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Raman Stress Mapping of CdS Nanosheets M. MONTAZERI, J.M. YARRISON-RICE, L.M. SMITH, H.E. JACKSON, University of Cincinnati, H. RHO, Y. LEE, Chonbuk National University, Y.J. CHOI, J. CHOI, J.G. PARK, Korea Institute of Science and Technology — We present results of spatially-resolved room temperature second order Raman scattering measurements for single ~ 3 micron wide CdS nanosheets. The sheets, grown by pulsed laser deposition using vapor-phase transport, are uniform in size and shape and exhibit hexagonal wurtzite structure. The orientation of the c-axis is determined by Raman polarization analysis. Spatially-resolved Raman scattering reveals a stress gradient across the nanosheets, with the 2LO phonon energy at the center of nanosheet being higher by $\sim 2 \text{ cm}^{-1}$ with respect to the edges which indicates that nanosheets are relaxed at the edges with a strain gradient toward the center. Support provided by NSF (#0701703 and #0806700), Korea Research Foundation and KIST.

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