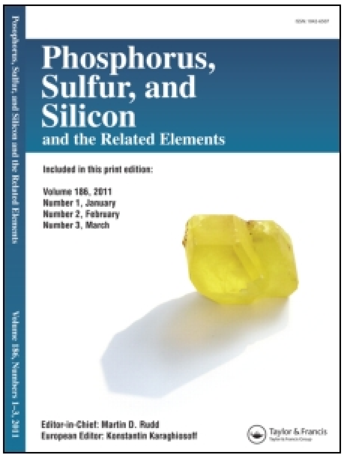

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Synthesis of Novel Triarylphosphines Bearing a m -Terphenyl-Based Dendrimer-Type Framework

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SYNTHESIS OF NOVEL TRIARYLPHOSPHINES BEARING A *m*-TERPHENYL-BASED DENDRIMER-TYPE FRAMEWORK

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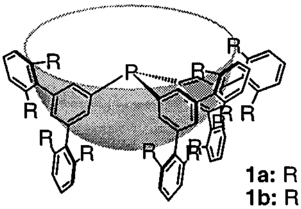
There has been considerable interest in the design and development of bulky phosphine ligands. Usually increasing the steric bulk of monodentate phosphines means the increase of the steric congestion around the phosphorus center, which results in both the larger cone angle and the larger substituent-phosphorus-substituent (SPS) angle. Here we report the synthesis and structure of novel nano-scale triarylphosphines **1** bearing a dendrimer-type framework. Phosphine **1a** was prepared by lithiation of the corresponding *m*-terphenyl bromide followed by the reaction with PCl_3.* X-ray crystallographic analysis established the structure of **1a**, indicating that the cone angle of **1a** is about 174°, which is comparable with that of tri-*t*-butylphosphine (182°), while the SPS angle of **1a** is 101°, which is slightly smaller than that of triphenylphosphine (av. 107°). Phosphine **1b** bearing isopropyl groups was also prepared by the similar method.



1a: R = Me
1b: R = *i*-Pr

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*This compound was independently synthesized by Tatsumi et al, see: Abstracts of the 79th Spring Annual Meeting of the Chemical Society of Japan; the Chemical Society of Japan, Tokyo, 2001: Vol. 1, p. 491 (1PA104).