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Quantum lithography beyond the diffraction limit via Rabi-oscillations[1] ZEYANG LIAO, Institute for Quantum Studies and Department of Physics and Astronomy, Texas A&M University, College Station, TX 77843-4242, USA, MOHAMMAD AL-AMRI, The National Center for Mathematics and Physics, KACST, P.O.Box 6086, Riyadh 11442, Saudi Arabia, M. SUHAIL ZUBAIRY, Institute for Quantum Studies and Department of Physics and Astronomy, Texas A&M University, College Station, TX 77843-4242, USA — We propose a quantum optical method to do the sub-wavelength lithography. Our method is similar to the traditional lithography but adding a critical step before dissociating the chemical bound of the photoresist. The subwavelength pattern is achieved by inducing the multi-Rabi-oscillation between the two atomic levels. The proposed method does not require multiphoton absorption and the entanglement of photons. This method is expected to be realizable using current technology.

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Zeyang Liao
Institute for Quantum Studies and Dept of Physics and Astronomy,
Texas A&M University, College Station, TX 77843-4242, USA

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