Fast and large-area fabrication of plasmonic reflection color filters by achromatic Talbot lithography - DTU Orbit (31/03/2019)

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To overcome the limits of traditional technologies, which cannot achieve high resolution and high throughput simultaneously, here we propose, to the best of our knowledge, a novel method, i.e., achromatic Talbot lithography, to fabricate large-area nanopatterns fast and precisely. We successfully demonstrate reflection color filters with a maximum size of about 0.72 × 0.72 mm² with a time of only 20 s that have colors similar to simulations and small-area devices fabricated by electron beam lithography. These results indicate the possibility of large-scale fabrication of plasmonic color filters with high resolution efficiently by the achromatic Talbot lithography method.