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**Enhanced Raman Scattering Near the Tip of Semiconducting Nanowires** QIUJIE LU, JIAN WU, AWNISH GUPTA, Department of Physics, Penn State University, PETER EKLUND, Department of Physics, Department of Materials Science and Engineering, Penn State University — Results of polarized microRaman scattering experiments are presented on individual  $\sim 20\mu\text{m}$  long crystalline GaP zinc-blende nanowires (NWs) as a function of the probe beam position along the wire. The probe beam had a spot size of  $\sim 0.7\mu\text{m}$ . The NWs were characterized by TEM lattice images and selected area diffraction (SAD) patterns. We found enhanced LO and TO phonon scattering near the tip of the nanowire, i.e., the scattering is at least a factor of 5x stronger at the tip than observed at distances many microns away from the tip. The polarized scattering patterns  $I(\theta)$ , where  $\theta$  is the angle between the incident electric field and the NW axis, also change as the probe beam approached the tip of the nanowires. The effects observed here should be general and apply to other semiconducting nanowire systems as well.

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