

Thermal Properties of TlLnC_2 Low-Dimensional Chalkogenides

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In the wide range of temperatures from 77 to 650 K, the temperature dependence of the thermal conductivities of ternary chalkogenides TlLnC_2 (Ln- Nd, Pr, La, Er; C- S, Se, Te) with laminated and chain structure have been investigated.

It is established that at high temperatures the thermal conductivity of the investigated compounds follows the law $\lambda \sim T^{-1}$. This indicates that three-phonon processes are the main mechanism of phonon scattering. The results are listed in the Table.

Table. Lattice *thermal conductivity of TlLnC_2 compounds along ($\parallel$) and across ($\perp$) the layers (chains).*

Lattice thermal conductivity of TlLnC_2 at 300 K ,
 $\text{W cm}^{-1} \text{K}^{-1}$

Compositions	$\parallel$	$\perp$
TlNdS2	0,0507	0,0342
TlNdSe2	0,044	0,0204
TlNdTe2	0,0109	0,0081
TlPrS2	0,0642	0,0442
TlPrSe2	0,035	0,0154
TlPrTe2	0,0121	0,0072
TlLaS2	0,0598	0,0308
TlLaSe2	0,0414	0,0144
TlLaTe2	0,0252	0,0086
TlErS2	0,034	0,0165
TlErSe2	0,023	0,0145
TlErTe2	0,019	0,0085