Construction of Chiral Propeller Architectures from Achiral Molecules

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COLLABORATION — Achiral BPCA-Cn-PmOHs construct chiral propeller structures in an N phase. The origin of chiral N phases in these achiral molecules comes from the twisted conformation of head-to-head dimers, indicating that neither molecular chirality, nor molecular bends, nor molecular tilting is necessary to form a chiral phase. The Frank-Pryce spherulitic N droplets and finger-print textures result from the single-twisting of chiral conformers, while the first-time observed propeller-patterned chiral N droplets are attributed to the double-twisting of chiral conformers in the N phase.