



# Innovative Ways for Chemistry Experiments

A practical workshop that shares innovative chemistry experiments using **Micro-scale equipments** to bring out difficult-to-teach yet important Chemistry concepts!

Experiments in Laboratories are fundamentals for teaching and learning Chemistry. In these practical workshops, Mr Chan will share some non-traditional, innovative and interesting methods for conducting Chemistry Experiments. Participants will have hands-on experience on low-cost and innovative micro-scale experiments and be engaged in pre and post-lab discussions, with reference to the current Singapore Syllabus context. Participants will be able to see how micro-scale equipments can be acquired easily to replace those expensive commercial ones and how they are able to save chemicals, reduce hazards and promote "Green Awareness".

### For 'O' Level Teachers- 15 Mar 2010, 2pm to 5pm

- Quantitative and qualitative investigations of electrolysis
- Microscale determination of molar volume of gases
- Thermo-cracking of alkane
- Free radical bromine substitution of alkane
- "Silly Putty" and polymerization

+ Geared to the OL Syllabuses

+ Sharing innovative equipments, some can even be self-made by teachers for use in experiments

Participants will receive a set of **Electrolysis Tube**

### For 'A' Level Teachers – 16 Mar 2010, 9am to 4pm

- Calibration of antimony pH meter
- Determination of Ka of ethanoic acid by pH measurement
- pH titration curves
- Discussion on equipment acquisition
- Ksp of calcium hydroxide by microscale titration
- Thermo-cracking of alkane
- Determination of Heat of Combustion of propan-1-ol
- Free radical bromine substitution of alkane

+ Geared to the new AL Syllabuses

+ Suitable for School-based Science Practical Assessment (SPA)

Participants will receive a set of **24-well plate and antimony electrode**.

### About the Speaker

**Mr KM Chan** is the director of MicroChem Lab, Hong Kong. Before that, he was the Chemistry Curriculum Planner from the Curriculum Institute of Education and Manpower Bureau in the Government of Hong Kong. He was also the Head of Chemistry Department for St. Stephen's College in Hong Kong. Mr Chan is an expert in Microscale Chemistry and has published papers related to this area in countries like Israel, Mexico, Singapore and Hong Kong.

### About the Organiser

**Synergyst** is a training consultancy passionate in promoting *Professional Development of Teachers & Experiential Learning of Students* through Creative Teaching and Learning. Working with a pool of enlightened and world-renowned professionals, we provide a wide range of services, including workshops, enrichment programmes, exciting science and maths shows, educational trips to Thailand, China and Vietnam and designing of science corners or exhibition.



Yes! Please register me for "Innovative Ways for Chemistry Experiments", Venue: TBC

- 15 Mar 2010 for 'O' Level teachers from 2pm- 5pm     16 Mar 2010 for 'A' Level teachers from 9am -4pm
- For 15 Mar**     Normal rate of S\$120 nett/person     Group rate of S\$100 nett/person for 3 or more     Past participant at \$90 nett\*
- For 16 Mar**     Normal rate of S\$230 nett/person     Group rate of S\$210 nett/person for 3 or more     Past participant at \$200 nett\*
- (No Lunch will be provided for this workshop)**

Institution _____	Tel _____	Fax _____
Address _____		S( _____ )
Name _____	Job Title _____	HP _____ Email _____
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Name _____	Job Title _____	HP _____ Email _____
Payment by <input type="checkbox"/> IFAAS <input type="checkbox"/> Institution Cheque <input type="checkbox"/> Personal Cheque. cheque no. _____		

For registration, please fax, mail or email your particulars to and make your cheque payment payable to **Synergyst Pte Ltd**, 10 Tampines Road, Singapore 535065. Upon receipt of registration, any request for cancellation will be charged a 30% admin fee and must be made in writing, no later than 7 working days before the event. In the event of cancellation less than 7 working days or if participant fails to attend, the participant is liable for the full fee. Synergyst reserves the right to amend, postpone or cancel the event due to unforeseen circumstances.

\* past participants refer to those who had attended Mr KM Chan's Chemistry workshops only.

(WEB)

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