

## **Advances in Gas Chromatography (GC) IV Meeting**

**LGC, Runcorn - Wednesday 30<sup>th</sup> October 2013**

Around 130 delegates attended this very successful meeting organised jointly by the Chromatographic Society and the N.W. Region Analytical Division of the Royal Society of Chemistry. This was the fourth in this series of biennial meetings which have now become established as the premier UK chromatographic meetings attracting many chromatographers, instrument companies and consumables suppliers from home and abroad.

The programme of presentations commenced with Dan Carrier of Anatune describing some recent developments in sample preparation techniques for GC including ITSP (instrument top sample preparation) using miniaturised SPE, SDME (single drop micro-extraction), and large volume headspace concentration for trace volatile and semi-volatile components. Dan indicated how these techniques can be used to both pre-concentrate analytes from a variety of sample matrices and obtain increased sample throughput. Jaap de Zeeuw from Restek then demonstrated through a series of applications why GC users should employ the appropriate stationary phase for their analysis rather than relying solely on the high separating power offered by modern capillary columns. As a passionate chromatographer, Jaap believes that we nowadays rely too much on long non-polar columns and highly selective detectors to achieve analyte selectivity rather than using the optimal stationary phase for a particular application. The theme of chromatographic resolution was continued in the following presentation of Jean-Francois Focant from the University of Liege who explained the principles of comprehensive two-dimensional gas chromatography (GCxGC) and reviewed how modulation technology, the critical component of GCxGC, has developed over the lifetime of this technique. In addition to the very high separating power of GCxGC, Jean-Francois highlighted the value of the structured chromatograms obtained by reference to two-dimensional GCxGC plots used for medical diagnostic purposes.

During the lunch period there was plenty of time for delegates to visit the many exhibitor stands and discuss their analytical requirements with representatives from the instrument companies and consumables suppliers who had kindly provided financial support for this meeting. The afternoon presentations commenced with Greg Johnson from Thermo Fisher describing the modular approach employed in their latest generation of GC instruments. Greg showed that their user-exchangeable instant connect injectors and detectors enable the simple and quick reconfiguration of a GC instrument to suit a particular application without the need to make and break individual gas and electrical connections. Ken Brady from Agilent then described some approaches they have developed to help GC users achieve consistency in their results. One such technique is retention time locking which facilitates the transfer of methods from the development laboratory to QA facilities by "matching" the retention times of components in a chromatogram so that they remain in the isolation windows specified in the original method. Neil Owen from Givaudan then illustrated the value of deconvolution techniques for resolving the highly complex substances encountered in the fragrance industry. Specific components present at variable concentrations in feedstocks used to formulate fragrances can have a major impact on the characteristics of these products, so it is

essential that these compounds can be accurately quantified. Lewis Jones from Mars Waltham concluded the afternoon presentations by showing how GC is being used to investigate flavours in pet food. He described some of the approaches used to prepare samples so that the more volatile components present can be analysed, and explained how traditional GC detection systems are frequently supplemented by the human nose using a “sniffer” port, thereby enabling odour characteristics to be assigned to specific components eluting from a GC column.

In summary, “*Advances in GC IV*” was a highly successful meeting which received many plaudits from the participants, and sincere thanks are due to Alan Handley who played the major role in organising this event.



*Stuart Forbes, Hon. Secretary N.W. Region Analytical Division*