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Authors: Mingjia Zhang, Yandan Leng, Jing Huang, JiaoJiao Yu, Zhenggang Lan, Changshui Huang



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Surface-enhanced Raman scattering of dipolar molecules by the graphene Fermi surface modulation with different dipole moments

Mingjia Zhang,^{a,†} Yandan Leng,^{a,b,†} Jing Huang,^a JiaoJiao Yu,^{a,b} Zhenggang Lan,^a and Changshui Huang^{a,*}

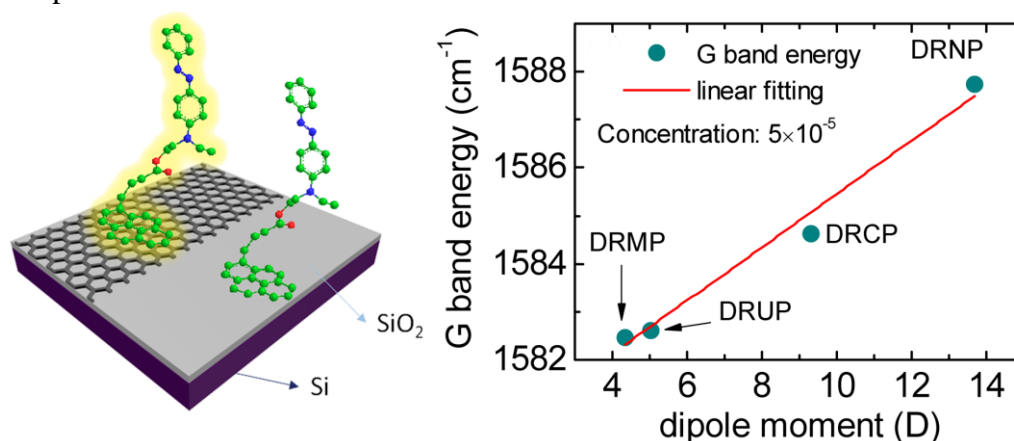
[†] These authors contributed equally to this work.

^a Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, Qingdao 266101, P.R. China

^b University of Chinese Academy of Sciences, Beijing 100049, P. R. China.

E-mail address: huangcs@qibebt.ac.cn (C. -S. Huang)

Graphical abstract:



The table of contents entry: The Raman spectrum of chromophore/graphene hybrids with different dipole molecules has been investigated. It is shown that the graphene-enhanced Raman scattering (GERS) can be significantly changed by the dipole moment values. By the analysis of the Raman signals of graphene as well as the interfacial energy level match, a strong correlation between the GERS and graphene Fermi surface is revealed.

Highlights

- Raman scattering spectrums of chromophore/graphene hybrids with different dipole moment values by changing the terminal groups are investigated.
- The surface-enhanced Raman scattering shows significant positive correlation with the dipole moment.
- Polarization characteristics of chromophores are found to play an important role in the interfacial energy level matching by regulating graphene Fermi surface.

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