

Organometallic pyridylphenylene dendrimers with ferrocene units

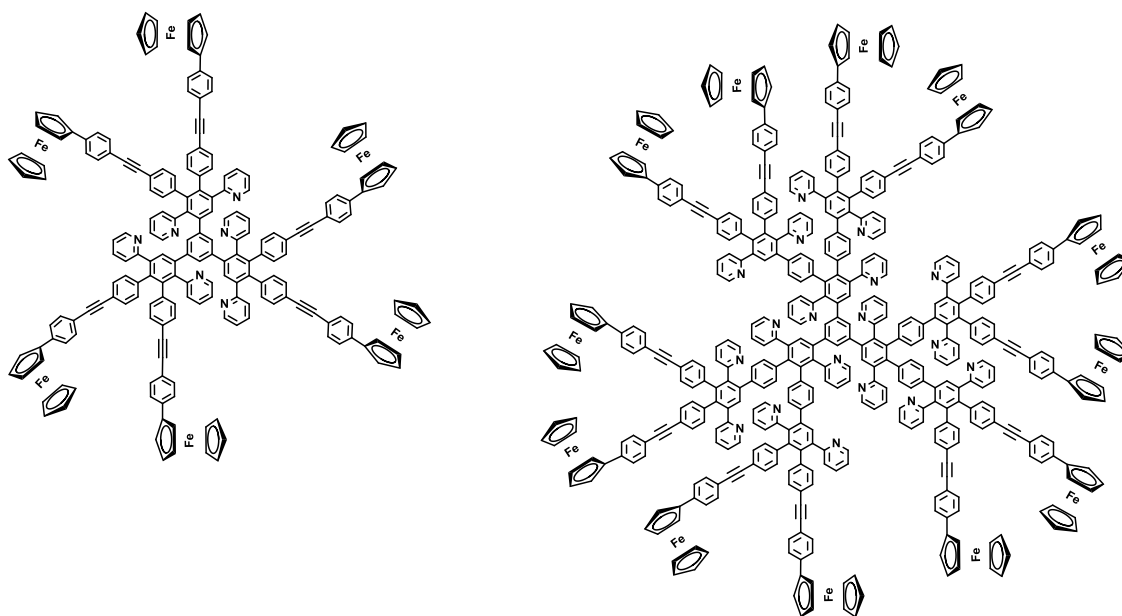
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The use of metallodendrimers has been well studied, with significant applications in catalysis, molecular electronics and sensing [1,2]. Herein, we report the synthetic route to pyridylphenylene dendrimers with ferrocene units (Scheme) through the Diels-Alder cycloaddition. The syntheses exploit multiple cycloadditions to form a G_{n-1} dendrimer with ethynyl terminal groups and final Diels-Alder reaction with specially designed ferrocenyl-containing cyclopentadienone that result in the target dendrimer.

The dendrimer structure was confirmed by NMR spectroscopy. MALDI-ToF mass spectrometry and SEC analysis were employed to prove the purity and monodispersity of dendrimers synthesized.



Scheme. Chemical structure of G_1 and G_2 dendrimers with ferrocene terminal units.

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1. Didier Astruc, Cátia Ornelas, Jaime Ruiz. *Acc. Chem. Res.*, **2008**, *41* (07), 841–856.
2. Didier Astruc. *Nature Chemistry*, **2012**, *4*, 255–267.