

# Growth of V - doped WTe<sub>2</sub> Single Crystals by Self-flux Method

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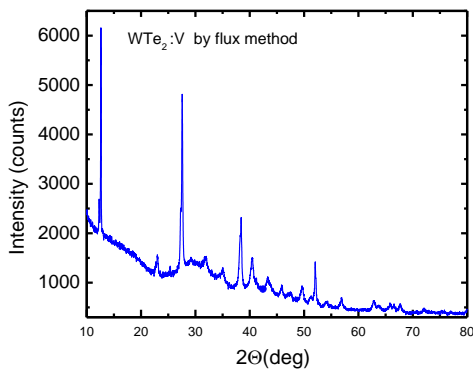
## Abstract

Magnetic element doping is studied with the aim of inducing ferromagnetism in layered 1T'-WTe<sub>2</sub> single crystal [1]. We are attempting to grow V -doped WTe<sub>2</sub> by using flux (high-temperature solution) method. Particularly the self- flux method was used for crystal growth, and tellurium was used as a solvent (flux). The grown crystals were studied by XRD, XPS and Raman spectroscopy. The results are shown on Figures 1-3. Typical for WTe<sub>2</sub> X-ray diffraction patterns and Raman modes were observed. Vanadium incorporation (1.8 at. %) in the crystal structure was detected by XPS measurements. The estimated elemental composition in at. % is shown in the figure confirming the incorporation of vanadium.

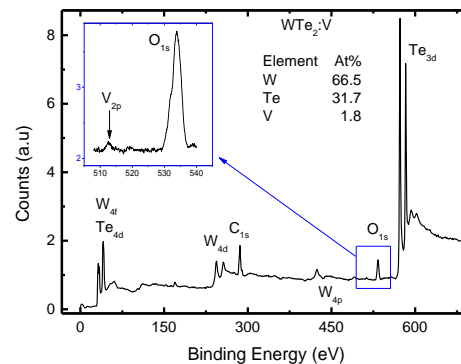
## References

[1] Li Yang, et al., Adv. Funct. Mater., 31 (2021) 2008116

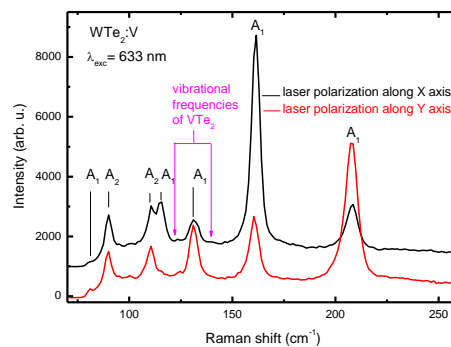
## Figures



**Figure 1:** XRD analysis of WTe<sub>2</sub>:V grown by flux method



**Figure 2:** XPS analysis of WTe<sub>2</sub>:V grown by flux method



**Figure 3:** Raman analysis of WTe<sub>2</sub>: V