

in the entropy change during melting, as we see in our previous report. On the other hand, if species corresponding to different solid phases are not distinguishable, the influences do not appear, as we see in the last section. The problem of the distinguishability of species is complicated and does not yet solved, but we can conclude, on the basis of the results of the two species model, that species corresponding to solid phases such as the difference of the volumes is considerably large are distinguishable. An entropy change during melting and the distinguishability of species, of course, are not the problem concerning only to the difference of the volumes of the corresponding solid phases. In fact, an entropy change during melting of a semiconductor such as germanium or silicon is exceedingly large. And we cannot explain this fact by using only the concept of species. We must consider the states of the valence electrons too in this case. To solve these problems, of course we must clarify the relation between a species and the corresponding solid phase. However there are too little data to proceed our discussion actively.

References

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