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Announcement

Presentation of the 1994 NETZSCH GEFTA Award to Dr M.J. Richardson

in Leipzig, 27 September 1994

The NETZSCH GEFTA Award, endowed by NETZSCH-Gerätebau GmbH in Selb, Bavaria, is presented for exceptional scientific achievement in the field of thermal analysis and/or for outstanding contributions to thermal analysis in the areas of instrumentation or organization.

The 1994 NETZSCH GEFTA Award is being presented to Dr M.J. Richardson. Dr Richardson was born in 1934 in Hull, East Yorkshire, England, where he received his schooling. In 1952 he began his studies in chemistry at the University of Manchester, where he also completed his doctorate with the dissertation "Compressed gases as solvents." This

Dr M.J. Richardson (right) receiving the 1994 NETZSCH GEFTA Award from the President of GEFTA, Dr W. Hemminger.

work dealt with the problem of the increased mercury concentration in compressed gases which are in contact with a pressure exchanging mercury column.

After receiving his PhD (1958), Dr Richardson began at the former Mellon Institute in Pittsburgh, USA, where he studied the kinetics of crystallization and the melting of statistical copolymers. This transformation was studied with the aid of prolonged dilatometry, for which up to two weeks were required to achieve the final balance — if at all. After three years in the USA, Dr Richardson returned to England to work with Professor Bourden at the Cavendish Laboratory at Cambridge University. At that time, the electron microscope was being used as an important research method in metal physics: the structure of metals, orientation distributions, alloys, crystal boundaries, etc. were investigated in order to understand the characteristics of the metals — primarily the mechanical behaviour. It seemed reasonable to try using this research technique with polymers. The result of this was that polymer research was established and finally became independent in highly renowned laboratories for solids and metals research, which undoubtedly include the Cavendish Laboratory at Cambridge.

In 1963, after two years at Cambridge, Dr Richardson went to the National Physical Laboratory (NPL), the British metrological institute in Teddington near London. There it was planned to continue the work with the electron microscope and to run calorimetry tests on polyethylene monocrystals. Soon, however, the calorimetric investigations with adiabatic calorimetry took priority. The aim here was to determine the surface energy of the crystal through variation of the crystal thickness. The new DSC technique was also developed during this time, and was used by Dr Richardson, first as an auxiliary method for adiabatic calorimetry. Finally, DSC came to the fore, and Dr Richardson, with numerous fundamental investigations (in particular, for the determination of thermodynamic functions with the DSC), contributed to the ability to obtain reliable data with the DSC.

A few highlights:

"Thermal lag" correction: This allows for the fact that the deviation of the sample temperature from the indicated temperature cannot be measured directly during a transformation or changes in C_p.
The correct determination of the glass transition temperature in polymers with DSC.
C_p determination with DSC and drop calorimetry.
Adiabatic calorimetry — in particular, the precise measurement of heat capacities and thermodynamic potentials of polymers.

Today the record stands at approximately 70 publications, about 50 of which are in the area of thermal analysis, including calorimetry, as well as approximately seven lengthy chapters in books.

In addition, Dr Richardson serves on several committees:

Chairman of an IUPAC work group, Thermal Properties of Polymers.
Chairman of the Standardization Committee of the ICTAC.

Perhaps I should also mention that it is an absolute exception that Mike Richardson is wearing a tie, that he regularly (even in English weather) rides his bike to NPL and that he has a big — a really big — hobby. His hobby is steam-driven vehicles, e.g. locomotives; not simply models, but lifesize. Of course these can't be collected, but they can be tracked down, examined and photographed. Any tips on where machines like this can be found are welcome.

The NETZSCH GEFTA Award consists of a certificate and monetary recognition in the amount of DM 4000. We congratulate Dr Michael Richardson on this award. We wish him continued good health for his upcoming retirement and hope that he enjoys the work that he still plans to do in the area of thermal analysis.

W. Hemminger
Chairman, GEFTA