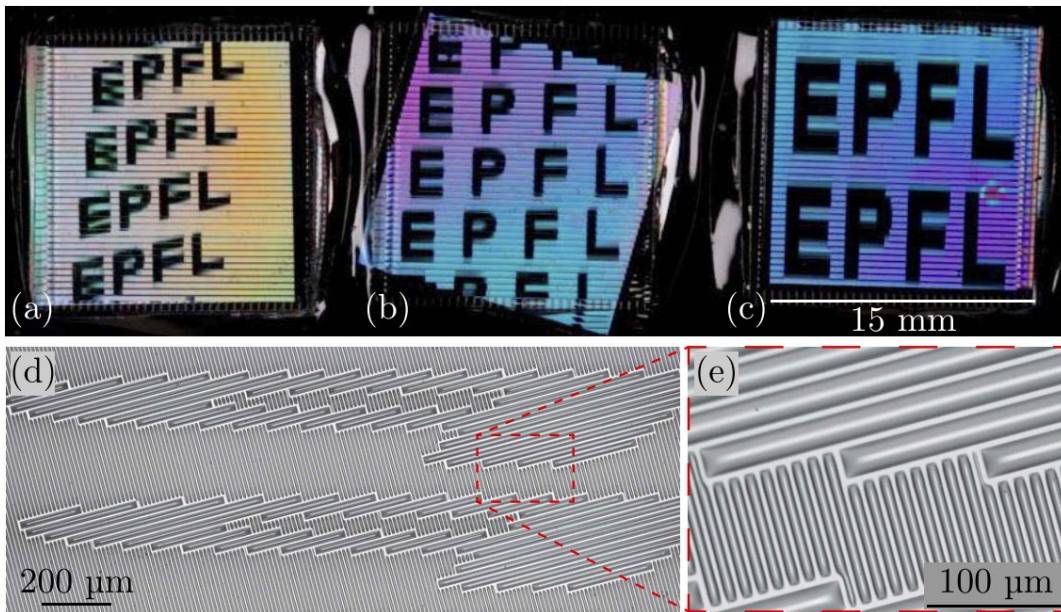


Synthesis of moving and beating moiré shapes



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Diffraction 1D moirés formed by a horizontal revealer lenslet grating of repetition period 400 μm , of base layer shape foreground (inside) lenslets of period (a) 16 μm horizontal, (b) 27 μm at 15°, (c) 27 μm horizontal and of base layer shape background (outside) lenslets of period (a) 8 μm vertical, (b) 12 μm at 105°, and (c) 12 μm vertical. (d) Optical micrograph of the letter "P" within the base of (b), where the text in the base is mirrored to obtain a correctly-oriented text when looking through the revealer. (e) Magnified area of (d)

Description

The invention proposes a method for producing an authenticable moiré shape that simultaneously moves and shows a beating effect. The method relies on a combination of the 1D or the 2D moiré and the level line moiré. When tilting a compound showing such a moiré, the moiré shape moves, its intensity levels change significantly but its shape remains the same and is recognizable. It is made of a base layer consisting of patterned metallic tiny shapes and a revealing layer made of a 1D array of cylindrical lenslets or of a 2D array of spherical or aspherical lenslets.

The process flow for the fabrication of this products is a combination of metal etching and mold fabrication. After that, mold filling is pressed and aligned, set with UV

imprinting and finally demolded from the glass.

Advantages

- Combines 1D or 2D moiré and the beating effect present in the level-line moiré
- Synthesis of very fine geometric structures laid out at specific angular relationships
- Manufacturing with industrial processes
- Safer than common moiré

Applications

- Security
- Decoration