Abstract Submitted
for the TSF17 Meeting of
The American Physical Society

Superconductivity in Ta-doped Zr5Ge3 System VARUN ANAND, SHENG LI, XIAOYUAN LIU, BING LV, The University of Texas at Dallas, Richardson, Texas, THE UNIVERSITY OF TEXAS AT DALLAS TEAM — Inspired by the discovery of first superconductor Zr5Sb3 in the large hexagonal Mn5Si3-type compounds, we have carried out systematical doping studies in the Ta-doped Zr5-xTaxGe3 ($0 \leq x \leq 5$) system. X-ray diffraction analysis has shown a clear phase transition from hexagonal Mn5Si3-type structure to tetragonal W5Si3-type structure occurring when $x>3$. Superconductivity up to 4.5K is observed, on the other hand, when Ta doping level is $0.5 \leq x \leq 2$. The superconductivity is further demonstrated from both magnetic and electrical resistivity measurements with type-II superconductors and upper critical field ˜5000 Oe. The detailed synthesis and characterizations will be presented and discussed.

Varun Anand
The University of Texas at Dallas, Richardson, Texas

Date submitted: 20 Sep 2017 Electronic form version 1.4