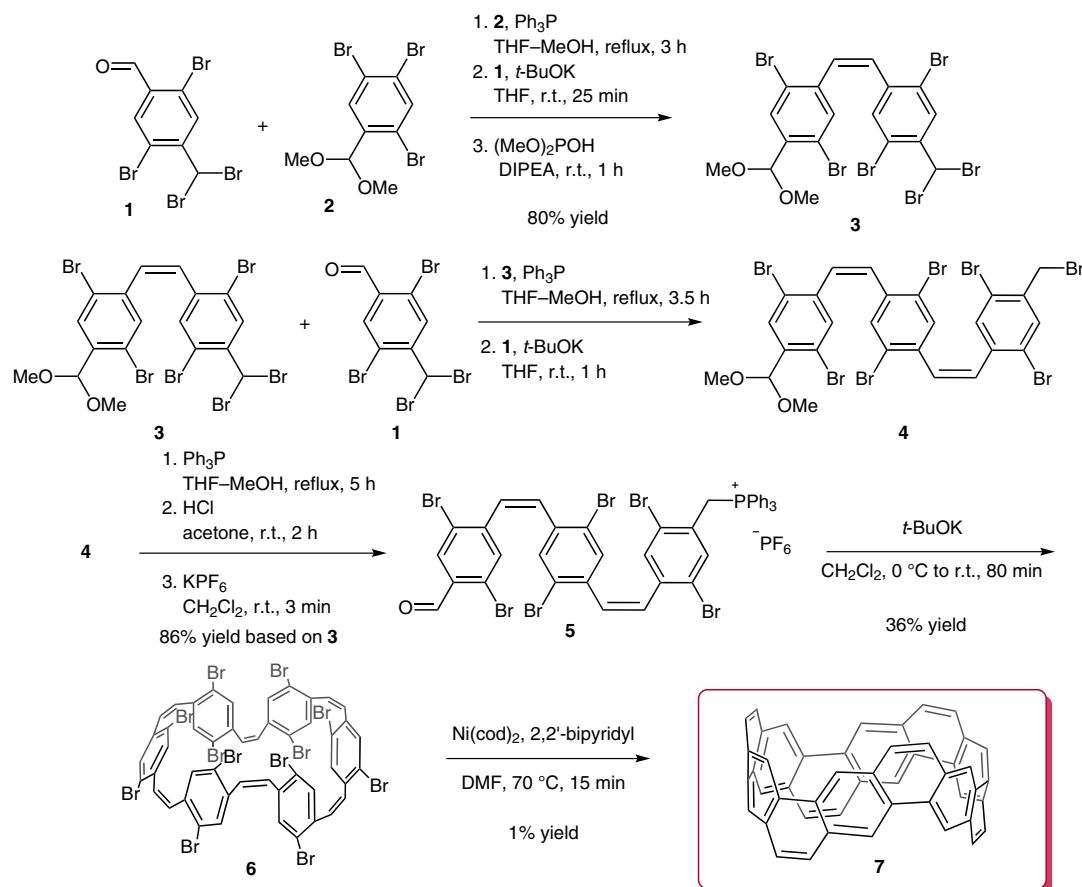


Nanobelt Mission Accomplished: A Loop of 12 Fused Edge-Sharing Benzenes



Significance: The synthesis of a fully fused carbon nanobelt (**7**) — a belt segment of a (6,6)carbon nanotube — has been a long-lasting goal in materials science. Segawa, Itami, and co-workers have now reported on the successful bottom-up synthesis of such a carbon nanobelt, a closed loop of 12 fully fused edge-sharing benzene rings. The synthesis starts with several consecutive Wittig reactions. In the final step, a $\text{Ni}(\text{cod})_2$ -mediated aryl–aryl coupling reaction prompts the formation of the new fully fused arene system.

Comment: The authors studied in detail the optoelectronic and structural properties of this ‘shortest armchair carbon nanotube’. Besides verifying the rigid cylindrical shape of this carbon nanobelt through X-ray crystallography, its photophysical characterization combined with theoretical calculations confirmed the structural rigidity of this fully conjugated arene system. The synthesis of this belt of 12 edge-sharing benzene rings may pave the way towards a precisely controlled single-chirality bottom-up synthesis of (6,6)carbon nanotubes.