ALLOY ENGINEERING OF TWO-DIMENSIONAL TRANSITION METAL DICHALCOGENIDE

Two-dimensional (2D) transition metal dichalcogenide (TMD) materials with atomically thin thickness receive great attention in recent years due to its advantageous properties, including direct band gap, large excitonic effects and valley-related physics. By making ternary alloys of TMDs, the band gap, spin-orbit coupling, phonon modes and exciton fine-structure can be engineered. Subsequently, the intra- and inter-valley dynamics (mainly excitonic recombination) can be modulated via varying the doping concentration. By designing the alloys, valley polarization can be enhanced. In addition, heteroatoms such as magnetic dopants can also be introduced to the TMD lattice, which is promising to endow new properties to the TMD system.

Date: 26 July 2019
Time: 3.00 PM
Venue: MAS EC ROOM 1, MAS ATRIUM, Level 3, SPMS
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