Electronic Supplementary Material (ESI) for Green Chemistry.
This journal is © The Royal Society of Chemistry 2015



# Supporting Information

## Biocompatible Reduced Graphene Oxide Sheets with Superior Water Dispersibility Stabilized by Cellulose Nanocrystal and Their Polyethylene Oxide Composites

*Yun-Sheng Ye,*[a] Hong-Xia Zeng,[a] Jun Wu,[a] Li-Yun Dong,[b] Jin-Tao Zhu[a], Zhi-Gang Xue,[a] Xing-Ping Zhou,[a] Xiao-Lin Xie*[a] and Yiu-Wing Mai[c]*

[a.] *Key Laboratory of Material Chemistry for Energy Conversion and Storage, Ministry of Education, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China*
[b.] *Department of Dermatology, Affiliated Union Hospital, Tongji Medical College, Huazhong University of Science and Technology (HUST), Wuhan 430022, China*
[c.] *Centre for Advanced Materials Technology (CAMT), School of Aerospace, Mechanical and Mechatronic Engineering J07, The University of Sydney, Sydney, NSW 2006, Australia*

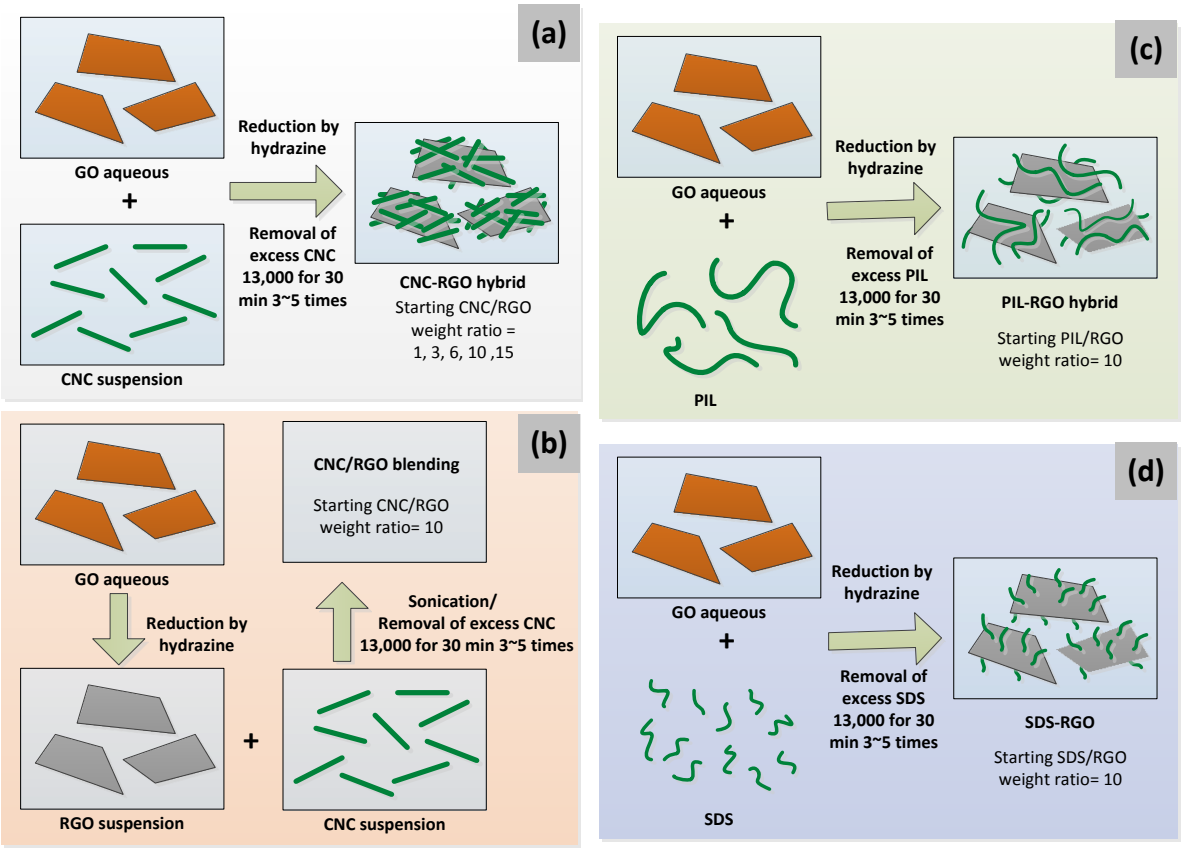



Figure S1. Synthesis procedure of (a) CNC-RGO hybrids, (b) CNC/RGO blending, (c) PIL-RGO and (d) SDS-RGO.

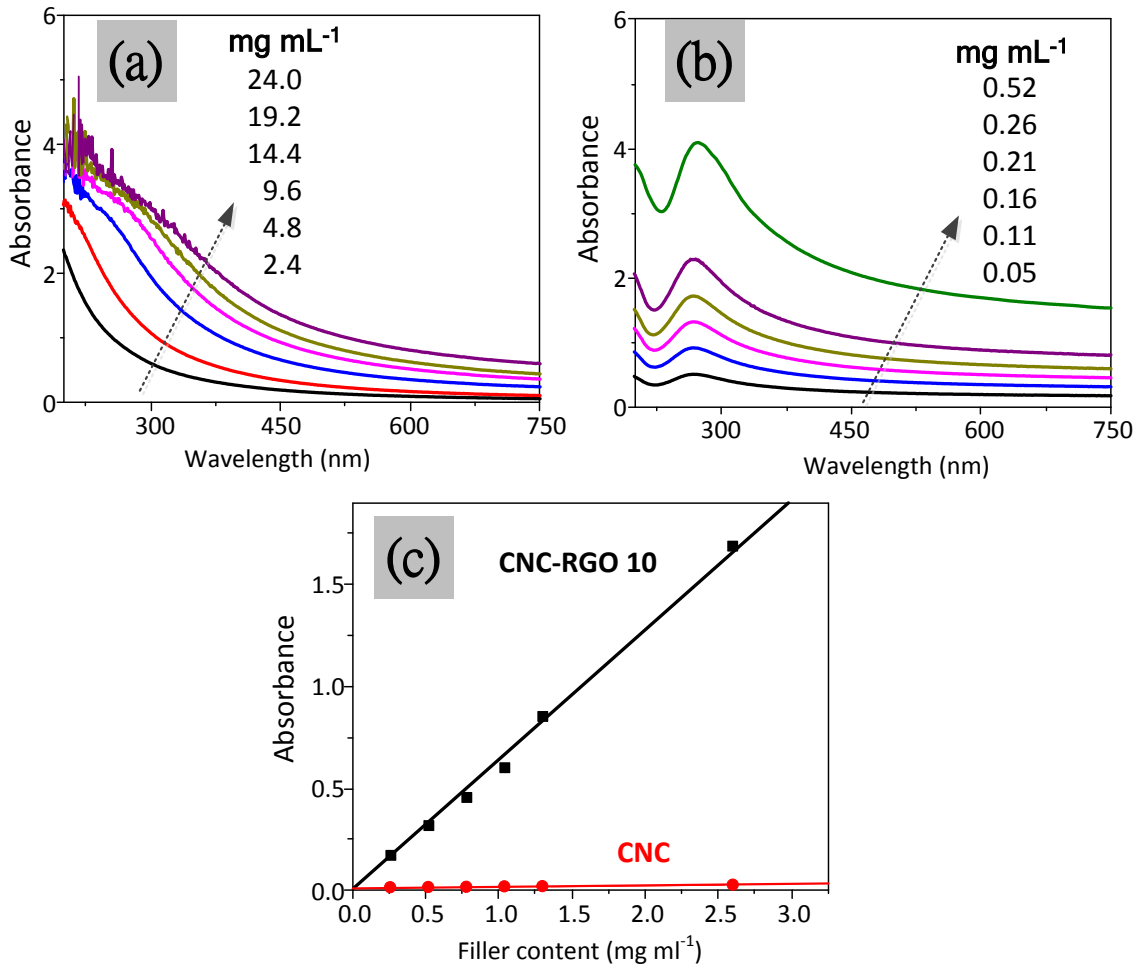



Figure S2. UV-vis absorption spectra of (a) CNC and (b) CNC-RGO 10 hybrid dispersed in water with different concentrations; (c) optical density at 500 nm of CNC-RGO and CNC at different concentrations.

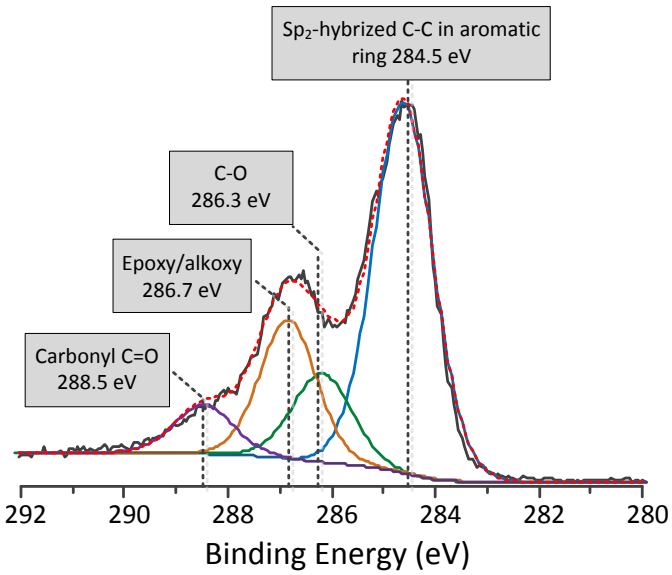



Figure S3. Carbon 1s XPS profile of CNC-RGO 10 hybrid.

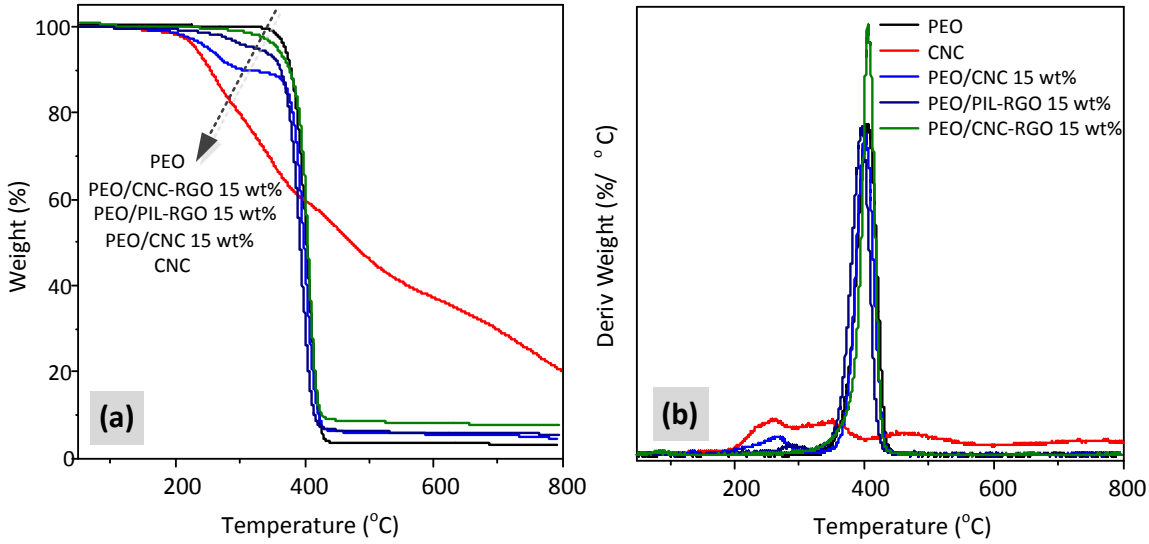



Figure S4. (a) TGA and (b) DTG curves of PEO, CNC, PEO/CNC 15 wt%, PEO/PIL-RGO 15 wt% and PEO/CNC-RGO 15 wt%.

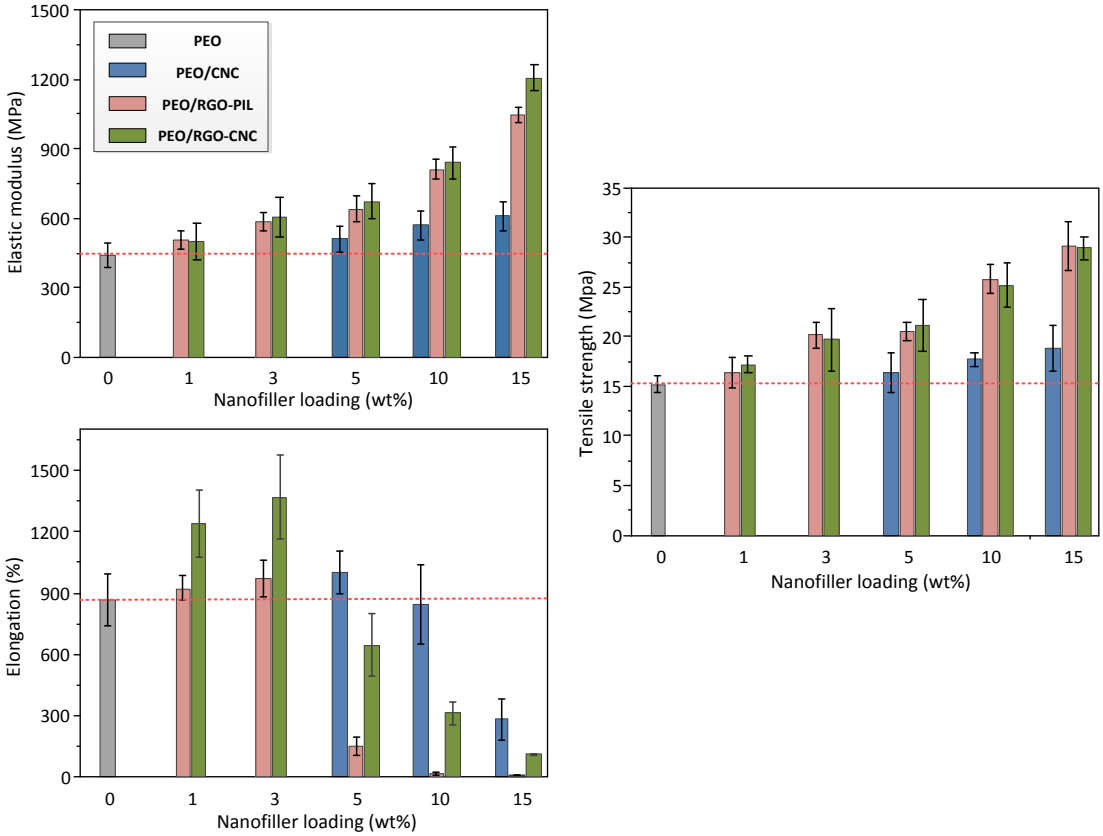
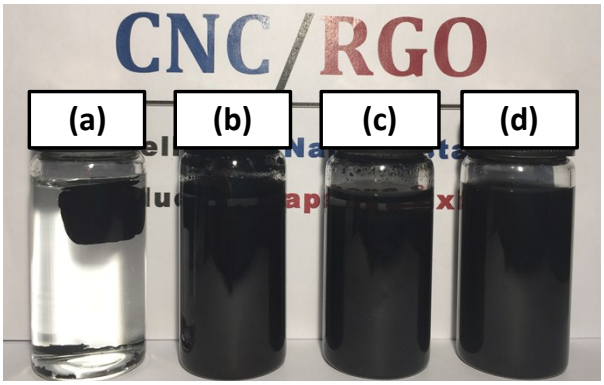



Figure S5. (a) Young's modulus, (b) tensile strength and (c) failure strain of PEO, PEO/CNC, PEO/PIL-RGO and PEO/CNC-RGO.



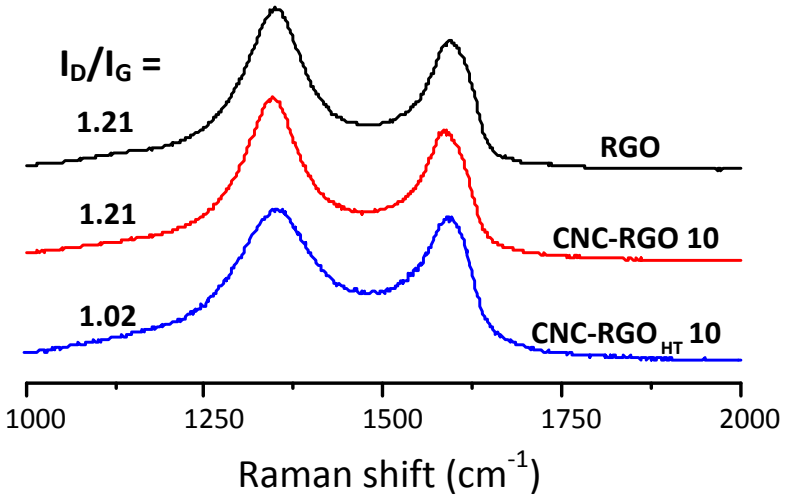




Figure S6. (above) Photographs of the (a) RGO, (b) CNC-RGO$_{HT}$ 3, (c) CNC-RGO$_{HT}$ 6 and CNC-RGO$_{HT}$ 10 after hydrothermal reaction. (below) Raman spectra of RGO, CNC-RGO 10 and CNC-RGO$_{HT}$ 10.