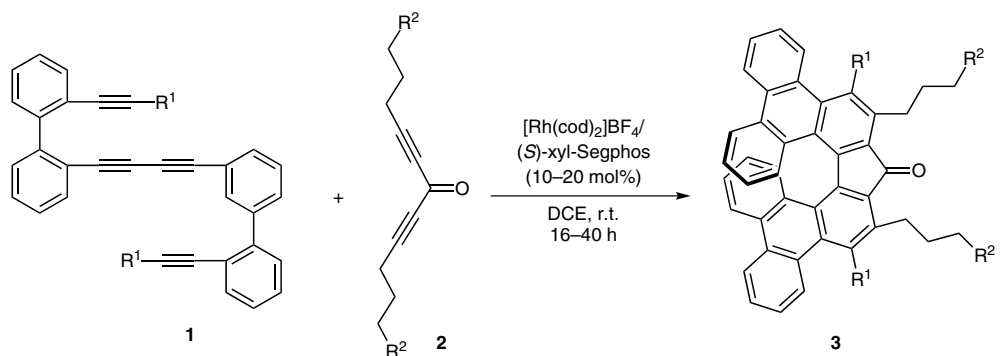


Y. SAWADA, S. FURUMI, A. TAKAI, M. TAKEUCHI, K. NOGUCHI, K. TANAKA\* (TOKYO UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, NATIONAL INSTITUTE FOR MATERIALS SCIENCE, TSUKUBA AND SCIENCE AND TECHNOLOGY AGENCY, KAWAGUCHI, JAPAN)

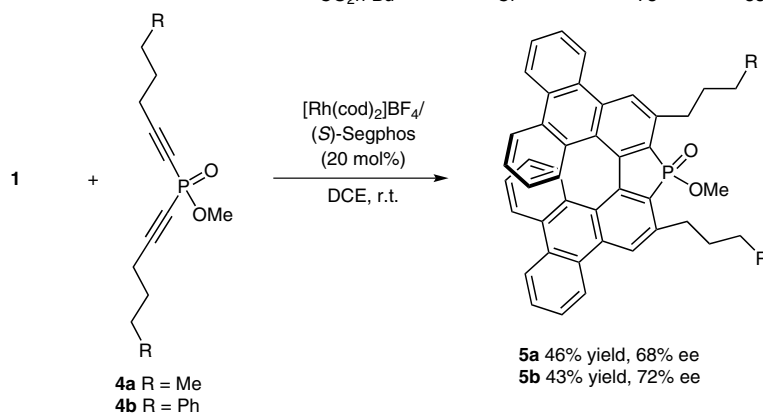
Rhodium-Catalyzed Enantioselective Synthesis, Crystal Structures, and Photophysical Properties of Helically Chiral 1,1'-Bitriphenylenes

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## Helically Chiral 1,1'-Bitriphenylenes



R <sup>1</sup>	R <sup>2</sup>	Yield (%)	ee (%)
H	Me	67	91
H	[(CH <sub>2</sub> ) <sub>6</sub> Me]	62	92
H	Ph	60	91
H	Cl	59	93
H	OBn	49	91
CO <sub>2</sub> <i>n</i> -Bu	Me	74	66
CO <sub>2</sub> <i>n</i> -Bu	Cl	73	53



**Significance:** The unique helical chirality of helicenes makes them attractive candidates for optical and electronic applications. This paper reports the synthesis of [7]helicenes, helically chiral 1,1'-bitriphenylenes, via rhodium-catalyzed double [2+2+2] cycloaddition. The scope of this method was examined by varying the R<sup>1</sup> and R<sup>2</sup> groups, ranging from electron-deficient to electron-rich groups, to give the corresponding helicenes in good yields (60–73%) and 60–93% ee.

**SYNFACTS Contributors:** Timothy M. Swager, Eilaf Ahmed  
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**Comment:** The authors report a highly enantioselective method of making [7]helicenes containing fluorene, spirofluorene and phosphafluorene. Circularly polarized luminescence properties of these helicenes containing fluorene and spirofluorene are significantly larger than those of known helicene derivatives.