

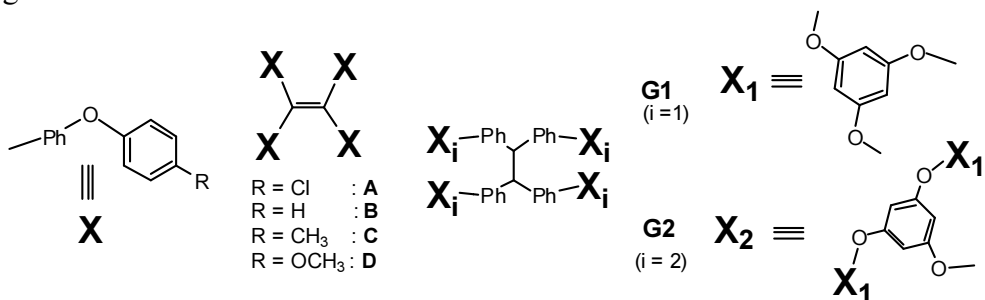
Aryloxy-substituted Tetraphenylethylene derivatives for the preparation of electroactive dendrimers

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A series of soluble aryloxy-substituted tetraphenylethylenes (A-D) were synthesized by a reaction of *p*-chlorophenol, phenol, *p*-methylphenol or *p*-methoxyphenol with tetrakis(4-bromophenyl)ethylene in excellent overall yields. Preliminary electrochemical studies showed that these molecules undergo reversible oxidation and form stable cation radical salt. Furthermore, a plot of oxidation potentials of A-D against the Hammett constants of aryloxy substituents showed a linear dependence and thus establishing effective electronic coupling of the aryloxy substituents with tetraphenylethylene (TPE) core. A similar strategy was then employed for the preparation of two generations of TPE-core dendrimers (G1 and G2) using phloroglucinol as branching units. The branching units in these dendrimers showed effective electronic coupling with the TPE core in the preliminary electrochemical studies. Efforts are underway to prepare higher generation dendrimers G3 and G4.



Key words: Aryloxy-substituted tetraphenylethylene, electrochemistry, Hammett correlation, dendrimers, cation radicals.

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