

Abstract Submitted  
for the MAR09 Meeting of  
The American Physical Society

**Stress Induced Splitting of Polariton States in Semiconductor Microcavities** BRYAN NELSEN, RYAN BALILI, DAVID SNOKE, University of Pittsburgh, LAUREN PFEIFFER, KENNETH WEST, Bell Labs, Lucent Technologies, BELL LABS, LUCENT TECHNOLOGIES COLLABORATION — Photoluminescence and reflectance measurements of microcavity polaritons indicate that there is an energy splitting of the lower polariton branch on the order of 10 to 100  $\mu\text{eV}$ . When stress is applied with a pin to the microcavity samples, this energy splitting is found to increase. The states have varying degrees of polarization which depend on the applied stress. Experimental results will be presented, along with theoretical mechanisms that may cause such a splitting. These results may have implications for the spontaneous emission of polarized light associated with the Bose-Einstein condensation transition observed in microcavity polaritons.[1]

1. R. Balili, V. Hartwell, D.W. Snoke, L. Pfeiffer and K. West, Science 316, 1007 (2007).

Bryan Nelsen  
University of Pittsburgh

Date submitted: 23 Nov 2008

Electronic form version 1.4