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Two-dimensional Chiral Imprinting PETR SHIBAEV, CRISTINA SCHLESIER, ROBERT UHRLASS, BENJAMIN CROOKER, Fordham University, IGOR YAMINSKY, Moscow State University, MOSCOW STATE UNIVERSITY COLLABORATION — Chirality is commonly defined for three dimensional objects and manifests itself, for instance, in optical activity of chiral molecules and polarization of microwaves reflected from three dimensional structures. Here we report two dimensional chiral structures created on the flat transparent substrate by simple nanoimprinting technique. The geometry of the printed structures with a thickness not exceeding a few nanometers represents a repetitive pattern of chiral triangles. These structures display optical activity by rotating a plane of polarization and changing ellipticity of the refracted light beam (with the wavelengths of 532nm and 630nm). The peculiarities of the changes in polarization are discussed in terms of the geometry of the triangles and dielectric properties of the deposited material. The model explaining the behavior of the imprinted lattice is suggested.

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