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Superconducting Transition in New Thorium-Nickel-Carbon Ternary Compound $ThNi_4C$ TED GRANT, University of California Irvine, ANTONIO JEFFERSON S. MACHADO[1], EEL - USP - Brazil, CIGDEM CAPAN, ZACHARY FISK, University of California Irvine — Since the discovery of high temperature superconductivity in iron pnictides, there is an emphasis on finding new Co, Ni, or Fe based superconductors. We have synthesized for the first time $ThNi_4C$ that is in the hexagonal $CaCu_5$ prototype structure. We discovered bulk superconductivity in $ThNi_4C$ that has previously been unreported in the thorium-nickel-carbon ternary system. The data from magnetic susceptibility, electrical resistivity, and heat capacity indicate bulk superconductivity with T_c= 5.5 K. Results from thorium substitution with Y, Lu, La, and Gd will also be presented.

[1]visiting scholar at UC Irvine

Ted Grant
University of California Irvine

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