

RESEARCH ARTICLE |

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Zero-phonon emission and magnetic polaron parameters in EuTe



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Article history

A phonon structure in the photoluminescence of EuTe was discovered, with a well-defined zero-phonon emission line (ZPL). The ZPL redshifts linearly with the intensity of applied magnetic field, indicating spin relaxation of the photoexcited electron, and saturates at a lower magnetic field than the optical absorption bandgap, which is attributed to formation of magnetic polarons. From the difference in these saturation fields, the zero-field polaron binding

energy and radius are estimated to be 43 meV and 3.2 (in units of the EuTe lattice parameter), respectively.

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