

Abstract Submitted
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Giant upconversion of photoluminescence in semiconductor heterostructures¹ ANGELO MASCARENHAS, BRIAN FLUEGEL, National Renewable Energy Laboratory, DAVID SNOKE, Dept. of Physics and Astronomy, University of Pittsburgh, GAMANI KARUNASIRI, Dept. of Physics, Naval Postgraduate School, LOREN PFEIFFER, Bell Laboratories, Lucent Technologies — Photoluminescence (PL) upconversion is observed in GaAs/AlGaAs multiple quantum wells at photon energies up to 90 meV above the exciting laser and with an efficiency up to 27% relative to normal Stokes PL excited from the two-dimensional continuum. The effect is due to electric field-induced bipolar tunneling.

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Angelo Mascarenhas
National Renewable Energy Laboratory

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