Chemometric analysis of calorimetric data – and the development of a photocalorimeter for use in photostability studies of pharmaceuticals

Anthony E Beezer

School of Pharmacy, University of London, 29/39 Brunswick Square,
London WC1N 1AX, UK

Following the development of equations that allow the analysis of calorimetric data for kinetic and thermodynamic parameters the analysis is extended to complex reaction systems. The chemometric approach will be described and results from both simulation and experimental data will be described [1].

A new instrument's potential will be discussed in the light of very recent results from a variety of applications. The instrument has an equilibration time of 5 to 10 minutes and offers the possibility of observing more "close-to-time-zero" data than do the more sensitive TAM type instruments [2].

The development of a photocalorimeter appropriate for use in the study of pharmaceutical photostability issues will be described. The selection of reference and test reactions will be discussed (actinometers). In addition the application of the developed instrument to the study of novel systems will be given [3].

References

1. J Tetteh, A E Beezer, M A A O'Neill, R J Willson, K Urakami, A C Morris and J A Connor. Paper in preparation, 2004.
2. S Gaisford, M A A O'Neill and A E Beezer, abstract submitted to British Pharmaceutical Conference, 2004.
3. A C Morris, PhD thesis, University of Greenwich, 2004.