

Abstract Submitted  
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**Physical properties of i-R-Cd quasicrystals(R = Y, Gd-Tm)<sup>1</sup>** TAI KONG, SERGEY L. BUD'KO, ANTON JESCHE, ALAN I. GOLDMAN, ANDREAS KREYSSIG, KEVIN W. DENNIS, MEHMET RAMAZANOGLU, PAUL C. CANFIELD, Iowa State University / Ames Lab, JOHN MCARTHUR, Quantum Design, Japan — Detailed characterization of recently discovered i-R-Cd (R = Y, Gd-Tm) binary quasicrystals by means of room-temperature powder x-ray diffraction, dc and ac magnetization, resistivity and specific heat measurements will be presented. i-Y-Cd is weakly diamagnetic. The dc magnetization of i-R-Cd (R = Gd, Ho-Tm) shows typical spin-glass type splitting between field-cooled (FC) and zero-field-cooled (ZFC) data. i-Tb-Cd and i-Dy-Cd do not show a clear cusp in their ZFC dc magnetization. ac magnetization measured on i-Gd-Cd indicates a clear frequency-dependence and the third-order non-linear magnetization,  $\chi_3$ , is consistent with a spin-glass transition. The resistivity for i-R-Cd is of order 100  $\mu\Omega$  cm and weakly temperature-dependent. No feature that can be associated with long-range magnetic order was observed in any of the measurements. Characteristic freezing temperatures for i-R-Cd (R = Gd-Tm) deviate from ideal de Gennes scaling.

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