Effect of Ni substitution on the magnetic properties of Skyrmion

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SUN YAT-SEN UNIVERSITY TEAM — Chiral magnetic lattice shows many ex-
otic physical properties such as spin ice/spin liquid order, topological insulators and
magneto-electric coupling. The chiral magnetic lattice of $\text{Cu}_2\text{OSeO}_3$ exhibits such
kind of unique magnetic ordering where spins form the vortex like ordering called as
Skyrmion. In this poster, the effects of isovalent ion doping on the Skyrmion phase
of $\text{Cu}_2\text{OSeO}_3$ were presented. Polycrystalline $(\text{Cu}_{1-x}\text{Ni}_x)_2\text{OSeO}_3$ ($x=0.0$ to 0.1)
samples were prepared by standard solid-state methods. Temperature and mag-
netic field dependent AC and DC magnetic measurements were performed. The
Curie temperature decreases obviously with increasing Ni concentration by using ac
susceptibility ($\chi_{ac}$-T). Systematic H-T phase diagrams indicating the effects of Ni
doping are established and will be discussed.

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