



# WORKSHOP ON STATISTICAL METHODS FOR CHEMISTS 2024

Organized by  
IKM (Perak Branch) Professional Training Centre



**16 & 17  
NOVEMBER**



**Tower Regency Hotel**  
6-8, Jalan Dato Seri Ahmad  
Said, 30450 Ipoh, Perak



## Contact details

Ms Chon Huey Chian  
chonhueychian@gmail.com  
016-5120710



## Registration fee

IKM Member: RM 750.00  
IKM Member (HRDC): RM 780.00  
Non-IKM Member: RM 950.00  
Non-IKM Member (HRDC): RM 988.00

## TRAINER'S PROFILE

Prof ChM Dr Teh Geok Bee FASc received her M.Phil and Ph.D. in Chemistry from University of Cambridge, United Kingdom in 1998 and 2000 under the sponsorship of Cambridge Malaysia Chevening and Cambridge Commonwealth Trust Scholarships, respectively. She received her first class honours degree from Universiti Kebangsaan Malaysia in 1995 and has been actively involved in research especially in the synthesis and characterization of magnetic nanoparticles. Her expertise is in the field of structural elucidation of nanoparticles using high resolution transmission electron microscopy.

Dr Teh is the recipient of New Zealand ISAT Linkages Fund and the UNESCO-TWAS Associateship Scheme which enable her involvement in international research collaborations. She has served Institut Kimia Malaysia (IKM) in various capacities, including serving as Council Member (since 2007), Honorary Assistant Secretary (2009-2013), Honorary Assistant Treasurer (2014-2015), representing IKM in the ISO/TC 229 Working Group 3, which is working towards ISO regulatory guidelines in "Health, Safety and the Environment Relevant to Nanotechnologies" and Member to ISC B and ISC Y Standards Committee Groups.

Dr Teh has served as an Associate Fellow of the Academy of Sciences Malaysia (2010-2016) and served as a Taskforce Committee Member to the National Nanotechnology Directorate under the Malaysian Ministry of Science, Technology and Innovation from 2011-2017. She is an appointed Malaysian Qualifications Agency Assessor for the chemistry programme since 2008 and a Malaysian Laboratory Accreditation Scheme Technical Assessor for ISO/IEC 17025 since 2011. She is the National Representative (NR, 2014-2015) and Associate Member (AM, 2016-2017) and Titular Member (2018-2021) to International Union of Pure and Applied Chemistry (IUPAC), Division VII: Chemistry and Human Health Division.

Dr Teh holds Fellowships in the Cambridge Commonwealth Society (since 1998), Institut Kimia Malaysia (IKM; since Dec 2015) and Academy of Sciences Malaysia (ASM; since April 2021). She was the President / Chief Executive Officer of Southern University College at Skudai, Johor, Malaysia from 2019 - 2023. Currently, she is the Vice Chancellor of SEGi University.



**PROF ChM DR TEH GEOK  
BEE FASc**

**Registration closing date: 31 OCTOBER 2024**

# Workshop Course Contents



## 1. Part 0: Introduction to Method Validation

- Validation
- Test and Calibration Methods
- SAMM Scheme Specific Criteria 1.2
- Type of Analytical Methods to be Validated
- General Requirements

## 2. Part A: Descriptive Statistics

- Population distribution – normal, triangular, rectangular, skewed
- Measure of location – means, median
- Measure of dispersion – variance, standard deviation, range, robust statistics
- Standard error of the mean, confidence limits
- Error – random error, systematic error,
- Uncertainty, Accuracy of Measurement

## 3. Part B: Outlier Tests

- Dixon's Test
- Grubb's Test
- Cochran's C Test

## 4. Part C: Significant Testing

- The hypothesis
- One-sided or two sided
- Student t-test, F-test, Critical Values
- Comparison of data for accuracy and precision
- Comparison of data for proficiency testing

## 5. Part D: Regression Analysis

- Types of regression models
- Residual & residual standard error
- Residual plot
- Method validation – linearity
- Method of standard addition

## 6. Part E: Control Chart

- What is a control?
- Quantitative QC Implementation
- Levey-Jennings Chart

## 7. Part F: ANOVA

- Variations between and within groups
- Types of ANOVA
- Rationale for ANOVA
- One-way ANOVA
- Determination of method's measurement uncertainty

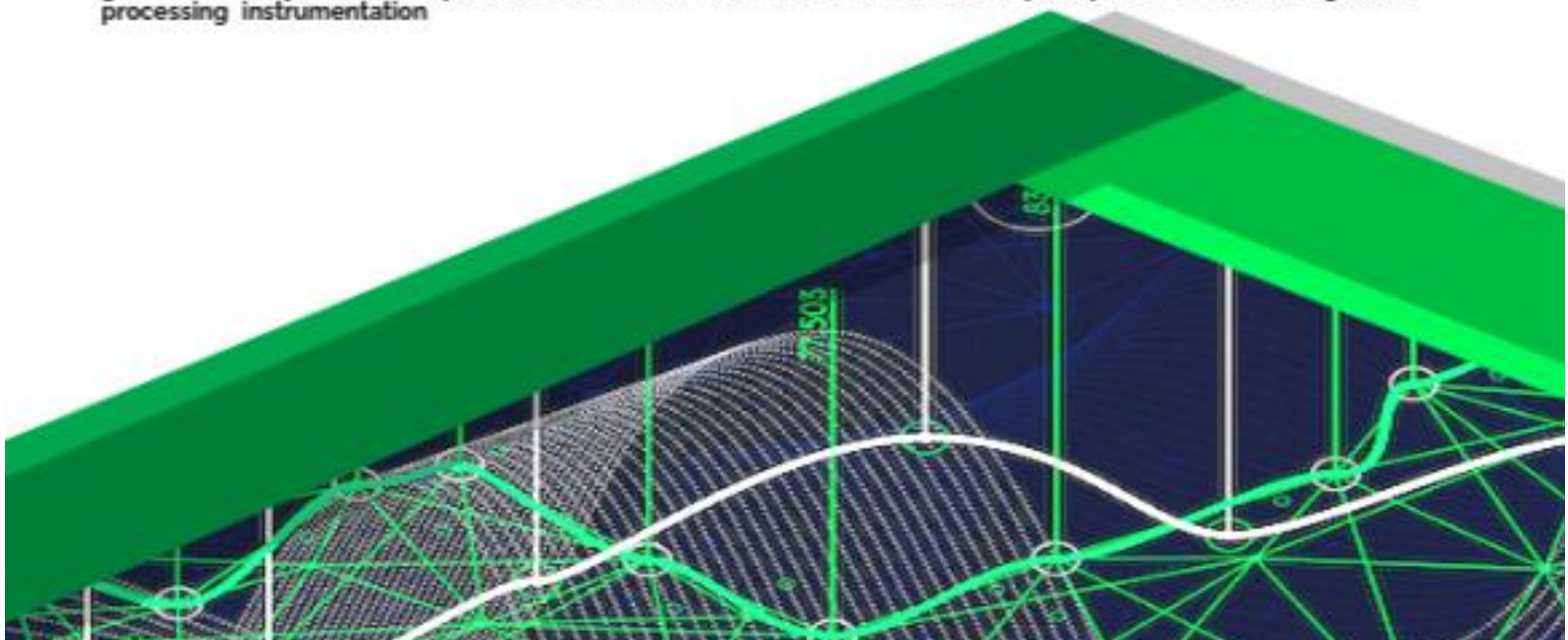
## Learning Outcome of the Course

At the end of the course, the participants should be able:

- To recognise the different probability distributions: normal, rectangular and triangular;
- To identify the outliers from a set of analytical data by statistical analysis;
- To carry out significance testing for differences, if any, between two methods, techniques or analysts' performances for method validation;
- To set up simple laboratory quality assurance practises based on control charting;
- To interpret data output from MS Excel data analysis software applications

## Who Should Attend

Supervisor, laboratory technicians people in charge of facilities who continually seek to enhance knowledge of good laboratory skills and practices as well as to understand the basic principles of data management, processing instrumentation





## Terms Conditions

The organizer reserves the right to make changes on the programme, cancel or reschedule the programme due to unforeseen circumstances. All efforts will be made to inform registered participants of such changes. The organizer will not be responsible for any damages or expenses suffered by the participants as a results of alternative arrangements made

The workshop registration fee must be paid to:

**"Institut Kimia Malaysia Perak Branch"**  
**Public Bank**  
**3096895915**

No refund of registration fee for cancelation of registration after the closing date. However, a registered participant can be replaced with another person at no additional cost.

## Kindly email the registration form payment slip to

Ms Chon Huey Chian  
chonhueychian@gmail.com  
016-5120710

## For hotel room reservation, please contact

Tower Regency Hotel  
6-8, Jalan Dato Seri Ahmad Sald, 30450 Ipoh, Perak  
Email: ipso@towerregency.com.my  
Mobile number: 016-545 1299

## Registration Form (Code: BSM)

Participants' Name (Include IKM membership Number)	IKM Member	Non IKM Member
1. ....	<input type="text"/>	<input type="text"/>
2. ....	<input type="text"/>	<input type="text"/>
3. ....	<input type="text"/>	<input type="text"/>
4. ....	<input type="text"/>	<input type="text"/>
5. ....	<input type="text"/>	<input type="text"/>

## Company Name and Address

.....  
.....  
.....  
.....

Telephone Number:.....

Email:.....