

3D Printing With Light For Light

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We develop high-resolution 3D printing processes based on two-photon polymerization lithography (TPL) to create 100-nm scale structures for controlling light [1]. We print structural colors from low-and-high-index dielectric materials [2] and integrate them with micro-optical elements for applications in optical security [3], holographic prints, and enhanced information content.

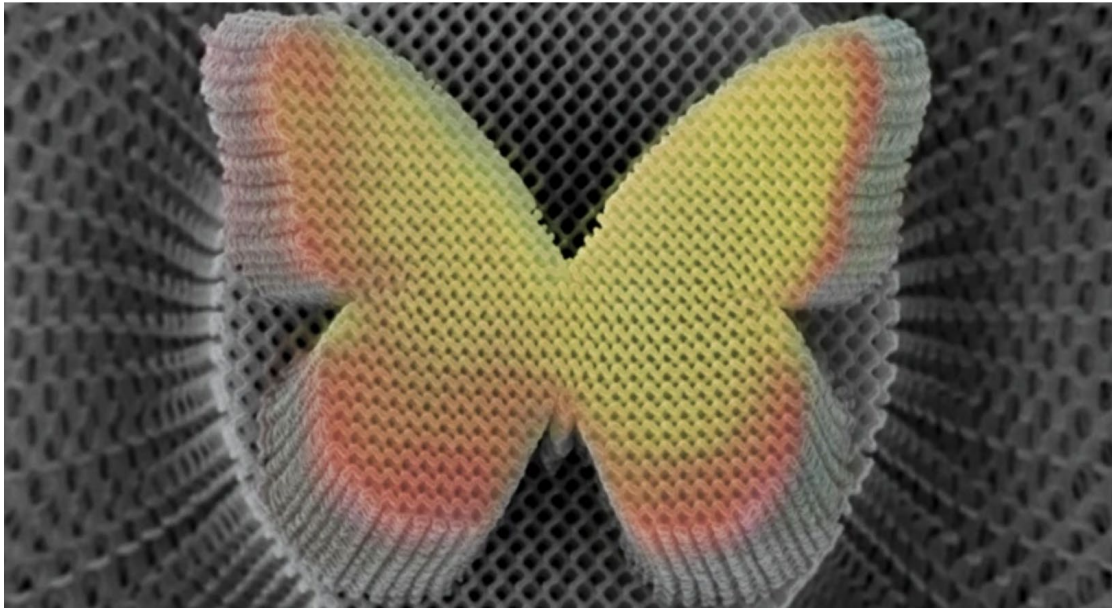


Fig. 1 Gyroid photonic crystals of TiO₂ in the shape of a butterfly that exhibit optical chirality under visible light, with minimum feature size of ~100 nm [2].

References

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- [2] Zhang, W., Min, J., Wang, H. *et al.* Printing of 3D photonic crystals in titania with complete bandgap across the visible spectrum. *Nat. Nanotechnol.* 19, 1813–1820 (2024)
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