

order-disorder transition

A transition in which the degree of order of the system changes. Three principal types of disordering transitions may be distinguished: (i) positional disordering in a solid, (ii) orientational disordering which may be static or dynamic and (iii) disordering associated with electronic and nuclear spin states.

Examples:

(i) The transition of LiFeO_2 , with a tetragonal unit cell, in which the Li^+ and Fe^{3+} cations are perfectly ordered on crystallographically non-equivalent octahedral sites to cubic LiFeO_2 in which the Li^+ and Fe^{3+} cations are distributed randomly over all the octahedral sites.

(ii) The transition of orthorhombic KCN to cubic KCN in which the CN^- ions become oriented in any of the eight [111] directions.

(iii) A *superconducting transition*.

1994, 66, 587