THERMAL CONDUCTIVITY OF MOLECULAR CRYSTALS WITH SELF-ORGANIZING DISORDER

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S u m m a r y

The thermal conductivity of some orientational glasses of protonated C_2H_5OH and deuterated C_2D_5OD ethanol, cyclic substances (cyclohexanol $C_6H_{11}OH$, cyanocyclohexane $C_6H_{11}CN$, cyclohexene C_6H_{10}), and freon 112 $(CFCl_2)_2$ have been analyzed in the temperature interval 2–130 K. The investigated substances demonstrate new effects concerned with the physics of disordered systems. Universal temperature dependences of the thermal conductivity of molecular orientational glasses have been revealed. At low temperatures, the thermal conductivity exhibits a universal behavior that can be described by the soft potential model. At relatively high temperatures, the thermal conductivity has a smeared maximum and than decreases with increase in the temperature, which occurs typically in crystalline structures.