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Type: **Poster Presentation**

Low-temperature magnetic ordering in Ce₆Pd₁₂In₅

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The novel ternary intermetallic compound Ce₆Pd₁₂In₅ forms in a well-defined atomic stoichiometry with a hexagonal crystal structure (space group P6₃/mcm) and a unique atom in each of the crystallographic sites available in this space group. The bonding lengths are comparatively short and suggest strong interaction especially between Ce and Pd atoms. In this work we report on our findings of the first studies into the physical properties of Ce₆Pd₁₂In₅. A key finding is the occurrence of long-range ferromagnetic-like order below T_C = 1.6 K, where the specific turns into a lambda-like anomaly peaking at C_P = 8 J/(mol Ce K). The electrical resistivity hints at a low-lying Kondo scale in this compound. The magnetic susceptibility shows well-defined Curie-Weiss behaviour over an extended temperature range with an effective magnetic moment value that is indicative of conduction-electron hybridization effects on the Ce localized moment. The 4f-electron derived magnetic contributions to the entropy and to the electrical resistivity in Ce₆Pd₁₂In₅ are assessed by means of the nonmagnetic counterpart La₆Pd₁₂In₅.

Level (Hons, MSc, PhD, other)?

other

Consider for a student award (Yes / No)?

No

**Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?**

Yes

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