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# CePd<sub>2</sub>Al<sub>8</sub> – a ferromagnetic Kondo lattice with new type of crystal structure

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## Abstract

The novel cerium aluminide CePd<sub>2</sub>Al<sub>8</sub> was investigated by means of single crystal X-ray diffraction and low-temperature magnetic, electrical transport and heat capacity measurements. The compound is found to crystallize with a monoclinic structure of its own type with a single crystallographic position for Ce atoms in the unit cell. Due to magnetic moments carried on Ce<sup>3+</sup> ions, it exhibits Curie-Weiss paramagnetic behavior and long-range ferromagnetic ordering below  $T_C = 9.5$  K. In the entire temperature range studied, the physical properties of CePd<sub>2</sub>Al<sub>8</sub> are influenced by Kondo interactions with an energy scale close to  $T_C$ .

**Keywords:** cerium intermetallics; crystal structure; magnetic properties; Kondo effect

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