POINT CONTACT SPECTROSCOPY OF THE MELT-SPUN CUBIC $ErCu_5$

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9.7 cm

The intermetallic compound $ErCu_5$ crystallizes in cubic structure. Up to now, there exist only a few data about $ErCu_5$. The probable existence of a ferromagnetic ordering at low temperatures below 2 K follows from the low temperature behaviour of magnetization. One the other hand one can supposes the influence of crystalline electric field (CEF) effect on the transport properties. Therefore we have performed the study of the electron-quasiparticle interaction function by point contact spectroscopy at low temperatures. The pollycrystalline samples have been prepared in ribbon shape by low temperature melt-spun and subsequent annealing. We present the point contact spectra of $DyCu_5$ - Cu heterocontacts which are directly proportional to the electron-quasiparticle interaction function. We have observed the main peak at about 19 meV which is characteristic for electron-phonon interaction function of other $RECu_5$ (RE - heavy rare earths) compounds. Moreover, we have observed the additional maximum at about 2.5 meV which is connected probably with the allowed transition from CEF ground state to higher excited CEF level.

13.4 cm

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