

Publication

Synthesis of Giant Dendritic Polyphenylenes with 366 and 546 Carbon Atoms and Their High-vacuum Electrospray Deposition

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Dendritic polyphenylenes (PPs) can serve as precursors of nanographenes (NGs) if their structures represent 2D projections without overlapping benzene rings. Here, we report the synthesis of two giant dendritic PPs fulfilling this criteria with 366 and 546 carbon atoms by applying a "layer-by-layer" extension strategy. Although our initial attempts on their cyclodehydrogenation toward the corresponding NGs in solution were unsuccessful, we achieved their deposition on metal substrates under ultrahigh vacuum through the electrospray technique. Scanning probe microscopy imaging provides valuable information on the possible thermally induced partial planarization of such giant dendritic PPs on a metal surface.

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