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Technical Workshops Series

Two-Day Intensive Workshop on
Mass Spectrometry
Wave 2
- Organized by Venture Center and BioAnalytical Technologies-

Learn	MS operation, including the operation of the most popular LC-MS interfaces; How a quadrupole mass filter works; MS calibration and optimization; Ion production, fragmentation and detection; Operation in MS, MS-MS, and MS-MS-MS modes Structure determination by product ion analysis. Live demonstration of experiments; Hands on session; Mini-workshop on data interpretation with real data; Quick update on latest techniques/developments; Workshop is intended to be basic.
Organized by	<ul style="list-style-type: none"> • Venture Center – a Technology Business Incubator • BioAnalytical Technologies
For whom	<ul style="list-style-type: none"> • Students, Researchers • Industry professionals wishing to expand their skill sets ; • First-come-first-serve.
When	8th – 9th March 2013 0900-1900 hrs.
Where	Class room sessions: Training Room, Venture Center, 100 NCL Innovation Park, Dr. Homi Bhabha (Pashan) Road, Pune-411008 Lab sessions: BioAnalytical Technologies, Demonstations: MS facility, NCL, Dr. Homi Bhabha (Pashan) Road, Pune-411008
Contact	Ms. Lipika Biswas Venture Center, 100, NCL Innovation Park, Dr. Homi Bhabha Road, Pune – 411008; Phone: +91-20-64011023; +91-20-25865877 Email: eventsdesk@venturecenter.co.in
Cost	<p><u>For Theory Lectures, Hands On Session & NCL Tour</u></p> <ul style="list-style-type: none"> • Students with valid ID card: Rs. 3,000/- • Not for profit & academic institutions: Rs. 5,000/- • Micro and small enterprises/ individuals: Rs. 6,000/- • Medium and large companies/ others: Rs. 10,000/- <p><u>For Theory Lectures & NCL Tour</u></p> <ul style="list-style-type: none"> • Students with valid ID card: Rs. 1,500/- • Not for profit & academic institutions: Rs. 2,500/- • Micro and small enterprises/ individuals: Rs. 3,000/- • Medium and large companies/ others: Rs. 5,000/-



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Introduction

Mass spectrometry is a powerful analytical technique used to quantify known materials, to identify unknown compounds within a sample, and to elucidate the structure and chemical properties of different molecules. The complete process involves the conversion of the sample into gaseous ions, with or without fragmentation, which are then characterized by their mass to charge ratios (m/z) and relative abundances. This technique basically studies the effect of ionizing energy on molecules. It depends upon chemical reactions in the gas phase in which sample molecules are consumed during the formation of ionic and neutral species.

Mass spectrometry is fast becoming an indispensable tool in the fields of Environmental analysis, Forensic analysis, Clinical research, Proteomics. It is also been widely used for Pharmaceutical, Food and Safety applications. Oligo-nucleotides, carbohydrates, drug discovery, combinatorial chemistry, pharmacokinetics, drug metabolism, bio-equivalence, target identification, haemoglobin analysis, drug testing, metabolomics studies can also be carried out using Mass Spectrometry. Mass Spectrometry can also be employed to analyse Adulterants, Pesticides, Antibiotics, Plant Growth Regulators (PGR), Veterinary Steroids, Vitamins, Dyes and colorants etc. in various matrices.

This workshop aims to give an introduction to the principles and practices of Mass Spectrometry for industry professionals and students. The workshop will be conducted by NCL scientists and Industry experts, having vast experience working in Mass Spectrometry. The workshop includes lab demonstrations and data interpretation exercises. The workshop shall also discuss some recent trends and new developments in research and industry relating to **Mass Spectrometry**.

Course Outline

- Principles of Mass Spectrometry
- Understanding the instrument including various ionization sources, analyzer and detectors.
- Different sampling techniques
- Applications of Mass Spectrometer
- Best practices in Mass Spectrometry
- Hands on sessions at BAT
- **Live demonstration of experiments and MS facility tour at NCL**
- Mini-workshop on data interpretation with real data.
- Quick update on latest techniques/developments.

Schedule			
8th March 2013			
Time	Session title	Lead	Venue
0830 – 0845	Registration		Foyer, Learning Center, VC
0845 – 0900	Introduction to course, Faculty,	Edna	Training Room, VC
0900 – 1030	Basic principles of Mass Spectrometer	Dr Ajit Srivastava, BAT	Training Room, VC
1030–1100	Tea		Foyer, Learning Center, VC
1100–1200	Instrumentation	Dr Ajit Srivastava, BAT	Training Room, VC
1200–1300	Sample preparation and best practices	Dr Ajit Srivastava, BAT	Training Room, VC
1300–1400	Lunch		Cafeteria, VC
1400 -1900	Hands – on session at BAT		BAT
9th March 2013			
0900–0945	Mass spectroscopy applications in proteomics	Dr Mahesh Kulkarni, NCL	Training Room, VC
0945–1015	Tea, Group photo		Foyer, Learning Center, VC
1015 –1230	Demonstration and tour at NCL MS facility equipped with Q-TOF, MALDI-TOF/TOF and Orbitrap systems	Dr Mahesh Kulkarni, NCL	NCL
1230 -1330	Lunch		Cafeteria, VC
1330 –1445	Overview of applications & Recent trends and developments -I	Dr Ajit Srivastava, BAT	Training Room, VC
1445 - 1530	Overview of applications & Recent trends and developments –II	Dr Ajit Srivastava, BAT	Training Room, VC
1530 - 1600	Tea		Foyer, Learning Center, VC
1600 - 1645	Data interpretation	Dr Ajit Srivastava, BAT	Training Room, VC
1645–1715	Feedback, Certificate distribution		Training Room, VC

Anchor Faculty

Dr. Ajit Srivastava
Vice President - Life Sciences and Biotechnology at BioAnalytical Technologies, Pune.

Dr. Ajit Srivastava is a Post Graduate in Life Sciences and a Doctorate in Industrial Microbiology. He started his career with a Pharmaceutical Company as a Research Scientist and completed some projects on Enzyme engineering. During this time he came in contact with Mass Spectrometry as a technique and shifted to the field of applications on MS. He has been associated with different Mass Spectrometry companies, like AB Sciex, Bruker, Thermo and Agilent technologies in various positions, starting from Application Specialist to managing the entire business operations. Dr. Srivastava visits IITs and universities for specialized lectures on Mass Spectrometry and its applications. He is recognized by the industry as an expert on this technology and provides consultancy to some pharma labs and institutes. In his present capacity as Vice President, at Bioanalytical Technologies, Pune, he heads the Life Sciences and Biotechnology division, leading a team of 20 Scientists to deliver software solutions for the analytical technology manufacturers.


Dr. Mahesh Kulkarni
Scientist, Proteomics Facility, Division of Biochemical Sciences, CSIR - National Chemical Laboratory, Pune.

Dr. Kulkarni's group's research activity involves developing mass spectrometric application for the proteomic research, as well as to understand the molecular mechanisms of biological process using proteomic approaches. Currently they are working on proteomics of diabetic complications where in they are trying to elucidate the role of glycosylated proteins and advanced glycation end products (AGEs) in developing diabetic complication. The long term goal of this project is to identify a diagnostic marker for diabetic complications, identify drug targets and develop intervention strategies. Additionally, they are working on identification of off-targets of drugs for repositioning in novel applications, as well as to understand the molecular mechanism of their toxicity, using combination of approaches involving chemical proteomics, two dimensional electrophoresis and mass spectrometry. Dr. Kulkarni has several publications in reputed journals and has also received many prestigious awards for his extensive research in the field of mass spectrometry.



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Course includes

- Course notes (hard copy) including slides, case studies, application notes
- Hands On experiments & Lab demo
- Access to restricted website with online compilation of resources
- One-on-one feedback on data interpretation exercise
- Certificate of Participation issued by Venture Center and BioAnalytical Technologies
- Course includes tea and lunch at Venture Center cafeteria

***Please note the participants will have to arrange for their own travel, local transport, accommodation and dinner**

About the Organizers



About Venture Center

Entrepreneurship Development Center (Venture Center) – a CSIR initiative – is a Section 25 company hosted by the National Chemical Laboratory, Pune. Venture Center strives to nucleate and nurture technology and knowledge-based enterprises by leveraging the scientific and engineering competencies of the institutions in the Pune region in India. The Venture Center is a technology business incubator supported by the Department of Science & Technology’s National Science & Technology Entrepreneurship Development Board (DST-NSTEDB). Venture Center’s focuses on technology enterprises offering products and services exploiting scientific expertise in the areas of materials, chemicals and biological sciences & engineering. For more information, visit <http://www.venturecenter.co.in/>



About BioAnalytical Technologies

Bio-Analytical Technologies (India) Pvt. Ltd. (B.A.T.) has been formed on the strong foundation of domain knowledge in the field of Analytical & Biotechnological instrumentation equipment and applications. B.A.T. possesses the necessary domain skills related to customer applications, software applications & analytical instruments. B.A.T. has been working on various projects for its customers in North America, Europe and India and has a well equipped development center and state-of-the-art Bio-Analytical lab located at Pune in India. B.A.T. takes pride in being active movers in the process of enhancing human life and is involved in the following broad categories:

- Analytical Technologies and Instrumentation
- Devices for Detection and Measurements
- Method Development and Application Expertise

For more information, visit <http://bioanalytical.net/>