Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Chemical doping and pressure effects on the noncentrosymmetric superconductors $ZrRe_6$ and BiPd[1] MOJAMMEL ALAM KHAN, DAVID P. YOUNG, AHMAD US SALEHEEN, AMAR KARKI, DANA BROWNE, P.W. ADAMS, TAPAS SAMANTA, Louisiana State University — Polycrystalline samples of $ZrRe_6$ doped with Ti, W and Os and BiPd doped with Te and Ni were made using arc melting and RF- induction furnaces. Variation of the superconducting transition temperature with different types of doping was observed. Small suppression of T_c was observed for both hole and electron doping in $ZrRe_6$ samples. Suppression in T_c was also observed for BiPd. The effect of hydrostatic pressure on T_c was also determined for both compounds. Effect of Re depreciation on T_c for $ZrRe_6$ were observed by synthesizing samples, $ZrRe_{5.95\sim5.85}$. In addition, small diameter wires (0.0005" $\sim$ 0.004") of BiPd were synthesized for critical current density measurements. The critical temperature of the wires was found to be slightly higher ($\sim$4.07 K) than that reported for bulk samples ($\sim$3.78 K).

[1]NSF DMR No.1306392

Mojammel Alam Khan
Louisiana State University

Date submitted: 14 Nov 2014 Electronic form version 1.4