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**Effect of Cu doping on the superconducting properties of  $\text{ZrNi}_{2-x}\text{Cu}_x\text{Ga}$ .** DHARMA RAJ BASAULA, MAHMUD KHAN, Miami University —  $\text{ZrNi}_2\text{Ga}$  is one of the 19 Heusler compounds that exhibit a weakly coupled BCS type-II superconductivity. For all these materials, the van Hove singularities are believed to play an important role in driving the superconductivity. Partial replacement of Zr by Nb resulted in the broadening of the Van Hove singularity and introduced a high degree of disorder in  $\text{Zr}_{1-x}\text{Nb}_x\text{Ni}_2\text{Ga}$ , causing a decrease in the  $T_C$  of the system. So, it is interesting to explore the superconducting properties of  $\text{ZrNi}_{2-x}\text{Cu}_x\text{Ga}$ . Since Cu has one more electron than Ni, the study will allow an understanding of the effect in superconducting properties due to an increase in the valence electron concentrations of the compound. Therefore, we have performed an experimental study on a series of  $\text{ZrNi}_{2-x}\text{Cu}_x\text{Ga}$  compounds by x-ray diffraction, electrical resistivity, dc magnetization and ac susceptibility measurements. In agreement with the parent compound,  $\text{ZrNi}_2\text{Ga}$ , all samples crystallized in the cubic  $L2_1$  Heusler structure. For  $x \leq 0.25$ , all the  $\text{ZrNi}_{2-x}\text{Cu}_x\text{Ga}$  compounds showed superconducting properties with a decrease in  $T_C$ .

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