Degenerate N Doping Of Few Layer Transition Metal

Integration of 2D Materials for Electronics Applications Electrical Atomic Force Microscopy for Nanoelectronics Two-Dimensional Transition-Metal Dichalcogenides Preparation and Properties of 2D Materials Nanoscale Materials for Warfare Agent Detection: Nanoscience for Security Valleytronics In 2d Materials Handbook of Graphene, Volume 3 Advanced Nanoelectronics Tunneling Field Effect Transistor Technology System-Materials Nanoarchitectonics Nanotechnology and Nanomaterials for Energy Preparation and application of 0D, 2D and 3D molybdenite: a review Two-Dimensional Electronics and Optoelectronics Two Dimensional Transition Metal Dichalcogenides 2D Materials and Van der Waals Heterostructures Delta-doping of Semiconductors Advanced Electrical and Electronics Materials FinFET Devices for VLSI Circuits and Systems Metal Oxide Nanoparticles and Polymer Nanocomposites for Organic Electronic Devices VLSI Design Theory and Practice

Degenerate doping in semiconductors *Topological effects in metals - Moore* **Semiconductors, Insulators \u0026 Conductors, Basic Introduction, N type vs P type Semiconductor** ~~TIMELAPSE OF THE FUTURE: A Journey to the End of Time (4K)~~ Kaamelott Livre I - Tome 1 / [ENG SUB] ~~Ellen and First Lady Michelle Obama Go to CVS~~ ~~Classification of Semiconductors (Intrinsic/Extrinsic, P Type/N Type)~~ Parity-Time and Other Symmetries in Optics and Photonics *Ellen and Michelle Obama Break It Down* **Doping and Band Diagrams** The Facinating Quantum World of Two-dimensional Materials *Elvis: The Final Hours* The Secrets Of Quantum Physics with Jim Al-Khalili (Part 2/2) | Spark Semiconductor Exciton Polaritons P-type, N-type semiconductors and P-N junction concept for Dummies How does a Diode Work? A Simple Explanation | How Diodes Work | Electrical4U ~~Band theory (semiconductors) explained~~ *Carrier Concentrations in Intrinsic, P-type and N-type semiconductors* Higher Physics - Semiconductors 1: intrinsic \u0026 extrinsic semiconductors Bose-Einstein condensation of organic exciton-polaritons | Stéphane Kéna-Cohen ~~Semiconductor Doping, Degenerate Doping \u0026 an Intoduction to the Poisson Equation~~ Discovery of the Chiral Majorana Fermion: Shoucheng Zhang ~~Mod 01 Lec 04 Doping in Semiconductors~~ *Doping of Semiconductors* ~~RKKY Interactions on Dirac Surfaces by Herbert A Fertig~~ ~~Doping in Semiconductors (PHY)~~ ~~Degenerate N Doping Of Few~~

We report here the first degenerate n-doping of few-layer MoS2 and WSe2 semiconductors by surface charge transfer using potassium. High-electron sheet densities of ~1.0 × 1013 cm-2 and 2.5 × 1012 cm-2 for MoS2 and WSe2 are obtained, respectively.

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Degenerate n-Doping of Few-Layer Transition Metal Dichalcogenides by Potassium

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The potassium doping was achieved by physical vapor deposition onto pre-patterned devices so that electrical measurements could be taken without exposing the devices to air. As one might expect, potassium deposition engenders strong n-type doping and yields massive 2D electron concentrations of ~1.0 × 10 13 cm -2 for K-doped MoS 2 and 2.5 × 10 12 cm -2 for K-doped WSe 2 .

~~Literature Review: Degenerate n-Doping of Few-Layer ...~~

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~~Figure 2 from Degenerate n-doping of few-layer transition ...~~

Literature Review: Degenerate n-Doping of Few-Layer Transition Metal Dichalcogenides by Potassium July 29, 2015 July 29, 2015 / druffeldan / Leave a comment The article I am reviewing is called “Degenerate n-Doping of Few-Layer Transition Metal Dichalcogenides by Potassium” (full citation below).

~~Degenerate doping | 2D materials~~

A degenerate semiconductor is a semiconductor with such a high level of doping that the material starts to act more like a metal than as a semiconductor. Unlike non-degenerate semiconductors, these kind of semiconductor do not obey law of mass action, which relates intrinsic carrier concentration with temperature and bandgap.

~~Degenerate semiconductor - Wikipedia~~
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CiteSeerX - Document Details (Isaac Councill, Lee Giles, Pradeep Teregowda): ABSTRACT: We report here the first degenerate n-doping of few-layer MoS 2 and WSe 2 semiconductors by surface charge transfer using potassium. High-electron sheet densities of ~1.0 × 10 13 cm −2 and 2.5 × 10 12 cm −2 for MoS 2 and WSe 2 are obtained, respectively.

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In this work, we fabricated few-layer WSe 2 FETs with different contact metals (Ti, Co, and Pt) with significant differences in work function and investigated the chemical doping effect by hydrazine solution. Our n-doping process by the dipping method in solution is facile and simple compared to other methods [8–11]. The results show that for Ti- and Co-contacted FETs, hydrazine treatment makes them strongly n-type, and for Pt-contacted FETs, the pristine p-type was converted to n-type.