

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Raman investigation of molybdenum disulfide with different polytypes JAE-UNG LEE, KANGWON KIM, SONGHEE HAN, Sogang University, GYEONG HEE RYU, ZONGHOON LEE, UNIST, HYEONSIK CHEONG, Sogang University — The Raman spectra of molybdenum disulfide (MoS_2) with different polytypes are investigated. Although 2H- MoS_2 is most common in nature, the 3R phase can exist due to a small difference in the formation energy. However, only a few studies are reported for the 3R phase, and most studies have focused on the 2H phase. We found the 2H, 3R and mixed phases of exfoliated few-layer MoS_2 from natural molybdenite crystals. The crystal structures of 2H- and 3R- MoS_2 are confirmed by the HR-TEM measurements. By using 3 different excitation energies, we compared the Raman spectra of different polytypes in detail. We show that the Raman spectroscopy can be used to identify not only the number of layers but also the polytypes of MoS_2 .

Jae-Ung Lee
Sogang Univ

Date submitted: 05 Nov 2015

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