Superconductivity and Crystal Structures
of Palladium-Iron-Arsenides

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Abstract

The palladium-iron-arsenides (CaFe₁₋ₓPdxAs)₁₀Pd₃As₈ were synthesized by solid state methods and characterized by single crystal diffraction. The triclinic crystal structure with alternating calcium iron- and palladium-arsenide layers is isotypic to the homologue platinum 1038-type superconductors. Resistivity and magnetic measurements reveal the presence of superconductivity in La-doped samples with zero resistivity below 10 K.