

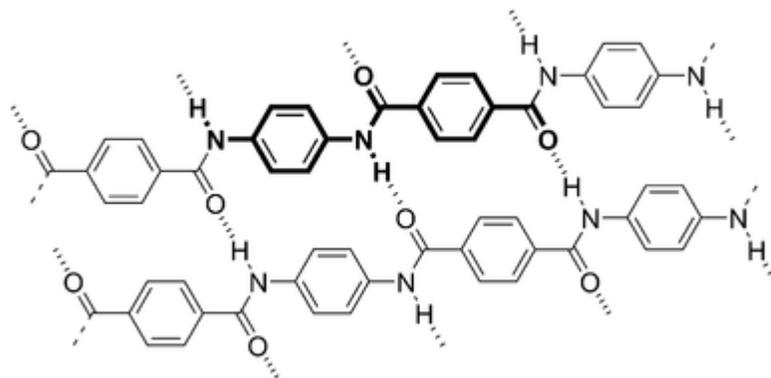
Synthesis and characterization of Kevlar's analog graphene material

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Kevlar, (structure A), the brand name for (poly paraphenylene terephthalamide) owes its high tensile strength of 3620 MPa to intermolecular hydrogen bonds between the carbonyl groups and NH centers and $\pi - \pi$ stacking of the aromatic rings. The present work discusses the synthesis of Kevlar's analogs graphene material via the reaction of amino and hydroxyl-substituted CNTs with terphthaloyl chloride. The products are characterized using ATR-FT-IR, Raman and XPS spectroscopic techniques together with SEM and TEM to explore the effect of the graphene $\pi - \pi$ interaction on the mechanical properties of the product.



Structure A