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The Interlayer Resistance of a Misoriented Bilayer MoS₂ Interface KUAN ZHOU, UC Riverside, DARSHANA WICKRAMARATNE, UC Santa Barbara, SUPENG GE, ROGER LAKE, UC Riverside — The performance of electrical and opto-electronic devices with vertically stacked transition metal dichalcogenides (TMDCs) has been found to be degraded by the rotated interface between bilayer system. The band properties and interlayer coupling have been researched experimentally and computationally, however, the dependence of the interlayer resistance on the disorientation angle of the two layers forming bilayer MoS₂ remains unknown. Ab-initio methods combined with non-equilibrium Greens functions are used to calculate the transport properties of the misoriented bilayer MoS₂ system. The energy and angle dependence of the interlayer resistivity is determined. The difference between the electron and hole transmission properties is analyzed. The influence of spin polarization in the K valleys of the TMDC system is also been discussed.

Kuan Zhou
UC Riverside

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