

トリメチルシリル基が置換したテトラフェニルブタジエンおよびテトラフェニルシロールの合成と光物性

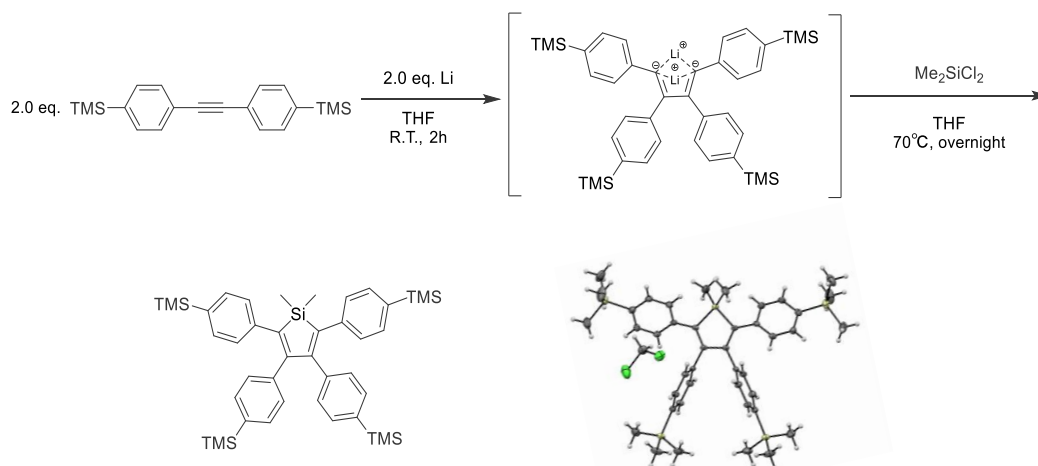
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Synthesis and Photophysical Properties of Tetraphenylbutadiene and Tetraphenylsilole with Trimethylsilyl Groups (*Department of Applied Chemistry, Faculty of Science and Engineering, Kindai University*) ○Hiori Sato, Tomoki Maede, Kei Ota, Tsukasa Matsuo

Silole exhibits excellent electron-accepting properties, and its derivatives have been extensively studied as fluorescent and electron-transport materials. In this study, we focused on developing a new tetraphenylsilole derivative with trimethylsilyl groups at the *para* positions of all four phenyl rings. The reductive treatment of 4,4'-bis(trimethylsilyl)diphenylacetylene with lithium metal in THF afforded the corresponding 1,2,3,4-tetraphenylbutadiene dianion via dimerization of the anion radical species. The subsequent reactions with water and dimethyldichlorosilane yielded 1,2,3,4-tetraphenylbutadiene and 1,1-dimethyl-2,3,4,5-tetraphenylsilole derivatives with trimethylsilyl groups, respectively. Their structures were characterized by NMR spectroscopy and X-ray crystallography, and their photophysical and electrochemical properties are currently under investigation.

Keywords: *Siloles, Butadienes, Diphenylacetylenes, Trimethylsilyl Groups, Silicon*

シロールは電子受容性に優れており、発光材料や電子輸送材料として研究されている¹⁾。今回、フェニル基のパラ位にトリメチルシリル基が置換したトラン誘導体を、THF 中金属リチウムを作用させて還元的二量化し、生成したブタジエンジアニオン種と水およびジクロロシランとの反応により、新規なテトラフェニルブタジエンおよびテトラフェニルシロール誘導体を合成した。これらの結晶構造や光物性について調査したので報告する。



1) S. Yamaguchi, K. Tamao, *J. Synth. Org. Chem. Jpn.*, **1998**, 56, 500.