

# Electron paramagnetic resonance in YbNiAl<sub>2</sub> single crystals with strong magnetic anisotropy

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## Abstract

© 2017, Pleiades Publishing, Ltd. Anisotropy in the magnetic properties of YbNiAl<sub>2</sub> intermetallide has been studied. Electron paramagnetic resonance (EPR) signals assigned to the localized magnetic moments of trivalent ytterbium have been detected at temperatures below 20 K. Spin-lattice relaxation processes like the Orbach–Aminov process with participation of the first excited Stark sublevel of the Yb<sup>3+</sup> ion with an energy of 96 K govern electron–spin dynamics and the disappearance of spectrum lines with a further increase in temperature. Strong magnetic anisotropy effects are discussed as a main reason for the appearance of electron paramagnetic resonance.

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