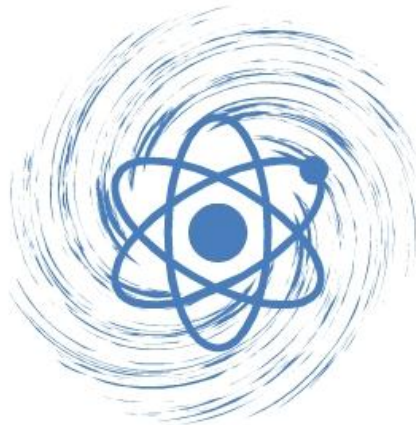


**The 2nd International Conference on Science &  
Engineering in Mathematics, Chemistry and Physics  
2014  
(SciTech 2014)**

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# Conference Book



**SciTech 2014**

**The Exchange Room, 5th Floor, Media Hotel, Jakarta Indonesia  
Jl. Gunung Sahari Raya No 3  
Jakarta 10720 - Indonesia  
13 - 14 January 2014**

**JOURNAL OF PHYSICS: CONFERENCE SERIES**

2014 International Conference on Science & Engineering in Mathematics, Chemistry and Physics (SciTech 2014)  
The Exchange Room, 5th Floor, Media Hotel, Jakarta Indonesia  
Jl. Gunung Sahari Raya No 3  
Jakarta 10720 - Indonesia

# **The 2nd International Conference on Science & Engineering in Mathematics, Chemistry and Physics 2014 (ScieTech 2014)**

## **Instructions for Presenters**

1. Please check this Program for your presentation time(s) and room(s). Please go to the room five minutes before the session starts and report to the Session Chair.
2. Please do not exceed your allotted time. Please follow the instructions of the Session Chair.
3. If the Session Chair(s) is/are absent from the session, the last speaker should serve as the Session Chair.

## **Instructions for Session Chairs**

Session chairs are kindly requested to do the following:

1. Calculate the time allocated for each paper in your session. The time allocated to a paper may be different in different sessions, due to uneven distributions of papers in different areas (the number to the left of a session in the "Conference Program" next page shows the number of papers allocated to this session) and a small number of absentees due to visa and other reasons.
2. Arrive at the room of the session five minutes before the session starts and identify each of the speakers for the session.
3. Do not allow presentations or the subsequent discussions to run beyond the starting time of the next presentation.
4. If the presenter of a paper is absent ("no-show"), please continue to the next presentation. Please check again at the end of the last presentation whether the "no-show" turns up. Best efforts have been made to reduce the number of no-shows; however, they may not be eliminated.
5. Each oral presentation room is equipped with an LCD projector. If something is not working properly, please contact conference staff.

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# The 2nd International Conference on Science & Engineering in Mathematics, Chemistry and Physics 2014 (SciTech 2014)

## Keynote Speaker



### **Keynote title:**

Palladacycle Catalyzed Asymmetric P-H Addition Reactions

### **Speaker:**

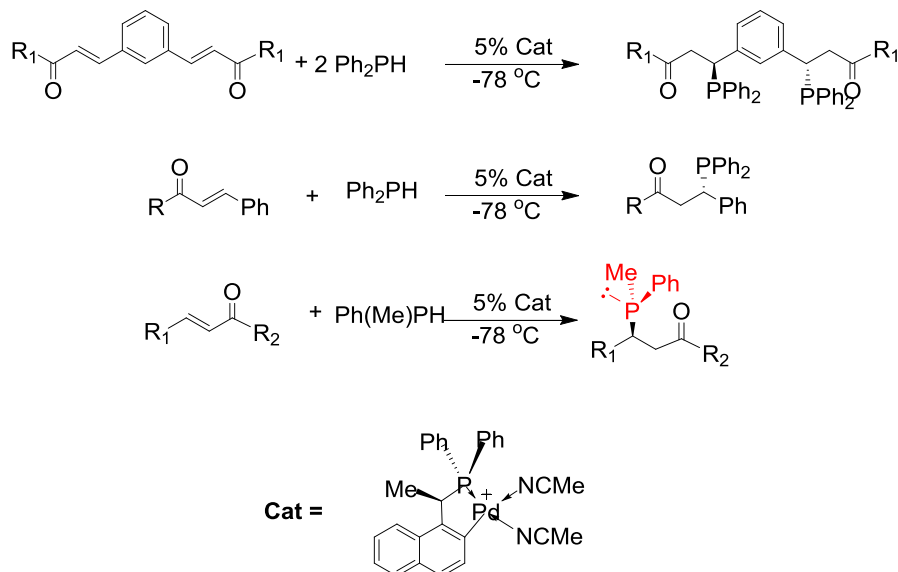
Professor Pak-Hing LEUNG  
Nanyang Technological University

### **Abstract:**

Chiral aza- and phospha-palladacycles are found to function as highly efficient catalysts for the asymmetric P-H addition reaction. The versatile protocol allows for the asymmetric hydrophosphination of olefinic C=C bonds thus yielding a family of tertiary C\*-phosphines as well as C\*P\*-phosphines and diphosphines, depending on the nucleophile employed. The addition of two equivalents of HPPH<sub>2</sub> to symmetrical bifunctionalized alkynes leading to generation of two new C\* centers is also achievable. The air-sensitive nucleophiles and the unsaturated substrates containing unprotected functionalities such as aldehyde, keto, ester, cyano and alcohol can be utilized directly under this mild and facile reaction conditions. The methodology is equally efficient when applied to the generation of P-N ligand systems *via* hydrophosphination of unsaturated pyridyl-based substrates as well as systems with C=N moieties. This synthetic strategy therefore offers to be a versatile approach for the generation of a wide range of chiral tertiary phosphine ligands with potential applications in further catalytic processes.

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### About the Speaker:

Professor Pak-Hing LEUNG (梁百興) was born in Hong Kong (1956). Tertiary Education: Polytechnic of North London (BSc Hons 1982, FYP supervisor: Peter A Tasker), Australian National University (PhD 1986, supervisor: S. Bruce Wild), University of Toronto & University of Chicago (posdoc fellow, 1987-1989, supervisor: Brice Bosnich). He was Professor and Deputy Head of the Department of Chemistry at the National University of Singapore till 2005 after which he was invited to be the founding Head of the Chemistry Division of the new School of Physical and Mathematical Sciences (SPMS) at the Nanyang Technological University, Singapore. He has served as Vice-Dean at SPMS and Head of the Division of Chemistry and Biological Chemistry. So far, he has received a University Researcher Award (NUS, 1998), 14 Teaching Awards (since 1993, both from NUS and NTU). He has published more than 140 peer-reviewed articles in the area of asymmetric synthesis, stereochemistry of phosphorus and organometallic compounds

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# The 2nd International Conference on Science & Engineering in Mathematics, Chemistry and Physics 2014 (SciTech 2014)



**Title :**

Mathematical Models of HIV/AIDS and Opportunist Diseases.

**Speaker :**

Prof. (Dr.) Nita H. Shah  
Professor in Mathematics  
Department of Mathematics,  
Gujarat University  
Ahmedabad, Gujarat, India

**Abstract:**

Mathematical models help in understanding the population dynamics of HIV/AIDS. An epidemic is defined as an outbreak of a disease that infects a substantial portion of the community. In twentieth century, HIV/AIDS has created a havoc killing millions globally. Once infected, infective virus remains silent for 8 - 10 years, without any symptoms of HIV infection. This period is known as latent period. During this latent period, person's immune system and CD4+ cells get severely damaged by the virus resulting loss of fighting immunity against diseases. At this stage, person is diagnosed To have AIDS. Because of low immunity, patient catches malaria, tuberculosis opportunist diseases very easily.

In this talk, aim is to develop transfer flow for the diseases in different compartment; viz. susceptible, exposed, infective etc. through differential equations. The basic reproduction number will be discussed. Using control theory, disease free equilibrium is derived which is locally asymptotically stable. Simulation study is discussed to predict the dynamics of HIV/AIDS with opportunist diseases.

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## **About the Speaker:**

Dr. Nita H. Shah is Professor of Mathematics in Department of Mathematics, University School of Sciences, Gujarat University, India. Her research interest is in Operations Research and in particular, Modelling real life problems. She hold PhD from Gujarat Universty and Post Dodctoral Fellow from University of New Brunckwick, Canada. She ahas published more than 5 books in the area of Mathematics.



## **Title :**

Higher grading affine Toda solitons from quantum algebras.

## **Speaker :**

Dr. Alexander Zuevsky,  
Senior Researcher, Czech Academy of Science, Prague, Czech Republic

## **Abstract:**

We construct special types of quantum soliton solutions using quantum Lie algebras associated to affine Lie algebras

## **About the Speaker:**

Dr Alexander hold PhD from Moscow institute of physics and technology in the area of Mathematical Physics. His research interest are Representation theory:, Automorphic Forms, Mathematical Physics. He is Senior Researcher, Czech Academy of Science, Prague, Czech Republic and member International Association of Mathematical Physics. He has Research Fellowships, Max-Planck Institut für Mathematik, Bonn and

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# The 2nd International Conference on Science & Engineering in Mathematics, Chemistry and Physics 2014 (SciTech 2014)

## Conference Program

Notes/Session ID

<b>Day 1: 13 January 2014</b>		
08:00 - 09:00	Registration Starts (available for 2 days)	
09:00 - 09:10	Opening by General Chair	
09:10-09:40	Keynote Speaker : Professor Pak-Hing LEUNG - Palladacycle Catalyzed Asymmetric P-H Addition Reactions	
09:45 - 10:15	Keynote Speaker : Professor Nita H. Shah- Mathematical Models of HIV/AIDS and Opportunist Diseases	
10:15 - 10: 45	Photo Session & Coffee Break	
10: 45 - 12:00	<b>Sessions: Chemistry</b>	
	102	Linear free energy relationship and Deuterium kinetic isotope effect observed on Phospho and thiophosphoryl transfer reactions in some organophosphorous compounds
	117	temperature effects on diffusion coefficient for 6-gingerol and 6-shogaol in subcritical water extraction
	124	The selection reaction of homogeneous catalyst in soy-epoxide hydroxylation
	143	The Evaluation of Hydroxyapatite (HA) Coated and Uncoated Porous Tantalum for Biomedical Materials Applications
	154	On the Marangoni Instability in Gas Absorption
	156	Selective fermentation of pitted dates by <i>S. cerevisiae</i> for the production of concentrated fructose syrups and ethanol
12:00 - 13:00	Lunch Break	
13:00 - 15:00	<b>Session : Physics 1</b>	
	101	New View of the Relativity Theory
	114	The Space-Time Model According the Dimensional Continuous Space-Time Theory
	104	The New Big Bang Theory according to the Dimensional Continuous Space-Time Theory
	158	The development of GPS TroWav tool for atmospheric – terrestrial studies
	159	Analysis distribution of galactic cosmic rays particle energy with polar orbit satellite for Geant4 application
	160	Forecasting the Earth's Trapped Particle Distribution Using Hierarchical Bayesian Spatio Temporal Model
	161	Spatial Analysis of Galactic Cosmic Ray Particles in Low Earth Orbit/Near Equator Orbit Using SPENVIS
	128	Instantaneous and scale-versatile gourdron theory: pair momentum equation, quasi-stability concept, and statistical indeterminacy revealing masses of elementary,

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		bio-molecular, and cosmic particles
	113	The Influence of BTO-BHF Different Composition on its Ferroelectric Properties
	118	Intrinsic Hysteresis Loops Calculation of BZT Thin Films
	131	Using Adaptive Filters for GPS Receivers
15:00 - 15:15		Coffee Break
15:15 - 18:15		Sessions: <b>Physics 2</b>
	106	Development of CMOS Imager Block for Capsule Endoscope
	120	Applicability of nano zero valent iron (nZVI) in sono-Fenton process.
	122	Designing Process Improvement of Finished Good On Time Release and Performance Indicator Tool in Milk Industry Using Business Process Reengineering Method
	123	Performance Evaluation of a Drilling Project in Oil and Gas Service Company in Indonesia by MACBETH Method
	126	The Influence of Basic Physical Properties of Soil on its Electrical Resistivity Value under Loose and Dense Condition
	132	REVIEW ARTICLE: Recent Advances in Nanomaterials Fabrications
	136	Low Wireless Power Transfer Using Inductive Coupling For Mobile Phone Charger
	137	Effects of Taiwan Roselle anthocyanin treatment and single-walled carbon nanotube addition on the performance of dye-sensitized solar cells
	139	Weldability of A7075-T651 and AZ31B dissimilar alloys by MIG welding method based on welding appearances
	148	Electrical Conductivity Characteristics of TiO <sub>2</sub> Nanowires From Hydrothermal Method
	149	10 GHz Microstrip Spanar Antennas: An Experimental Analysis
	150	Energy Monitoring Based on Human Activity in the Workplace
	164	Phenomena of Foamed Concrete under Rolling of Aircraft Wheels
	175	Ionic Wind Phenomenon and Charge Carrier Mobility in Very High Density Argon Corona Discharge Plasma
	170	Design and Analysis of Various Microcantilever Shapes for MEMS Based Sensing
	182	Error Correction for Foot Clearance in Real-Time Measurement
	176	Low Power Shoe Integrated Intelligent Wireless Gait Measurement System
	181	Prediction and Validation of Heat Release Direct Injection Diesel Engine Using Multi-Zone Model
19:00 - 20:00		Dinner Banquet

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## The 2nd International Conference on Science & Engineering in Mathematics, Chemistry and Physics 2014 (ScieTech 2014) Conference Program

Notes/Session ID

<b>Day 2: 14 January 2014</b>	
09:00-09:30	Invited Speaker : Dr Alexander Zuevsky - Higher grading affine Toda solitons from quantum algebras
09:30 - 09:45	Coffee Break
09:45 - 12:00	Sessions: <b>Mathematics</b>
	127 Aitken delta-squared generalized Jungck-type iterative procedure
	130 Optimal Cycle Time and Preservation Technology Investment for Deteriorating Items with Price-sensitive Stock-dependent Demand Under Inflation
	138 SOLUTION OF ONE PHASE INVERSE STEFAN PROBLEM BY IEF METHOD
	146 Numerical Solutions of Free Convection Boundary Layer Flow on a Solid Sphere with Convective Boundary Conditions
	147 IDENTIFYING POTENTIAL MISFIT ITEMS IN COGNITIVE PROCESS OF LEARNING ENGINEERING MATHEMATICS BASED ON RASCH MODEL
	152 A Survey on Human Behavior Towards Energy Efficiency for Office Worker in Malaysia
	151 Application of Genetic Algorithm to the Design Optimization of Complex Energy Saving Glass Coating Structure
	153 Implicit finite difference solution for time-fractional diffusion equations using AOR method
	172 Improvement Text Compression Performance Using Combination of Burrows Wheeler Transform, Move to Front, and Huffman Coding Methods
	179 The Estimation Process in Bayesian Structural Equation Modeling Approach
12:00 - 13:00	Closing & Lunch Break
19:00 - 20:00	Dinner Banquet

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# **The 2nd International Conference on Science & Engineering in Mathematics, Chemistry and Physics 2014 (ScieTech 2014)**

## **Conference Location**

### **Media Hotel & Towers.**



Close to north Jakarta's must-sees, including its world-class shopping district Mangga Dua, and the city's flourishing business and manufacturing districts, The Media Hotel & Towers is a luxury 5-star hotel in Jakarta with easy access to the Jakarta International Expo and the Jakarta International Airport.

Created to be mini retreats, our 350 hotel guest rooms have everything for a wonderful night. With facilities as 4 different restaurants, 2 lounges, a spa and fitness centre and multiple function rooms, The Media Hotel & Towers is the perfect location for a memorable stay.

**Oxventus Kumala (MR)**  
**Account Manager**

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**Jl. Gunung Sahari Raya No. 3, Jakarta 10720, Indonesia**

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## **Destination Information**

Jakarta is the Capital City of The Republic of Indonesia, a country composed of more than 13.000 islands with a population of over 180 million. Jakarta is a special territory enjoying the status of a province, consisting of Greater Jakarta, covering of 637.44 square km area. Strategically positioned in the archipelago, the city is also the principal gateway to the rest of Indonesia. From the Capital City, sophisticated land, air and sea transport is available to the rest of the country and beyond.

Jakarta is a city of contrast; the traditional and the modern, the sacral and the wordly, often stand side by side in this bustling metropolis. Even its population gathered from all those diverse ethnic and cultural groups, which compose Indonesia, are constantly juxtaposed present reminder of the national motto, Unity in Diversity.

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