

Abstract Submitted
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Effects of 3d magnetic metal substitutions (Fe, Co, Ni) for V on superconducting T_c of the ZrV_2 system¹ WUN-HSIN LEE, D.H. CHEN, K.J. SYU, S.C. CHEN, H.H. SUNG, National Chung Cheng University, W.H. LEE TEAM — The effects of Fe, Co and Ni substitution on the crystallographic data and superconducting transition temperature (T_c) of ZrV_2 have been investigated through powder x-ray diffraction, static magnetization and electrical-resistivity measurements. Variation of the room temperature refined lattice parameters indicate that there is a movement for a and unit cell volume v to decrease, linearly with increasing x up to 0.4, for the $Zr(V_{2-x}T_x)$ ($T = \text{Fe, Co and Ni}$) alloys. Magnetic and electrical measurements show that the superconducting transition temperature (T_c) of ZrV_2 is reduced by the doping of Fe, Co and Ni with depression rate $dT_c/dx \sim -14, -17.5, \text{ and } -15 \text{ K/atom } \%$, respectively. The doping of Co has a larger effect than Fe and Ni on the decrease of T_c .

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