

SHARON CURTIS, PhD.

3191 Roger Stevens Drive
North Gower
Telephone: (613) 489-1973
E-mail: sharon.curtis@live.ca

GOAL STATEMENT

I am looking for a position in which I can use my 8 years of experience in project management and/or mass spectrometry. I have acquired extensive research and development skills during my post doctoral and doctoral studies this combined with the supervisory and training skills I acquired as a lecturer/teacher allow me to contribute to a project in a meaningful way.

ACHIEVEMENTS

PROJECT 1

- Developed a new protocol, to analyse a complex mixture of chemical specie via electrospray mass spectrometry, displaying considerable aptitude for implementation of new ideas.
- Managed the accumulation of data and presented the information in an easily understood format, demonstrating an ability to organise complicated analytical systems.
- Competent operating and maintaining: Micromass Quattro, Triple Quad and Micromass Q-TOF, computer operating systems Mass Lynx 3.5 and 4.
- Practised in HPLC and LC systems, connected to the electrospray source of the Triple Quad.
- Proficient operator of a Hewlett Packard, 5973, GC system.

PROJECT 2

- Performed the mass spectral analysis on pyrolysed chicken manure to elucidate the nitrogen containing compounds and commissioned software to present the data in an easily viewed format.

PROJECT 3

- Coordinated and executed a procedure for conversion of palm oil into bio-fuel, to be used in the Congo, for Help the Aged. This involved simplification of an acid esterification process that could be implemented over a fire, using battery acid and the most primitive of tools. Removing the fatty acids from the palm oil and thus extending the life of the custom converted diesel engines and providing electricity to power the local hospital surgery unit.

PROJECT 4

- Organised, coordinated and constructed a large vacuum apparatus, built to create helium droplets, to investigate small molecules in an ultra cold environment, 0.38 K. Utilising a two-stage closed cycle cryogenic refrigeration system (APD Cryogenics Inc). An Extrel ELQ 400, Quadrupole Mass Spectrometer.
- The project was completed on time and on budget. This demonstrates experience and expertise in all facets/phases of project management.
- Successfully maintained and operated this equipment over a period of 5 years, adapting and modifying the system to analyse a variety of chemical species via mass spectrometry and fluorescent emission. This demonstrates ability for innovation and development.
- Operated and maintained a laser system, consisting of a pulsed dye laser (Sirah Cobra-Stretch, Photonics Ltd) with a frequency-doubling unit, pumped by a Surelite, Continuum, Nd:YAG laser.
- Wave length accuracy was calibrated using a Burleigh Wavemeter and spectra were recorded using a gated ion counter (Stanford Research SR400).

PROJECT 5

- Revamped and rewrote 1st and 2nd year physical and analytical laboratories, displaying an ability to coordinate and implement new systems and work practises.

PROJECT 6

- Completed undergraduate project creating and investigating the clustering of Mn²⁺ ions using a reverse geometry double focusing mass spectrometer (VG-ZAB-E).

OTHER ACHIEVEMENTS:

- Lectured in Molecular Spectroscopy and Statistical Mechanics, CHM 3373, at University of Ottawa.
- Lectured in General Chemistry at the University of Sussex.
- Attained Qualified Teacher Status, demonstrating a strong ability to communicate, teach, organise, manage time and people.
- Effectively presented methodology and results from the various projects in the form of reports and/or presentations.
- Trained new colleagues on equipment and edited writing material generated by peers indicating the ability to work successfully with others.
- Attended courses in beginners French and computational chemistry, displaying a willing ability to learn new skills to enhance work base.

EDUCATION

Qualified Teacher Status, General Teaching Council of England	2006
Ph.D., Chemical Physics, University of Sussex	2004
B.Sc., Chemistry, 2i Honours, University of Sussex	1999

PRESENT EMPLOYMENT

University of Ottawa

Mass Spectrometry Centre

Joint project, with Agriculture and Agri-Food Canada.

Project Title:

Intelligent Fertilizers. Phase 1: Root exudates, model nano-biosensors and polymers for synchronizing the release of nitrogen from fertilizer with its uptake by wheat, canola and maize.

Responsible for:

- Development of an electrospray mass spectral method, to elucidate and track plant root exudates, present in soil samples.
- Modification of the protocol to 'clean up', remove inorganic ions that complicate and suppress the analytes.
- Presentation of data to clearly visualise the concentration of chemical specie with respect to the nitrogen cycle.
- Develop method to analyse the ions signals in negative mode mass spectrometry by enhancement of the negative signal.
- Identify ion signals, using standards and collision induced dissociation methods.

WORK EXPERIENCE

Post Doctoral Research University of Ottawa and Agriculture Canada, On	Sept 2008 to Present
Lecturer in Molecular Spectroscopy University of Ottawa, Ontario	Jan 2009 to April 2009
Public and elementary school supply teacher Bancroft, Ontario	July 2006 to Sept 2008
Science Teacher, St Paul's Catholic College West Sussex, U.K.	September 2005 to July 2006
Lecturer in General Chemistry University of Sussex, U.K.	January to September 2005
Research Assistant University of Sussex, U.K.	2002 to 2004
Doctoral student in Chemical Physics University of Sussex, U.K.	1999 to 2004

PUBLICATIONS

- In Writing: Sharon Curtis, Paul Mayer, Justin Renaud, Morris Switzer and Carlos Monreal. Evidence of an important class of compounds, elucidated in soil samples, by negative mode electrospray MS.
- In Writing: Sharon Curtis, Paul Mayer, Justin Renaud, Morris Switzer and Carlos Monreal. Identification of phosphorus organic chemical species, revealed in soil samples, by negative and positive electrospray, MS.
- Adrian Boatwright, Nicholas Besley, Sharon Curtis, Rossana R.Wright and Anthony J. Stace, J. Chem.Phys. 123, (2005), 021102. A systematic shift in the electronic spectra of substituted benzene molecules trapped in helium nanodroplets.
- Sharon Curtis, Adrian Boatwright, Rossana R.Wright, Anthony J. Stace, Chem. Phys. Letts. 401, (2005), 254-258. Evidence of a shift between one- and two-photon processes associated with benzene trapped in helium droplets.
- Hazel Cox, Glen Akibo-Betts, Rossana R. Wright, Nicholas R. Walker, Sharon. Curtis, Bridgette Duncombe and Anthony J. Stace, J.Am.Chem.Soc. 125, (2003), 233-242. Solvent Coordination in Gas-Phase Manganese Water ⁺² ions and Manganese Alcohol ⁺² ion Complexes: Theory and Experiment.
- Posters and Presentations:
- Planned: USA. 58th ASMS Conference on Mass Spectrometry and Allied Topics, 2010.
- Trent Conference, CA. Mass Spectrometry, 2009, poster and presentation.
- Trent University, CA. Physical Chemistry Colloquial, Presentation on PhD Work, 2008.
- House of Commons, London U.K. Innovations in Science and Engineering, Conference, won 2nd Prize, 2004
- University of Sussex, U.K. Southern Molecular Spectroscopy Conference, 2003.

Dr Paul M. Mayer,

Professor , Chemistry Department

University of Ottawa

118 D'Iorio Hall

10 Marie Curie,

Ottawa ON K1N 6N5

Canada

Telephone: (613)562-5800 x 6038

Fax: (613) 562-5170

pmmayer@uottawa.ca

Professor Anthony Stace,

Professor and Head of Physical Chemistry

School of Chemistry, Faculty of Science

Room A34 School of Chemistry

University Park

Nottingham

NG7 2RD

U.K.

Telephone: 01144-59513450

tony.stace@nottingham.ac.uk

Sheldon Gilmer

International Project Manager for Help the Aged Canada.

3075 County Road 20

Kemptville ON K0G

Canada.

Telephone: 613 889 3717

sgilmer@sympatico.ca