

Abstract Submitted
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Mixed-Color Multiphoton Transitions as Additional Quantum Channels for Electron Photoemission¹ WAYNE HUANG, MARIA BECKER, JOSHUA BECK, HERMAN BATELAAN, University of Nebraska-Lincoln — We demonstrate mixed-color electron photoemission from tungsten nanotips. In the experiment, second-harmonic photons were introduced to modify the multiphoton emission process. A twofold increase in quantum efficiency results from the opening up of an additional three-photon quantum channel. The super-additive photoelectron signal can be controlled by input power, field polarization, and pulse overlap. The results of our study provide new prospects for quantum photonics, multiphoton microscopy, and spin-polarized electron sources.

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