dots, electrochemical method, luminescence mechanism, surface oxidation degree, photoluminescence property

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