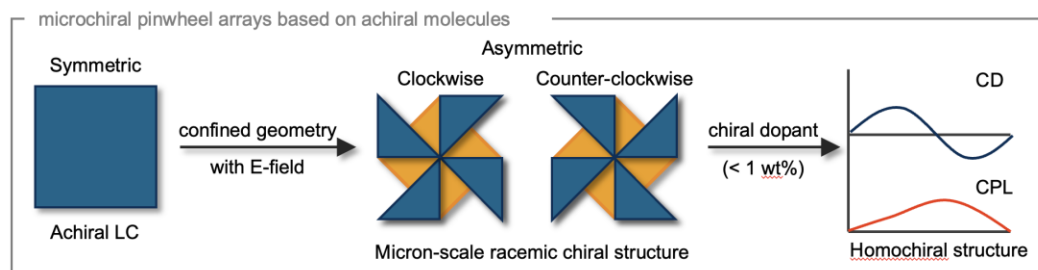


Microchiral pinwheel arrays based on achiral molecules

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Chirality is the simple analogy of left and right hands—objects that are mirror images of one another but cannot be superimposed. From a molecular perspective, chirality is manifested in the intrinsic asymmetry of atomic arrangements that cannot be superimposed on their mirror images. But paper pinwheels can be folded to have either clockwise or counterclockwise shape from the achiral square sheet. Like this way, the achiral molecules at nanometer scale can be assembled to have micron-scale chiral structures using the confined geometries and electric field application. The chiral microstructures serve as a template yielding a permanent polymer scaffold that can transfer its chirality to achiral photoluminescent materials. This approach provides a simple and scalable route to generate macroscopic chiral optical materials from molecularly symmetric precursors.



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