Abstract Submitted for the MAR14 Meeting of The American Physical Society

Fluorescence Quenching of CdSe Quantum dots on Graphene¹ XITAO GUO, ZHENHUA NI, Southeast University, CHUNYAN LIAO, Northwest University, HAIYAN NAN, YAN ZHANG, WEIWEI ZHAO, WENHUI WANG, Southeast University, DEPARTMENT OF PHYSICS SOUTHEAST UNIVERSITY TEAM — We studied systematically the fluorescence quenching of CdSe quantum dots (QDs) on graphene and its multilayers, as well as graphene oxide (GO) and reduced graphene oxide (rGO). Raman intensity of QDs was used as a quantitatively measurement of its concentration in order to achieve a reliable quenching factor (QF). It was found that the QF of graphene (\sim 13.1) and its multilayers is much larger than rGO (\sim 4.4), while GO (\sim 1.5) has the lowest quenching efficiency, which suggests that the graphitic structure is an important factor for quenching the fluorescence of QDs. It was also revealed that there is no large difference on the QF of graphene with different thicknesses.

¹This work is supported by NSFC (11104026).

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Date submitted: 12 Nov 2013 Electronic form version 1.4