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【168】 Distinct electronic structure of novel intercalated series 2H-V_xTaS₂

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Layered transition metal dichalcogenides are an example of the van der Waals (vdW) materials, hosting many interesting states of matter like charge density wave ordering and superconductivity. In many vdW systems, the material properties can be profoundly and surprisingly sensitive to seemingly minor changes in composition or structure. Currently we are investigating vanadium intercalated V_xTaS₂. Despite the very dilute concentration of vanadium ($x \leq 0.05$), our preliminary results show significant changes in the Fermi surface topology and band composition compared to the parent 2H-TaS₂. The discovered spectral features indicate the substantial influence of new c-axis ordering and inter-layer interactions on the electronic properties of the system.

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