



SEMINAR

Recent progress in contact resistance between semimetal and monolayer semiconductors

- Date:** 19 April, 2023 (Wednesday)
Time: 9:30 a.m.
Venue: Room 7-34, Haking Wong Building, HKU
- Speaker:** Mr. Ni Yang (PhD candidate)
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Abstract:

The development of advanced beyond-silicon electronic technology requires better channel materials and ultralow-resistance contacts. Transition-metal dichalcogenides can realize the transistor scaling to the end of road map and provide the possibility to realize high performance electronic devices. Own to metal-induced gap states (MIGS), the energy barrier induced by the metal-semiconductor interface fundamentally induces poor current-delivery capability and high contact resistance. Furthermore, comparing to the covalently bonded metal-semiconductor junctions, the contact resistance of metal-semiconductor has not surpassed that of the covalently bonded metal - semiconductor junctions because of the intrinsic van der Waals gap. In this seminar, the recent progress of the electric contact of monolayer molybdenum disulfide with semimetal will be reported. The large-area device arrays with semimetal/Two-dimensional semiconductor contact can approach the quantum limit and exhibit excellent electrical performance, variability and stability. This shows a promising contact technology for transition-metal-dichalcogenide-based electronics beyond silicon.

ALL INTERESTED ARE WELCOME

For further information, please contact Prof. Lance Li at 3910 2657.