We use cookies to ensure that we deliver the best user experience of our website. If you would like to, you can change your cookie settings at any time. Continue

Dr Josephine Bunch

Honorary Senior Research Fellow

School of Chemistry (/schools/chemistry/index.aspx)

Contact details

Telephone +44 (0) 20 8943 6509 (tel:+44 20 8943 6509)

Email josephine.bunch@npl.co.uk (mailto:josephine.bunch@npl.co.uk)

School of Chemistry
University of Birmingham
Edgbaston
Birmingham
B15 2TT
UK

About

Josephine Bunch has recently moved to the **National Physical Laboratory (http://www.npl.co.uk)** , where she is a Senior Research Scientist. She remains an Honorary Senior Research Fellow in the department.

(http://www.massimaging.com)
Group Research Pages

Qualifications

Lecturer in Chemistry and Imaging:

- PhD in mass spectrometry 2005, Sheffield Hallam University and Pfizer GLobal R&D

Teaching

- Year 1-3 analytical chemistry courses in Chemistry BSc and MSci degree programmes
- **PSIBS Doctoral Training Centre (/research/activity/psibs/index.aspx)**

Research

Research Themes:

- Mass Spectrometry Imaging (MSI)
- Imaging Lipids
- Preclinical drug distribution studies
- Optimizing sample preparation: New MALDI additives
- High repetition lasers
- Multivariate analysis of large MS image data – applications in disease state profiling
- Imaging via Liquid Extraction Surface Analysis
- Fast and efficient computational methods

Research Activity

Josephine's group specialise in the development of MS for analysing and imaging small and large molecules in complex samples and tissues.

The group are developing new methods for handling and prepararing samples for MALDI MS, high throughput approaches for imaging lipids in tissue, reference standards for preclinical imaging studies, in situ profiling of lipids and proteins by LESA and novel data handling and analysis routines for large MS data.

Publications

Selected publications:

Carter, C. L., McLeod, C. W. and Bunch, J. (2011) 'Imaging of Phospholipids in Formalin Fixed Rat Brain Sections by Matrix Assisted Laser Desorption/Ionization Mass Spectrometry', ***Journal of the American Society for Mass Spectrometry***, 22(11), pp. 1991-1998.

Pugh, J. A. T., Cox, A. G., McLeod, C. W., Bunch, J., Whitby, B., Gordon, B., Kalber, T. and White, E. (2011) 'A novel calibration strategy for analysis and imaging of biological thin sections by laser ablation inductively coupled plasma mass spectrometry', ***Journal of Analytical Atomic Spectrometry***, 26(8), pp. 1667-1673.

Edwards, R. L., Creese, A. J., Baumert, M., Griffiths, P., Bunch, J. and Cooper, H. J. (2011) 'Hemoglobin Variant Analysis via Direct Surface Sampling of Dried Blood Spots Coupled with High-Resolution Mass Spectrometry', ***Analytical Chemistry***, 83(6), pp. 2265-2270.

Fonville, J. M., Carter, C., Cloarec, O., Nicholson, J. K., Lindon, J. C., Bunch, J. and Holmes, E. (2012) 'Robust Data Processing and Normalization Strategy for MALDI Mass Spectrometric Imaging', ***Analytical Chemistry***, 84(3), pp. 1310-1319**.**

Palmer, A. D., Griffiths, R., Styles, I., Claridge, E., Calcagni, A. and Bunch, J. (2012) 'Sucrose cryo-protection facilitates imaging of whole eye sections by MALDI mass

spectrometry', ***Journal of mass spectrometry***, 47(2), pp. 237-241.

© University of Birmingham 2014