



Showcasing research from the BISI-Bonds/CRISOL laboratory of Dr. Shafir and Dr. Cuenca, IQAC-CSIC and IQS-URL, Barcelona, Spain.

B–N axis as a facilitating agent for the synthesis of 3D structures: the paradigmatic case of BN-[4.4.4]propellane

While BN-isosterism has come under spotlight as a tool for diversifying and tuning 2D π -extended organic structures, systematic BN-mapping of 3D sp^3 - sp^3 architectures remains largely unexplored. This work presents a direct pathway to such 3D BN-cores by disrupting the π -bond of a B=N unit. A BN-centered [4.4.4]propellane is rapidly assembled through polar B=N 1,2-diallylation, followed by a stereoconvergent ring-closing metathesis to forge the propellane cage. The cover art, inspired by the intricate framework of traditional Catalan *castellers* human towers, reflects this cooperative three-ring construction.

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As featured in:



See Ana B. Cuenca, Alexandr Shafir *et al.*, *Chem. Sci.*, 2025, **16**, 22970.