Fractal Approach to Non-Crystalline States

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Based on the analysis of literary sources for the study of non-crystalline materials and the transition to non-crystalline state of the possibility fractal approach to describe them. Shows a description of the fractal structure using the system dynamic equations, which takes into account the flow of negative entropy of the surrounding environment.

Found that the formation of fractal dissipative structures in non-crystalline solids associated with the creation of self-consistent fields of soft atomic configurations and thermal behavior of such structure-sensitive characteristics that meet the minimum energy dissipation for a given external parameters - velosity cooling and process modes receipt. It is shown that this fact makes it possible to determine the non-crystalline structure through the processes of self-organization.

The calculation of the temperature dependence and computer simulation of particle atoms in soft configurations, mean-square displacements depending on the cooling rate in case of non-crystalline materials of the system As-S(Se). The temperature change in the fraction of atoms in soft configurations, their relationship with fractal structure and fractal dimension. It is shown that the fractal dimension can be described by the relation fractal Cantor, reduced to three-dimensional case.