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Supramolecular functionalization of reduced graphene oxide nanosheets for chemical sensing

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Chemical preparation of graphene nanomaterials offers biocompatibility, low-cost and mass-production advantages [1]. Derivation of graphene nanosheets to introduce specific functions is a key step for chemical and biochemical sensing applications [2-3]. My PhD research project involves supramolecular functionalization of reduced graphene oxide (RGO) nanosheets for chemical sensors.

Using RGO as a platform for chemo-sensing has two distinct advantages as a 2-dimensional material it provides optimal specific surface area ($2630 \text{ m}^2\text{g}^{-1}$) and thereby sensor to analyte interactions [4]. Furthermore the unique electrical properties of RGO can be used to report the recognition of analyte through electrochemical response to sensing events [5]. My PhD project is in the beginning phase. This poster presents schematic illustration of research focus and some preliminary results regarding crown ether derived RGO materials.

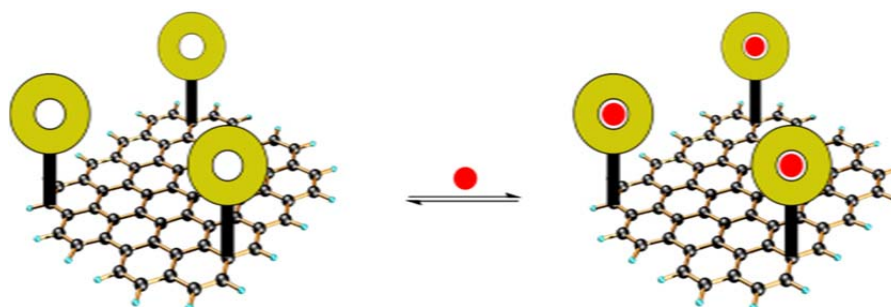


Fig. 1. Schematic illustration of covalent derivation of graphene nanosheets with supermolecules for specific molecular recognition and chemical sensing.

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