Abstract Submitted
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Unusual electronic transport properties of the intermetallic compounds $RuAl_2$and $RuGa_2$[1] V. PONNAMBALAM, Department of Chemical Engineering and Materials Science, Michigan State University, East Lansing, MI 48824-1226, K. LEIKERT, D.T. MORELLI, Department of Chemical Engineering and Materials Science, Michigan State University, East Lansing, MI 48824-1226 — Semiconductor-like electrical transport has been reported for the title compounds $RuAl_2$ and $RuGa_2$. Band structure calculations performed on these compounds suggest band gap opening or minimum density of states in the vicinity of Fermi level due to the hybridization of d- and sp-bands. The observed transport properties are rather unusual and attributed to band hybridization. Our primary objective is to study these transport properties in detail. We have prepared single phase compounds by a combination of arc melting and subsequent annealing at 950°C - 750°C. Measurements of the electrical resistivity, thermopower and Hall coefficient are being carried out below room temperature. The results of these experiments will be presented and discussed

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