ELSEVIER

Thermochimica Acta 311 (1998) 217–218

thermochimica acta

Erratum

Erratum to ''Special Issue: Temperature Modulated Calorimetry, Edited by C. Shick and G.W.H. Höhne'' [Thermochim. Acta, 304/305 (1997)]

The publisher regrets the absence of the following preface from the issue above.

Preface

The idea to publish a special issue about temperature-modulated calorimetry (TMC) was closely connected with preparatory work and carryingout of the ''4th Lähnwitzseminar on Calorimetry'' in June 1996 at Krugsdorf (Germany). About half of the contributions to this special issue have been presented in this workshop as a lecture or a poster.

In calorimetry the use of periodic distortions is customary since many years. The request of the present special issue is to contribute to a better understanding of the correspondences and of differences of the methods.

While the quantitative analysis of the classical time-independent heat capacity was in the foreground first, in recent years questions about the time dependence of heat capacity moved increasingly into the field of interest. To the first group belongs the techniques known as classical AC calorimetry, in particular developed by Sullivan and Seidel. The technique known today as a 3 method was first used for the quantitative analysis of the heat capacity of thin wires assumed to be time-independent too. The investigations of Birge and Nagel in the range of the glass transition of amorphous systems opened the field of heat capacity spectroscopy of time-dependent phenomena. In addition to these techniques, where a heater is driven with a periodically oscillating electrical power and the resultant temperature change is evaluated, alternative techniques were developed too. Equipments where the temperature change of the sample is done by light absorption might be mentioned here. The combination of periodic temperature perturbations and differential scanning calorimetry by Reading made the temperature-modulated calorimetry (TMC) a method of extremely great interest. Unlike techniques mentioned above, the temperature-modulated DSC (TM-DSC) starts from temperature oscillations and measures the resulting heat flow rate. Compared to other techniques the TM-DSC offers in particular the advantage, that the sample preparation can be maintained as for conventional DSC measurements, disregarding some special features.

With the introduction of TM-DSC high hopes were set in the sense, that it appeared possible to separate the reversible (from heat capacity) and non-reversible (from latent heat) effects from one another. That things are not always as simple was shown by Wunderlich in the case of fusion of polymers. However, the TM-DSC is suitable, as shown by Schawe, to determine a time-dependent (complex) heat capacity and this way expand the frequency window of heat capacity spectroscopy to lower frequencies.

By collecting the contributions of this special issue, we hope to have presented both the different techniques of TMC together with their common and different characteristics to a wide community of readers. We have tried to equalize the nomenclature and specific abbreviations within this issue, Nevertheless there are differences left, which we hope will not reduce the readability of the articles.

0040-6031/98/$19.00
PII S0040-6031(98)00256-1

In addition to the introducing papers on history of TMC as well as on complex heat capacity there are descriptions of different experimental realizations together with its theory. From the numerous applications of the different techniques, only a few could be considered. Nevertheless, we attached importance to include papers from everyday practice in TMC, though these papers may be of minor scientific value as the other ones.

Besides applications understood quite well, there are some papers included, which raise more questions than may be answered. Therefore, we would like to see the special issue as a request for further discussions including the different techniques as well as the different applications. For this purpose the ''5th Lähnwitz Seminar on Calorimetry'' in 1998 will certainly offer a suitable framework again.

Here we would like to thank all authors who have contributed to this issue, as well as the referees who carefully checked the papers and helped us considerably not only to get this together in time but arise a rather high scientific level. Our thanks goes for the publisher Elsevier too, in particular to S. Go who initiated this special issue on temperature-modulated calorimetry and carried it considerably.

Christoph Schick, University of Rostock
Günther W.H. Höhne, University of Ulm