

**Short-term course  
for  
Recent Techniques on Mass  
Spectrometry and Purification  
(13 July 2016)**



Organized by

DEPARTMENT OF CHEMISTRY

NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR  
LANGOL, PIN-795004, MANIPUR, INDIA

**Organizing Committee**

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**Venue**

Conference Hall, National Institute of Technology Manipur, Langol  
Campus

**Objective of the Workshop**

The course aims at bringing the information regarding utility and necessity of the Reaxys along with the Medicinal Chemistry database and their up-to-date information in a comprehensive and co-ordinated manner.

**Theme of the conference:**

The workshop focuses on following topics:

Morning Session:

1. Evolution of Column Particles:

- \* Different Bonded Phases
- \* Newer Small Particles, L/Dp, HETP
- \* Selectivity Chart
- \* Improving Resolution - Efficiency, Retentivity and Selectivity
- \* Different Column Selection for quicker Method Development Process

2. Transforming from HPLC to UPLC:
  - \* Fundamental Principles of HPLC, GPC
  - \* Adding Different Axes to a Chromatogram
  - \* Effect of System Volume, Bandspread Volume
  - \* Gradient Runs - Delay, transfer of methods
  - \* UPLC - Why and How, Benefits
  - \* Ultra Performance Convergence Chromatography - is it a replacement of Normal Phase ?

**3. Detector Selection:**

- \* UV, PDA, FLD, ECD, RI, ELSD
- \* When and How to select right detector - Based on Molecule, Matrix, Min Detection Limits
- \* Few Applications for each detector
- \* QDa beyond PDA - Adding m/z axis to a chromatogram

**4. Mass Spectrometry:**

- \* Fundamentals of Ionization, Analyzer and Detector
- \* How Selectivity and Sensitivity is improved in MS, MSMS - Single and Tandem Quadrupoles
- \* Which technique to use for Identification, Confirmation, Quantitation and Structural Elucidation
- \* Briefing on : SIR, MRM, PIC scan, Nominal & Accurate Mass, Collision Cell, Molecular Structure, Multiple Charges, Deconvolution, B & Y ions

**POST LUNCH SESSION:**

- We will cover the models of Waters XevoTQD, XevoTQS micro, Xevo TQ-XS - Tandem Quadrupoles:
- Identification, Quantitation with Examples
- When, Why and How of Hi Resolution Mass Spectrometry covering the models of Vion, Xevo G2 XS, Synapt G2 Si
- Application Segments include Proteins, Peptides, AAA, Glycans
- Organo metallic compounds, Conjugates, Enantiomeric substances
- Synthetic Chem applications for identification and Quantitation
- Differentiating Waters with Technology:
- Z Spray - Ionisation Mode, ESI and ES/CI, ASAP
- APGC and LCMS on one machine
- Step Wave - Removal of neutrals and Matrix
- T Wave - Collision cell
- RADAR - Full Scan, MRM simultaneously
- PMT detector and QUANTOF 2
- V and W modes on TOF - Improves sensitivity and resolution
- MS-E - Data Dependant and Data Independent hi accurate mass
- Tri Wave - Ion Mobility Spectrometry - Trap - IMS - Transfer

## Targeted Audience

- Faculty members
- Research scholars
- Postgraduate students