

# AMGS Cross Mentoring Research Activity 2017-2018

## Syllabus

### I. Mentor

#### 1. Personal Information

Name	Prof. Y.H. Taufiq-Yap
Mobile Number	+6012-6293195
School or Institute	Universiti Putra Malaysia
E-mail	taufiq@upm.edu.my
Major	Heterogeneous Catalyst, Chemistry

#### 2. Education

	Year	Name of University	Major	Degree	Nation
Bachelor's degree	1992	Universiti Pertanian Malaysia (UPM)	Chemistry	Bachelor of Science	
Master's degree	1994	Universiti Pertanian Malaysia (UPM)	Natural Products Chemistry	Master of Science	
Doctorate	1997	University of Manchester Institute of Science and Technology (UMIST), U.K..	Heterogeneous Catalysis	Ph.D	
Dissertation					

#### 3. Experiences

Duration	Position	Institute or University
Sept 2014 - Sept 2017	Deputy Director Research Management Centre	Universiti Putra Malaysia
Feb 2013 - Sept 2015	Head, Catalysis Science and Technology Research Centre	Universiti Putra Malaysia

June 2013 - now	Professor (VK6), Department of Chemistry UPM	Universiti Putra Malaysia
Oct 2007 – May 2013)	Professor (VK7), Department of Chemistry UPM	Universiti Putra Malaysia
Oct 2012 – Mac 2013	Visiting Professor	Nagoya University, Japan

#### 4. Honors and Awards

Year	Title	Remarks
2014	Top Research Scientist Award	Awarded by Malaysian Ministry of Science, Technology and Environment for outstanding research scientist in Malaysia
Oct 2012 – Mac 2013	Visiting Professor	Nagoya University, Japan
July 2012 – June 2013	Visiting Professor	Universiti Teknologi PETRONAS
2009	Fellow	Malaysian Institute of Chemistry
2008	MASS Young Researcher Award	Malaysian Solid State Science and Technology Society
2008	The Outstanding Young Malaysian Award for category Scientific and Technological Development.	Awarded by Junior Chamber International Malaysia.
2008	Fellow	The Royal Society of Chemistry, United Kingdom -
2002	National Young Scientist Award	Awarded by Malaysian Ministry of Science, Technology and Environment, for outstanding research performance for scientist below the age of 35.

## 5. Professional Societies

- a) Titular Member of Division I, International Union for Pure and Applied Chemistry (IUPAC) (Division Physical and Biophysical Chemistry) (2014-15).
- b) Member, Malaysian Society for Engineering & Technology (2010 – now)
- c) Fellow (FMIC), Malaysian Institute of Chemistry (November 2009 - present).
- d) Fellow (FRSC), Royal Society of Chemistry, United Kingdom (September 2008 - present).
- e) Associate Member (AMIChemE), Institution of Chemical Engineers (IChemE), United Kingdom (2010 – present).
- f) Executive Board Member of the Malaysian Analytical Sciences Association (ANALIS) (2006-2009, 2010 - present).
- g) Committee Member, Asia Pacific Association of Catalysis Society (APACS) (2003 – present)
- h) Member of the Malaysian Analytical Sciences Association (2000-present).
- i) Member of the Malaysian Natural Products Society (1998 - present).

## II. Syllabus

### 1. Course Title & Criteria

Course Title	<b>Biofuels, Biomass &amp; Wastes</b>
Criteria	<input type="checkbox"/> Biology & Applied Biology
	<input checked="" type="checkbox"/> Chemistry
	<input checked="" type="checkbox"/> Green Energy & Environmental Science
	<input type="checkbox"/> Integrated Science
	<input type="checkbox"/> Medicinal Science
	<input type="checkbox"/> Nano Science
	<input type="checkbox"/> Physics
	<input type="checkbox"/> Others

## 2. Course Objectives & Description

At the completion of this course, students will be able to:

1. Describe the nature and principles of different biomass energy extraction systems and know how to choose suitable biomass fuels for different bio-energy applications;
2. Describe the nature and principles of different biomass energy extraction systems and know how to choose suitable biomass fuels for different bio-energy applications

## 3. Required Textbook or papers:

1. Demirbas, A, Biofuels securing the planet's future energy needs, *Energy Conversion and Management Volume 50, Pages 2239-2249 (2009)*
2. Demirbas, A., Biomass resource facilities and biomass conversion processing for fuels and chemicals, *Energy Conversion and Management volume 42, Pages 357-1378 (2001)*
3. A. Islam, Y.H. Taufiq-Yap, C.-M. Chu, E.-S Chan, Ravindra, P., Studies on Design of Heterogeneous Catalysts for Biodiesel Production, *Process Safety and Environmental Protection, Volume 91, Pages 131-144 (2013)*
4. Yun Hin Taufiq-Yap, P. Wong, N. M. Nurul Suziana, L. H. Tang, T. S. M. Tengku Azmi, Hydrogen Production from Biomass Gasification of *Azadirachta Excelsa* Wood Using Combusted Eggshell As Catalyst, *International Journal of Energy Research, Volume 37 (14) , Pages 1866-1871 (2013)*
5. Joon Ching Juan, Damayani Agung Kartika, Ta Yeong Wu, Taufiq-Yap Yun Hin, Biodiesel Production from *Jatropha* Oil by Catalytic and Non-Catalytic Approaches: An Overview, *Bioresource Technology, Volume 102, Pages 452-460 (2011).*
6. Y.H. Taufiq-Yap, H.V. Lee, R. Yunus and M.Z. Hussein, Calcium-Based Mixed Oxides Catalysts for Methanolysis of *Jatropha curcas* Oil to Biodiesels, *Biomass and Bioenergy, Volume 35, Pages 827-834 (2011).*
7. Mohammed, M.A.A., Salmiaton, A., Wan Azlina, W.A.K.G., Mohammad Amran, M.S., Fakhru'l-Razi, A., Y.H. Taufiq-Yap, Hydrogen Rich Gas from Oil Palm Biomass as A Potential Source of Renewable Energy in Malaysia, *Renewable and Sustainable Energy Reviews, Volume 15, Pages 1258-1270 (2011).*

## 4. Final Outcome

Mid-term Report	[ ] Due date:
Final Report	[ ] Due date:
Research Article for APEC Youth Scientist Journal	[ x ] Due date: January 27, 2017

## 5. Schedule

Week	Topics and Activities	Assignments & Other Instructions
Week 1	Current World Energy	
Week 2	Overview of biomass energy	
Week 3	Bioethanol	
Week 4	Thermochemical conversions of biomass - Gasification	
Week 5	Thermochemical conversions of biomass - Pyrolysis	
Week 6	Thermochemical conversions of biomass – Supercritical Water Gasification	
Week 7	Biodiesel from fresh vegetable Oil	
Week 8	Biodiesel from Waste Cooking Oil	
Week 9	Renewable Diesel	
Week 10	Energy from waste	
Week 11-15	Research Article Writing for APEC Youth Scientist Journal	
March 28	Mentee should submit their research article to AMGS admin. team	