David Briggs – in Memoriam

John Vickerman¹, * and Martin Seah², **

¹University of Manchester, Manchester M31 9PL, UK
²National Physical Laboratory, Teddington, Middlesex TW11 8AU, UK

(Received February 6, 2018)

On January 9 2018, we lost a dear and much respected colleague – David Briggs - a founder member of the surface analysis movement and pioneer of the development and application of electron spectroscopy and secondary ion mass spectrometry. He made vital contributions to understanding and exploiting the surface behavior of organic, and particularly polymeric, materials.

David is also renowned for his launching of the Journal Surface and Interface Analysis (SIA) and his publication of many books used to teach generations of surface scientists, particularly “Practical Surface Analysis, Parts 1 and 2” with Martin Seah, and “Surface Analysis of Polymers by XPS and SIMS”.

David was born in 1948 in the Pennines near the Lancashire-Yorkshire borders. Growing up in this historic and beautiful environment made a great impression as he tells in his lecture “My boyhood Pennine home” to local Probus Groups (associations of retired and semi-retired professional and business people).

His interest in surface analysis was fired by his ICI-sponsored PhD research with Dave Clark (1970–73) exploring inorganic and catalytic systems using ESCA (now XPS). The ES100 he used was AEI’s (now Kratos) first commercial ESCA instrument. Then, having recently married a fellow Durham student Jill, he moved to ICI Corporate Laboratory (Runcorn). ICI had many products whose performance was highly surface chemistry dependent. It was an R&D environment demanding surface analysis and David understood how to catch management, at critical moments, for funds. In Runcorn, Welwyn and finally Wilton, his group remained at the forefront of surface analysis.

In the late 1970s, came SIMS. He visited Manchester and a life-long collaboration developed. He saw the complementarity of XPS and static SIMS, both in their chemistry detail and their surface sensitivities. Static SIMS was in its infancy. David believed that static SIMS was made for polymer characterization. In the early 1980s, he stimulated VG to build the VG SIMSlab. A particularly important early study was to establish the spectral character of virgin polymer surfaces. Without careful limitation of the ion dose, the surface damaged - hopeless if one wished to follow chemical changes due environmental exposure, etc. In a dispute with other leading polymer researchers as to whose spectrum was truly of the virgin surface, David won! With Manchester he collaborated with VG to develop, in 1986, the VG ToFSIMS. Then, in 1994, he obtained a PHI 7200. David convinced management that the instrumentation was vital for ICI product performance and development. ICI Films estimated their return from surface analysis investment of ~£500k per annum to be 100–1000 fold! Excellent science providing major commercial returns, what greater accolade?

David recognized the need for forums to share research in both the development and application of techniques for the analysis of surfaces, interfaces, and
thin films. In the 1970s he was one of the prime movers in establishing both the UK ESCA User’s group and the UK SIMS User’s Forum, now merged into the UK Surface Analysis Forum. He was also much involved in the establishment of the ECASIA conference series in the 1980s.

Publishing was one of David’s strengths. In February 1979 (less than 6 years after PhD graduation) he founded the journal SIA. He was Editor-in-Chief until 2000. In addition to over 200 papers, he also participated in the production of 10 books sharing his expertise with the developing community. David was always concerned about the quality of spectra from both XPS and SIMS. Following early efforts with John Wiley to deliver standard spectral Libraries, David joined with John Vickerman and Alex Henderson in 1997 to establish SurfaceSpectra Ltd to deliver an enhanced version of the XPS Polymer Database previously published by Wiley and also a SIMS spectral database, followed by two books on the application of XPS and ToFSIMS.

In 1997, when ICI restructured, he retired. He moved with Jill and his beloved daughter Cherry to Malvern and became a Professor in The School of Pharmacy at Nottingham University. Jill agreed, but only if he gave up SIA to have more time together. The Nottingham work went well with new funds for an IonTOF IV. Simultaneously, he researched the life and achievements of Gilbert Briggs, a relative who was the father of hi-fi sound and developed the Wharfedale loudspeakers. This led to another book in 2012 – “A Pair of Wharfedales – The story of Gilbert Briggs and his Loudspeakers”, a fascinating story of the hi-fi age.

In the last few years David developed a series of talks presented at Probus meetings in Worcestershire and Herefordshire including the story of the Wharfedales and an account of his research for ICI packaging films. It is a testimony to him that, right to the last few months, he was very much in demand. It has been a privilege to travel with David and he will be very much missed.

References