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Photoconductance measurments of patterned nanocrystal films on gold nanojunctions KENNETH EVANS, Applied Physics Ph.D. Program, Rice University, SRAVANI GULLAPALLI, MICHAEL WONG, Department of Chemical and Biomolecular Engineering, Rice University, DOUGLAS NATELSON, Department of Physics & Astronomy, Rice University — Large scale production of nanoscale absorbers and emitters based on single, or few, colloidal nanocrystals would be an important advancement for light-based electronics and investigating poorly understood quantum phenomena such as blinking. We present a method for integrating nanocrystals into plasmonically-active gold nanogaps by way of lithographic patterning of nanocrystal films. Initial photoconductance measurements in nanocrystal-based devices are compared with bare gold junctions and the possibility for plasmon-assisted absorption and emission is discussed.

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