Periodic Mesoporous Silicas as Supports for Late Metal Olefin Polymerization

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We are working to develop a new synthetic route to hydrolytically stable organosilica precursors for the formation of ordered mesoporous organosilicas with molecular-scale periodicity of the organic groups in the walls of the silica pores. 4,4'-bis(bromomethyl)-1,1'-bipyridine was converted to 4,4'-bis(trichlorosilylmethyl)-1,1'-bipyridine using trichlorosilane in the presence of triethylamine. After isolation, 4,4'-bis(trichlorosilylmethyl)-1,1'-bipyridine was reacted with an excess of allylmagensium bromide to form the desired 4,4'-bis(triallylsilylmethyl)-1,1'-bipyridine. The 4,4'-bis(triallylsilylmethyl)-1,1'-bipyridine was purified using column chromatography and isolated in good yield.