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Superconductivity at 600 mK in a novel ternary platinum phosphide $SrPt_6P_2$[1] BENMAAN JAWDAT, BING LV, ZHENG WU, MELISSA GOOCH, KUI ZHAO, LIANGZI DENG, YUYI XUE, BERND LORENZ, Texas Center for Superconductivity and Department of Physics, University of Houston, ARNOLD GULOY, Texas Center for Superconductivity and Department of Chemistry, University of Houston, CHING-WU CHU[2], Texas Center for Superconductivity and Department of Physics, University of Houston — In the course of our search for new superconducting materials, we have synthesized a novel, metal-rich ternary platinum phosphide superconductor with a unique structure type and an onset T_c of 600 mK, $SrPt_6P_2$. The crystal structure was determined by single crystal X-ray diffraction, and features a unique three-dimensional anionic network of vertex-shared Pt_6P trigonal prisms. Furthermore, we have investigated the superconductivity in this material resistively, magnetically, and calorimetrically. The results of these studies will be presented and discussed.

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