

ThRhSi: a non-centrosymmetric superconductor

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The superconducting silicide ThRhSi crystallizes with a non-centrosymmetric crystal structure of the LaPtSi-type (space group $I4_1md$) [1]. The absence of inversion centre in a system with strong spin-orbit coupling implies a possibility of identifying sizeable contribution of spin-triplet component in the Cooper pairs condensate. Motivated by this prospect, we carried out detailed investigations of the superconducting state in ThRhSi by means of electrical resistivity, magnetic susceptibility and heat capacity measurements, performed down to 0.35 K in magnetic fields up to 5 T. The experimental data revealed bulk superconductivity with the critical temperature $T_c = 5.7$ K and the upper critical field $H_{c2}(0) = 2$ T. A set of superconducting parameters was derived, compared with those in a few related compounds, and discussed in terms of the alleged unconventional character of the superconducting state.

References:

[1] P. Lejay, B. Chevalier, J. Etourneau, J. M. Tarascon, P. Hagenmuller, *Mat. Res. Bull.* **18**, 67 (1983).