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**Hydrothermal Solution-Processed Reduced Nano-Graphene Oxide as Blue Photoluminescence Quantum Dots** JIGANG WANG, University of Texas Arlington, YONGSHENG WANG, DAWEI HE, Beijing Jiao Tong University, KE JIANG, WEI CHEN, University of Texas Arlington — Chemical derived graphene oxide, an atomically thin sheet of graphite with 2-D construction, offers interesting electronic, chemical and mechanical properties that are currently being explored for advanced electronics, membranes and composites. Herein, we synthesize and explore the blue photoluminescence (PL) nano-graphene quantum dots (QD) through hydrothermal-solution-processed reduced graphene oxide. The PL investigation indicated that graphene oxide solution showed weak fluorescence. However, when the nano-graphene oxide solution samples were heated at different temperatures, from 200-300 °, the blue PL intensity of the solution improved radically as heating temperature increased. We also investigated time dependence at a certain heating temperature and the PL Intensity and peak based on graphene QDs under different pH values by adding NaOH. The FT-IR measurements showed that the functional groups of the graphene oxide had been altered due to the hydrothermal routes. In addition, we also investigated the absorption spectrum of the graphene QDs under different conditions, XRD and XPS images of the graphene oxide, TEM and SEM images based on graphene QDs under different conditions.

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