

## Polar Self-assembled Materials

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### Abstract.

Subphthalocyanines (SubPcs)<sup>[1]</sup> are singular cone-shaped molecules with unique physicochemical properties that render them promising light-harvesting and/or donor units for photovoltaic and light-emitting applications. We were very interested in studying if such molecules could be organized in columnar stacks, both in solution<sup>[2]</sup> and liquid-crystalline phases<sup>[3]</sup> by hydrogen-bonding and  $\pi$ - $\pi$  stacking interactions. The columnar aggregation of these non-planar molecules with axial dipole moments represents in itself a challenging task. Our motivation comes from the possibility of obtaining supramolecular chiral nanofibers and condensed phases that can be aligned in the presence of electric fields, yielding nanomaterials with permanent polarization and unusual ferroelectric and piezoelectric properties.

### References

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### Figures

