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Technical Workshops Series - 2016

Workshops on
Fundamentals of High Performance Liquid Chromatography (HPLC) & Mass Spectrometry (MS)
- Organized by Venture Center -

Learn	Operational principles and essential concepts of HPLC & MS; Theory of separation mechanisms and modes. Understanding the instrumentation including possible configurations; Basic maintenance of HPLC & MS. Troubleshooting process; Practical applications in the Industry ; Method Development Strategies; Best practices; Live demonstration of experiments; ***Simple group practical/hands-on session for HPLC; Demo for MS***; Mini-workshop on data interpretation with real data; Quick update on latest techniques/developments; Workshop is intended to be basic but shall ***include a few special applications illustrated with real case studies***. Learn from faculty with extensive practical experience with industrial applications.
Organized by	• Venture Center – a Technology Business Incubator
For whom	• Industry professionals wishing to expand their skill sets (Industries – Pharma;Environmental; Forensic;Food, Petrochemicals etc) • Students and staff of polymer/ materials sciences/ engineering/ analytical/physical chemistry wishing to equip themselves for industry jobs
Course Director	Dr. Ajeet Singh
VC Team	Sujaya Ingale, Edna Joseph, Sayali Kothmire
When	**Tuesday - Wednesday | 20 & 21 December 2016 | 9 am – 5:30 pm**
Where	E-Class Room , Lab Block & CAMS, Venture Center, 100 NCL Innovation Park, Dr. Homi Bhabha (Pashan) Road, Pune-411008
Contact	Ms. Lipika Biswas | +91-20-25865877 | Email: eventsdesk@venturecenter.co.in
Cost	See fee table below

Fee Criteria	**For either HPLC or MS**	**For HPLC+MS**
Students with valid ID card	Rs 1000/-	Rs 2000/-
Micro, small and medium enterprises / academic institutions/ Individuals	Rs 2500/-	Rs 5000/-
Large Companies	Rs 4500/-	Rs 9000/-

Maximum 20 seats for each workshop; First-come-first-serve.

Application form available at http://tinyurl.com/vcworkshops

Last date for receipt of applications with payment 16 Dec. 2016

For more details, visit: http://www.venturecenter.co.in/workshops/

Note:-

- Fees paid is not refundable and non transferable under any circumstances.
- Organizers reserve the right to accept or refuse or delay registrations to optimize the composition of the group and to maximize learning for all participants.

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Introduction

20th December: High Performance Liquid Chromatography

HPLC is one of the most widely used analytical techniques and acquires a high degree of versatility not found in other chromatographic systems. It has the ability to separate and identify components of a wide variety of chemical mixtures.HPLC is an important analytical tool used for chemistry and biochemistry research analyzing complex mixtures, purifying chemical compounds, developing processes for synthesizing chemical compounds, isolating natural products, or predicting physical properties. This technique finds applicability in a wide range of industries including pharma, environmental, forensic, food, petrochemical etc. It is also used in quality control to ensure the purity of raw materials, to control and improve process yields, to quantify assays of final products, or to evaluate product stability and monitor degradation.

21st December: Mass Spectrometry

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 analyze Adulterants, Pesticides, Antibiotics, Plant Growth Regulators (PGR), Veterinary Steroids, Vitamins, Dyes and colorants etc. in various matrices.

The workshops aim to give an introduction to the Fundamentals of High Performance Liquid Chromatography & Mass Spectrometry for industry professionals and students. The workshop will be conducted by Faculty having vast experience working on high end chromatography techniques. 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 chromatography techniques. Learn from faculty with extensive practical experience with industrial applications.

Course includes

- Lab demo
- Access to restricted website with online compilation of resources for HPLC; Course notes including slides, case studies and application notes.
- One-on-one feedback on data interpretation exercise
- Certificate of Participation issued by Venture Center
- Course includes tea and lunch at Venture Center cafeteria

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

- For accommodation (standard and budgeted hotels) please visit: www.venturecenter.co.in/puneguide/standard.php
- For accommodation (deluxe and luxury hotels) please visit: www.venturecenter.co.in/puneguide/deluxe.php
- For local transport details visit: www.venturecenter.co.in/puneguide/taxi.php

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Time	Session title	Lead	Venue
Day 1 | 20th December: Workshop on High Performance Liquid Chromatography			
9:00 to 9:30	Registration		Foyer Learning center, VC
9:30 to 9:45	Introduction to the course and faculty	V Premnath/ Manisha P	E-Class Room, VC
9:45 to 10:30	Introduction and basic principles of HPLC; General terms and essential concepts; Sample preparation and mobile phase selection techniques; Quick overview of HPLC; Typical data recorded	Ajeet Singh	E-Class Room, VC
10:30 to 11:00	Tea		Foyer Learning center, VC
11:00 to 11:30	Instrumentation; Types of pumps, Typesof columns and column chemistry; Sample Injectors; Types of detectors	Ajeet Singh	E-Class Room, VC
11:30 to 12:00	Basic Maintenance of HPLC; Trouble shooting processes	Ajeet Singh	E-Class Room, VC
12:00 to 13:00	Practical applications of HPLC; Method development strategies. Best practices in HPLC. Few special applications illustrated with real case studies.	Ajeet Singh	E-Class Room, VC
13:00 to 13:45	Lunch		Cafeteria, VC
13:45 to 14:15	Introduction to practical session (Venue: E-Class Room) Instructions, Learning points, Making groups, Assigning tasks	Ajeet Singh	E-Class Room, VC
14:15 to 16:30	Practical Session (Venue: Lab Block) • Instrument parts • Mobile phase and sample preparation • Standard samplesanalysis • Data interpretation exercise • Calculations • Discussions to close workshop	Ajeet Singh Edna Joseph	Analytical & Instrumentation Lab, Lab Block, VC
16:30 to 17:00	Tea		Foyer Learning center, VC
17:00 to 17:30	Closure – Feedback, Certificate distribution	V Premnath/ Manisha P	E-Class Room, VC

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Time	Session title	Lead	Venue
Day 2| 21st December: Workshop on Mass Spectrometry			
9:00 to 9:30	Registration		Foyer Learning center, VC
9:30 to 9:40	Introduction to the course and faculty	V.Premnath / Manisha P	E-Class Room, VC
9:45- 11:00	Fundamentals of Mass Spectrometry - 1		E-Class Room, VC
11:00 to 11:10	Tea		
11:10 to 13:15	Fundamentals of Mass Spectrometry - 2	Ajeet Singh	E-Class Room, VC
13:15 to 14:00	Lunch		Cafeteria, VC
14:00 to 16:30	Demo sessions	Ajeet Singh Edna Joseph	CAMS, VC
16:30 to 17:00	Tea		Foyer Learning center, VC
17:00 to 17: 30	Closure; Certificate Distribution & Feedback	V. Premnath/ Manisha P	E-Class Room, VC

Anchor Faculty

	**Dr. Ajeet Singh** has more than 7 years of research experience in mass spectrometry. He is a Scientific Consultant at the Center of Applications of Mass Spectrometry (CAMS), Venture Center and co-founder of Barefeet Analytics Private Limited.He has a M.Sc. in Analytical Chemistry from the Indian Institute of Technology (IIT), Roorkee and Ph.D. in Chemistry from NCL Pune (AcSIR).He specializes in Mass Spectrometry and Mass Analysis. His expertise lies in method development for proteomics, qualitative as well as quantitative analysis of small molecules, pharmaceuticals drugs, pesticides, food contaminants and metabolites.
Other Faculty	Dr V. Premnath is Scientist, Complex Fluids and Polymer Engineering Group at NCL, Pune, Head, NCL Innovations and Director, Venture Center. He specializes in Polymer Science and Engineering. Mrs. Sujaya Ingale and Ms. Edna Joseph shall organize and assist in lab demos.

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/