

Editorial

From thermal analysis to calorimetry and beyond

Congratulations to you, Günther W. H. Höhne, on your 65th birthday, and to you, Michael J. Richardson, on your 68th birthday. In recognition of the outstanding achievements in the work you have accomplished for us and in the advancement of “Thermal analysis and calorimetry”, it is an honour for us to dedicate this special issue of “Thermochimica Acta” to you.

To you, the reader of this volume, the title “From thermal analysis to calorimetry and beyond” might have been misleading as it refers more to the men who shall be honoured by this volume and less to its contents.

“From thermal analysis to calorimetry and beyond”—this is exactly how we could describe the lives of Günther and Michael. They devoted a major part of their professional life to the advancement of calorimetry and, to be more precise, to the development of quantitative differential thermoanalyzers as they were called in the 1960s into calorimeters for the determination of true thermodynamic parameters, as the name “differential scanning calorimeter (DSC)” implied.

It is characteristic of those two who we honour today that they never interfered in the discussions about “true” or “false” calorimeters but simply set out to investigate these instruments and formed their own opinion. Both of them finally came to use these instruments, which operate on a measuring principle that has remained unique until today, for their research work.

Although they worked for institutions which were very different from each other—Günther at the newly founded University of Ulm, Michael at the honourable National Physical Laboratory—their tasks were quite similar: to determine thermodynamic properties of

materials, i.e. heat capacity. Michael came from the classical field of calorimetry, running an adiabatic precision calorimeter. But when he took over the task of investigating polymers he found out very soon that the large quantities of material (single-crystalline polyethylene) which his adiabatic calorimeter needed for each experiment, and the long time it took for running just one single experiment were counterproductive for polymers. So he decided to try out the DSC which, at that time, was new on the market, and which the manufacturer claimed to be a true quantitative tool for thermodynamic investigations. From then on, Michael successfully applied his knowledge of adiabatic calorimetry to scanning calorimetry. For him as a metrologist, it must have been hard to see that not even the manufacturers of the DSC instrument themselves made full use of the potential their instruments offered but recommended much too simplistic procedures for measurement and evaluation. This is the reason why he dedicated himself to the publication of good laboratory practices for DSC, and why he set out to teach the ignorant world.

This is where he met Günther in 1989, on the occasion of a course on thermal analysis in The Netherlands.

By then, Günther had already made himself a name as a calorimetrist with a wide range of interests due to his duties as a service provider in calorimetry for all sections of Ulm University.

An immediate friendship developed which soon went far beyond common scientific interests—they share an obsession for narrow-gauge railways, and even today we can still find them in remote areas of Germany visiting their objects of desire.

This volume of “Thermochimica Acta” contains a number of contributions which shall give you an

idea of Günther's and Michael's widespread range of interests. It starts with AC-calorimetry, polymer physics and biocalorimetry, touches calibration and measurement and evaluation procedures and goes on to applications of thermal analysis and calorimetry to material science. The authors of these contributions are friends and colleagues of Günther and/or Michael, people who most certainly owe them valuable

knowledge about measuring technique and the chemistry and physics of materials.

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