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**Enhanced Raman Scattering from InSb Nanodots; Temperature and Laser-Power Dependent Studies** NOBORU WADA, HARUKI TAKAYAMA, SATOSHI MOROHASHI, Fac. Eng. and Sci., Toyo University — InSb nanodots were uniquely fabricated by vapor-transport on a Si substrate which had previously been bombarded by FBI Ga ions. The InSb nanodots were then examined by spatially-resolved Raman scattering using an Ar-ion laser ($\lambda$= 514.5 and 488 nm with P=1$\sim$15 mW) with an optical microscope and CCD detector. In addition to the TO and LO peaks of InSb observed at $\sim$180 and 191 cm$^{-1}$ respectively, two peaks were observed at $\sim$110 and 150 cm$^{-1}$. Those Raman peaks were tentatively attributed to the 2TA and TO-TA second-order Raman processes. Those two peak intensities appeared to grow at the expense of the TO and LO Raman peak intensities with increasing the sample temperature from 10 K to 450 K. Also, the two-phonon peak intensities increased non-linearly with the probing laser power used. Hot carriers and their interactions with phonons in the restricted regions will be discussed together with Raman scattering results obtained from single-crystal InSb.

Noboru Wada
Fac. Eng. and Sci., Toyo University

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