

CORRELATION BETWEEN THE THERMAL  
PRESSURE AND THE ISOCHORIC HEAT  
CONDUCTIVITY OF SOLID  
CO<sub>2</sub> AND NH<sub>3</sub>

*O.I. Pursky, V.S. Kovtunenka*

Cherkasy Technological State University  
(460, Shevchenko Blvd., Cherkasy 18006, Ukraine;  
e-mail: Pursky\_O@ukr.net)

S u m m a r y

The analysis of the correlation between the thermal pressure and the isochoric heat conductivity of solid CO<sub>2</sub> and NH<sub>3</sub> has been carried out. The temperature dependences of the thermal pressure and the isochoric heat conductivity for specimens with various molar volumes have been obtained. The isothermal dependences of the heat conductivity of solid CO<sub>2</sub> and NH<sub>3</sub> on the pressure have been calculated. The form of the temperature dependence of the isochoric heat conductivity taking the thermal pressure into account has been revealed. It has been established that the temperature behavior of the isochoric heat conductivity of solid CO<sub>2</sub> and NH<sub>3</sub> is governed by the phonon-phonon interaction and the additional influence of the thermal pressure.