## Tailor-Made Molecular Rods for Graphene Junctions

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Graphene has found applications in many technologies since its discovery in 2004.[1] A new promising idea is to use graphene as a contact material in nanoelectronics. The advantages of graphene compared to gold are its stability, thickness and large variety of possible anchoring groups.[2-3] Here we present the successful synthesis of a tailor-made molecular rod for graphene junctions. The molecule is designed to bridge a nanogap between two graphene electrodes with a silicon insulator in between. The molecular rod consists of two phenanthrene anchoring groups to interact with graphene *via* π-π interactions, two oligo(phenylene ethynylene) linkers to establish the electronical communication[4] and the central moiety which was modified with two silica anchoring groups.[5] The silica anchoring group forms a covalent bond to the silica insulator under the junction to prevent the molecular rod from sliding out of the junction. We will present the synthesis and further studies on molecular rod **1.**
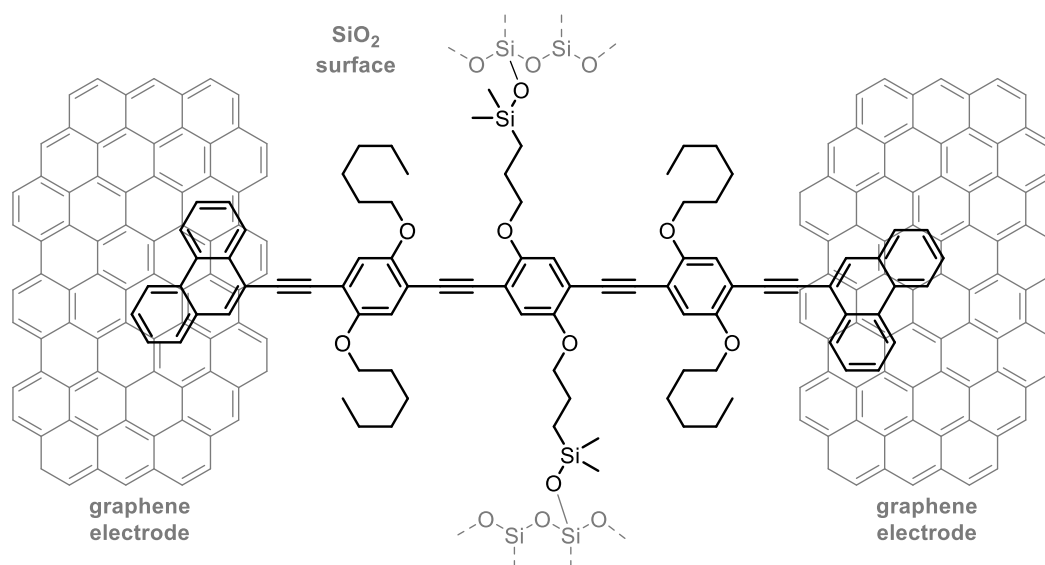
Schematic representation of molecular rod **1** between graphene electrodes.

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