A. VELIAN, M. NAVA, M. TEMPRADO, Y. ZHOU, R. W. FIELD, C. C. CUMMINS*
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A Retro Diels–Alder Route to Diphosphorus Chemistry: Molecular Precursor Synthesis, Kinetics of P_2 Transfer to 1,3-Dienes, and Detection of P_2 by Molecular Beam Mass Spectrometry
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Category

Synthesis of Materials and Unnatural Products

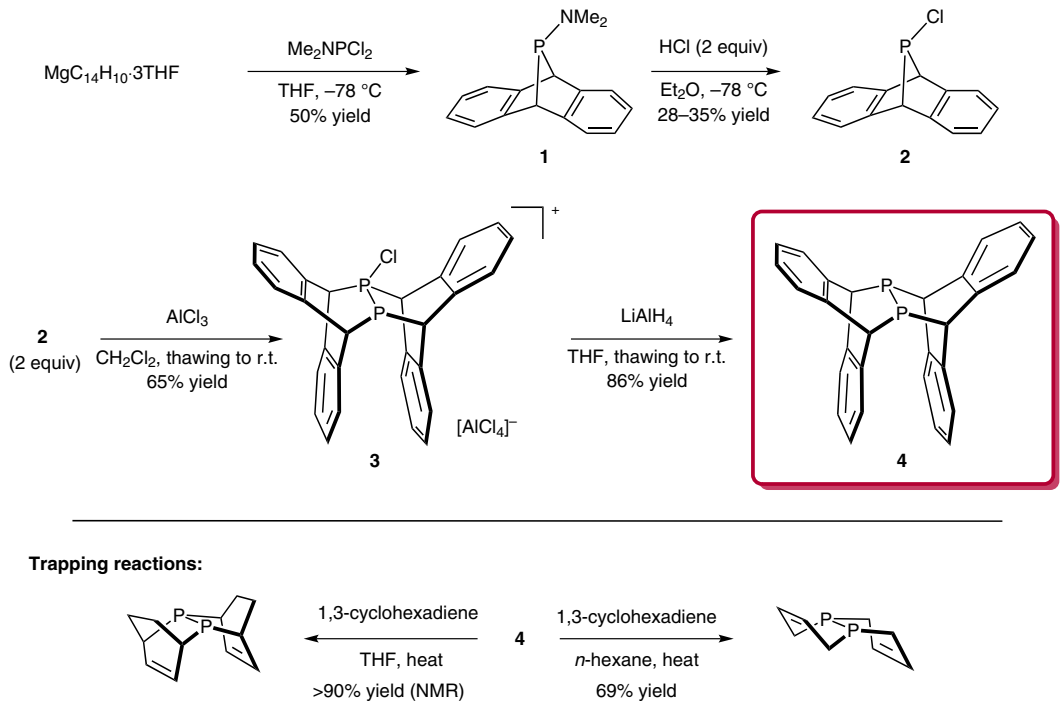
Key words

retro-Diels–Alder reaction

phosphorus

fused ring systems

Pass the P_2



Trapping reactions:

Significance: Cummins and co-workers have developed a novel system for thermally transferring the diphosphorus molecule P_2 from a transannular diphosphorus bisanthracene adduct **4** to various 1,3-dienes via a retro-Diels–Alder reaction.

Comment: Treatment of **4** with platinum ethylene complex $[(C_2H_4)Pt(PPh_3)_2]$ at room temperature furnishes the expected platinum diphosphorus complex $(P_2)[Pt(PPh_3)_2]_2$, broadening the scope of this P_2 precursor to inorganic complexes.

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