About the use of *IDENTIFY,* a thermoanalytical database

Ekkehard FÜGLEIN

NETZSCH-Gerätebau GmbH, Wittelsbacherstraße 42, 95100 Selb, Germany
ekkehard.fueglein@netzsch.com

Comparing analytical data and measurement results with values being already published in literature is a common approach to state quality, develop new materials or characterize materials behavior in general. Since thermoanalytical measurement results are usually strongly influenced by measurement conditions such as the heating rate, crucible type and material, atmosphere, gas flow rate and sample mass, to mention only a few, it was always difficult to create libraries or data bases for comparison of results in the field of thermal analysis.

Nevertheless, already in 1976, G. Liptay published the "Atlas of Thermoanalytical Curves" containing more than 400 organic and inorganic compounds within 5 printed Volumes [1]. The authors present two results per sample, a smaller sample mass investigated with a low heating rate and a higher sample mass measured at a higher heating rate.

Furthermore, between 1991 and 1994 for instance, H. Möhler et al. published a three-volume anthology on thermal analysis of polymers [2] and in 1996, R. Schönherr introduced the atlas on TG-FT-IR [3].

All these approaches have been very helpful for numerous researchers, and they still are, in order to find appropriate measurement conditions or to receive suggestions for an adequate interpretation of the data observed. However, they all suffer from being printed documents and for this reason being not available for a software library comparison to currently measured data.

"*Identify*" is a newly developed part of the NETZSCH *Proteus*® measurement and evaluation software. It allows for an online comparison of currently measured DSC data with a thermoanalytical library. As it is known for other analytical techniques such as FT-IR or MS, "*Identify*" delivers a relative value as a measure for similarity of measured data compared with library data. The library can be edited and customized to the application field of the user and can therefore be trained to recognize customer-specific reference materials, pure samples or mixtures.

[1] "Atlas of Thermoanalytical Curves" (TG-, DTG-, DTA-Curves measured simultaneously), Edited by G. Liptay, Akadémiai Kiadó, Budapest, 1976

[2] „DSC on Polymeric Materials", E. Kaisersberger, H. Möhler, NETZSCH Annual for Science and Industry, Volume 1, ©NETZSCH-Gerätebau GmbH, D-8672 Selb, 1991
„TA for Polymer Engineering", E. Kaisersberger, S. Knappe, H. Möhler, NETZSCH Annual for Science and Industry, Volume 2, ©NETZSCH-Gerätebau GmbH, D-8672 Selb, 1993
"TA for Polymer Engineering", E. Kaisersberger, S. Knappe, H. Möhler, S. Rahner, NETZSCH Annual for Science and Industry, Volume 3, ©NETZSCH-Gerätebau GmbH, D-8672 Selb, 1994

[3] "TG-FTIR Atlas Elastomere", R. Schönherr, Verlag W.K. Schönherr, D-Burgdorf, 1996