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Thiophene containing polyaromatic hydrocarbons

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In this poster we detail recent investigations into the formation of new sulfur-based polyaromatic hydrocarbons. These form an extension to our previous work on a new class of polyaromatic, nitrogen-containing compounds, the "N-Heterosuperbenzenes". Through modification of our developed synthetic strategy[1] we have successfully incorporated thiophene rings into the periphery of the polyphenyl precursors and studied their influence on key chemical modifications such as dehydrogenation, carbon-carbon bond formation and polymerisation. Building on the work of Tovar[2] and McCullough[3] we show the unique consequences of steric bulk in the polyphenylene precursor; and examine how changes in the dehydrogenation conditions alter the aromaticity of the final products. Strategies to control the polymerisation and dimerisation reactions of the precursors have been developed. Investigations into the photochemical and electrochemical properties of the precursors and the new fused aromatics will be presented along with their possible application in metal coordination complexes and molecular switching devices.

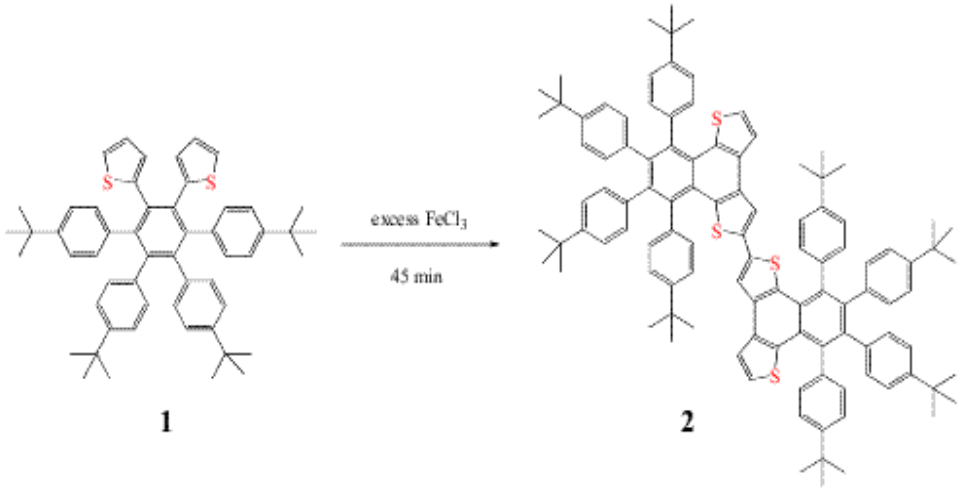

*Fig 1: The oxidative dehydrogenation of precursor **1** to give the dimeric species **2**.*