

ES-005

<Invited Talk>

Physical Properties of MoS₂

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Among recently discovered 2-dimensional materials, molybdenum disulfide has fascinating physical properties. It is atomically thin and is a semiconductor with with a similar level of bandgap with silicon. Especially, its properties get interesting when it becomes thinner. Its bandgap goes through bandgap transition from indirect to direct gap. Also its gap size increases as its thickness decreases. In this talk, I am going to present our recent work on characterization of its electrical and optical properties. We used Raman and PL spectroscopy to observe its property dependence on thickness. We fabricated electrical devices to study optimal condition for MoS₂ devices. Also we synthesized large-area MoS₂ films for devices applications.

Keywords: MoS₂, bandgap, physical property