

Degenerate N Doping Of Few Layer Transition Metal

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Degenerate N Doping Of Few

Doping (semiconductor) - Wikipedia

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

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Degenerate semiconductor - Wikipedia

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Reversible electron doping in monolayer WS₂ via a chemical ...

Doping of Two-Dimensional Semiconductors: A Rapid Review ...

Degenerate n Doping of Few-Layer Transition Metal ...

Non-degenerate n-type doping by hydrazine treatment in ...

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

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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 n Doping of Few Layer Transition Metal ...~~

CiteSeerX - Document Details (Isaac Council, Lee Giles, Pradeep Teregowda): ABSTRACT: 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 $\sim 1.0 \times 10^{13} \text{ cm}^{-2}$ and $2.5 \times 10^{12} \text{ cm}^{-2}$ for MoS₂ and WSe₂ are obtained, respectively.

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degenerate n-doping of MoS₂ and WSe₂. Specifically, we use potassium as an efficient surface n-dopant and achieve a high electron sheet density of $\sim 1.0 \times 10^{13} \text{ cm}^{-2}$ in MoS₂ and $2.5 \times 10^{12} \text{ cm}^{-2}$ for WSe₂. We also for the first time demonstrate few-layer WSe₂ n-FETs with electron mobility of $\sim 110 \text{ cm}^2/\text{V}\cdot\text{s}$ by

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~~Doping (semiconductor) - Wikipedia~~

[21] Fang, H, Tosun, M, Seol, G, Chang, T C, Takei, K, Guo, J and Javey, A 2013 Degenerate n-Doping of Few-Layer Transition Metal Dichalcogenides by Potassium Nano Lett. 13 1991 -5 [22] Fang , H , Chuang , S , Chang , T C , Takei , K , Takahashi , T and Javey , A 2012 High-Performance Single Layered WSe₂ p-FETs with Chemically Doped Contacts Nano Lett .

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

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Figure 2. Top-gated few-layer WSe₂ n-FETs with chemically doped contacts. (a) Schematic of a top-gated few-layer WSe₂ n-FET, with chemically n-doped S/D contacts by K exposure. (b) Transfer characteristics of a 3-layer WSe₂ device ($L \sim 6.2 \mu\text{m}$) as a function of K exposure time. The black curve is before doping, while the other curves from bottom to top are after 1, 20, 40, 70, and 120 min ...

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Fang H, Tosun M, Seol G, Chang T C, Takei K, Guo J and Javey A 2013 Degenerate n-doping of few-layer transition metal dichalcogenides by potassium Nano Lett. 13 1991-5. Crossref. Zao W, Ghorannevis Z, Amara K K, Pang J R, Toh M, Zhang X, Kloc C, ...

~~Degenerate semiconductor - Wikipedia~~

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In semiconductor production, doping is the intentional introduction of impurities into an intrinsic semiconductor for the purpose of modulating its electrical, optical and structural properties. The doped material is referred to as an extrinsic semiconductor. A semiconductor doped to such high levels that it acts more like a conductor than a semiconductor is referred to as a degenerate ...

~~Ting Chia CHANG | Stanford University, CA | SU ...~~

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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 $\sim 1.0 \times 10^{13} \text{ cm}^{-2}$ and $2.5 \times 10^{12} \text{ cm}^{-2}$ for MoS₂ and WSe₂ are obtained, respectively.

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In line with our assumption, efficient degenerate n-doping of WSe₂ FETs were achieved via vacuum deposition of [RuCp*(mes)]₂ on the WSe₂ surface (). The device characterizations of a representative bilayer WSe₂ FET are shown in Fig. 2a, b, c, and d. The bilayer nature of the exfoliated WSe₂ flake configured for the device was confirmed by the Raman spectrum, and an atomic force microscope ...

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Degenerate n-doping of few-layer transition metal dichalcogenides by potassium. Fang H(1), Tosun M, Seol G, Chang TC, Takei K, Guo J, Javey A. Author information: (1)Electrical Engineering and Computer Sciences, University of California, Berkeley, California 94720, USA.

~~Non-degenerate n-type doping by hydrazine treatment in ...~~

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The article I am reviewing is called "Degenerate n-Doping of Few-Layer Transition Metal Dichalcogenides by Potassium" (full citation below). The work comes out of *Ali Javey's group at Berkeley in collaboration with **Jing Guo at the University of Florida. Essentially, they find that doping with potassium changes the work function of MoS₂ and WSe₂ and...

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n- or p-type doping of some TMDs can be carried out by decorating with substances with ultra low or high work function. For instance, degenerate n-doping of few-layer WSe₂ and MoS₂ was performed by surface charge transfer using potassium [29]. Also, transition metal oxides such as MoO_{3-x} [30] and WO_{3-x} [31],

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