Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500107

Webinar

Towards barrier-free contacts to monolayer transition metal dichalcogenides

Sachin Gupta

Kyoto University, Japan

Broken inversion symmetry and time-reversal symmetry along with large spin-orbit interactions in monolayer transition metal dichalcogenides (TMDs) make them ideal candidates for novel valleytronic /spintronic applications[1]. Although successful spin transport and detection are very crucial for spintronic/valleytronic devices, electrical spin transport and spin detection due to spin-valley polarization in TMDs is still lacking. An electrical realization of spin transport and detection in TMDs demand perpendicular magnetic anisotropic (PMA) electrodes with very small Schottky barrier height (SBH). In this talk, I'll discuss our recent results on very low SBH in monolayer MoS_2 field effect transistor using PMA electrodes[2].

References:

1. J. R. Schaibley et al., Nat. Rev. Mater. 1, 16055 (2016).
2. S. Gupta et al. NPG Asia Materials 13, 13 (2021).

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4:00 PM