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Spin dynamics of the new phosphides YbRh6P4 and CeIr2P2 as studied by electron spin resonance

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Abstract

We report the electron spin resonance (ESR) measurements in the new phosphides YbRh6P4 and CeIr2P2. Details of preparation of both materials which proceeds by different techniques are given. Electronic spin-lattice relaxation (SLR) processes with an involvement of the first excited Stark sublevel of the Yb³⁺ ion with an energy Δ 82.1 K describe well a drastic broadening and vanishing of the ESR signal in YbRh6P4 above 10 K. The observed ESR behavior provides evidence for the relatively weak f-p hybridization effects in both phosphides in contrast to silicides YbRh2Si2 and YbIr2Si2. © Published under licence by IOP Publishing Ltd.

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