

Editorial

Spectroscopy in the post-genomic era

The completion of the “first draft” sequence of the human genome, published in *Nature* earlier this year [1], has been compared with landing on the Moon, splitting the atom and even inventing the wheel. Just as the first landing on the Moon opened a new frontier, this latest scientific breakthrough marks the beginning of an exciting new era in science and technology. Without doubt life science has firmly established itself at the centre stage of scientific research for many years to come. For our journal this presents an apt time to change its focus to reflect the current reality. Exercising my role as the *Editor-in-Chief*, I have therefore decided to shift the focus of *Spectroscopy*, away from mainly physical chemistry, to applications of spectroscopy to life science research. This is based on my firm belief that spectroscopists will play a vital role in scientific developments in the post-genomic era.

The post-genomic era presents scientists with the more complex task of defining the structure and function of proteins encoded within a given genome. This has led to the emergence of a new field – *proteomics*. Undoubtedly, spectroscopists will play a pivotal role in this rapidly developing field. Indeed, the most central technology in proteomics is currently 2D-electrophoresis coupled to *mass-spectrometry*. The role of spectroscopy in proteomics will be many, ranging from characterisation of the structure and dynamics of individual proteins to investigating protein–protein and protein–drug interactions. In order to fully realize the potential of spectroscopy, advances in technology will be critical. This will include advances in automation, increased sensitivity and higher throughput. However, technology alone would not be sufficient to meet the daunting challenge of characterising the proteome, closer collaboration between scientific disciplines will be equally important. For spectroscopists, this would include not just applying a single spectroscopic technique but a battery of spectroscopic techniques so that a more complete picture of the structure and dynamics of a protein is established. This will require closer collaboration and exchange of information between spectroscopists. Our aim is to make *Spectroscopy* a forum for such exchange of information through publication of high quality scientific papers that apply spectroscopy to address biological problems. In order to achieve this goal, the first practical step I have taken is to set-up an editorial board that is highly interdisciplinary in terms of subject expertise.

The new editorial board comprises spectroscopists who are actively engaged in diverse aspects of life science research, including proteomics. The spectroscopic background of the editorial board members range from the more established techniques, such as NMR, FTIR, NIR, Raman spectroscopy, Mass spectrometry, fluorescence spectroscopy, to emerging techniques such as surface plasmon resonance spectroscopy and atomic force spectroscopy.

My own research activity, employing spectroscopic techniques, started when I was working with the late Professor Dennis Chapman FRS [2] at the *Royal Free Hospital School of Medicine, University of London*. Chapman had the distinction of being one of the first to introduce many different spectroscopic techniques for analysis of biological systems. In the 1980's we were one of the first to develop FTIR spectroscopy for characterisation of proteins and biomembranes. Spectroscopy continues to play a central role in my research activity, both basic [3] and applied [4].

The success of our journal will depend on the submission of high quality papers by the spectroscopic community. The editorial board and the publishers will do everything possible to facilitate this process by co-operating with spectroscopists around the globe. Steps are being taken to launch the electronic version of the journal later this year, which will significantly speed up the process of publication. There are exciting times ahead and the future of *Spectroscopy* in the post-genomic era is very bright.

References

- [1] International Human Genome Sequencing Consortium, *Nature* **409** (2001), 860–921.
- [2] P.I. Haris, *Trends in Biochem. Sci.* **25** (2000), 104–105.
- [3] P.I. Haris and D. Chapman, eds, *Biomembrane Structures*, IOS Press, Amsterdam, 1998.
- [4] P.I. Haris and D. Chapman, eds, *New Biomedical Materials*, IOS Press, Amsterdam, 1998.

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