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Magnetic, transport, and electronic properties of V-intercalated 2H-NbS2 DEEPAK SAPKOTA, NICK SIRICA, RUPAM MUKHERJEE, MICHAEL KOEHLER, GANESH POKHAREL, PAOLO VILMERCATI, NORMAN MANNELLA, Univ of Tennessee, Knoxville, DAVID MANDRUS, Univ of Tennessee, Knoxville/ Oak Ridge National Laboratory — Intercalation of transition metal dichalcogenides (TMDs) by 3d or 4d transition metal elements is of considerable interest because the foreign atoms play an important role in the physical properties of host TMDs. The intercalation can cause profound change in magnetic, transport, thermal, and electronic properties of the host TMDs. One of the well-studied intercalated systems is $Cr_{1/3}NbS_2$, which belongs to a non-centrosymmetric hexagonal space group $P6_322$, and it exhibits helical spin order below transition temperature 127 K. To further understand the effect of intercalated species, we synthesized and investigated magnetic, transport, thermal, and electronic properties of V-intercalated NbS_2 ($V_{0.3}NbS_2$). $V_{0.3}NbS_2$ belongs to the P-31m (#162) space group and shows ferromagnetic ordering.

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