

Preface

In this special issue of *Thermochimica Acta* a collection of papers is published which give an impression of the scope of scientific work in thermodynamics of intermetallics. In 1972 Bocksworth and Kubaschewski remarked at the end of the *Metallurgical Chemistry Conference* at Brunell University that “no significant further development of the system of chemical thermodynamics is expected in the foreseeable future”. This statement is still valid, however, a comparison of papers of that time with those published in this issue reveals a rapid expansion in the last decades.

Previous papers were devoted to the measurement of new data or introduced new experimental techniques in devices constructed by the experimentators. Only a small circle of scientists were engaged in the thermochemical evaluation and calculation of phase diagrams.

Today, the picture has changed: the accuracy of the established methods has been considerably improved. Most groups measure data in commercial available equipment and use these data in calculations. Methods for the estimation of thermodynamic data are much better, and in theoretical chemistry and physics promising approaches exist by which thermodynamic and

structural properties of compounds can be calculated. These improvements are due to the rapid development and distribution of computer hard and software.

World's reserves of fossil energy and raw materials are limited, and consumption rises faster than the discovery of new resources. These aspects cause a growing demand to develop new materials for highly specialized technical applications and industrial processes for their production which are less energy consuming.

Because for both purposes thermodynamic data are necessary, the measurement, estimation and use of thermodynamic data has experienced a Renaissance. An increasing number of scientific groups are concerned with thermochemistry or measure thermochemical data besides their main interests. Some of these groups have published in this special issue which will provide the readers with a collection of articles on the field of estimation, measurement and use of thermodynamic data of intermetallics.

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