

15th APEC Cross Mentoring Research Activity

Research Syllabus

I. Mentor

1. Personal Information

Name	Prof. Somrat Kerdsuwan
Mobile Number	+66894800014
School or Institute	King Mongkut's University of Technology North Bangkok
E-mail	somrat.k@eng.kmutnb.ac.th, somrat_k@yahoo.com
Major	Combustion, Energy, Waste Management

2. Education

	Year	Name of University	Major	Degree	Nation
Bachelor's degree	1988	King Mongkut's University of Technology North Bangkok	Mechanical Engineering	Bachelor of Engineering	Thailand
Master's degree	1991	University of Poitiers	Energy	DEA	France
Doctorate	1994	University of Poitiers	Combustion	PhD	France
Dissertation	Incineration of Municipal Solid Waste in a rotary kiln				

3. Experiences

Duration	Position	Institute or University
1994 - Present	Professor	King Mongkut's University of Technology North Bangkok
2004 - Present	Director of The Waste Incineration Research Center	King Mongkut's University of Technology North Bangkok
2002- 2004	Head of Mechanical Engineering Department	King Mongkut's University of Technology North Bangkok

4. Honors and Awards

Year	Title	Remarks
2011	Best ASEAN Outstanding Engineering Achievement Award as an expert environmental and combustion engineer and his deep devotion to Waste Incinerator Research Center in recognition of an outstanding engineering project which have made significant contribution to the country's development, Federation of Engineering Organization	
2009	ASME George Westinghouse Silver Medal in the field of 'Researcher, engineer and educator in the design, development and applications of wastes and low grade fuels for clean energy conversation and power production, with emphasis on alternative energy	

II. Syllabus

1. Course Title & Criteria

Course Title	Biomass and Waste to Energy in Asia Mega City
Criteria	<input type="checkbox"/> Biology & Applied Biology
	<input 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

Analysis of Biomass and Waste to Energy in Asia Mega City (Japan, Korea, China, Taiwan, Singapore, Thailand, etc) in terms of biomass and waste characteristic, technology, economic, environmental impact, public perception

3. Required Textbook or papers: None

4. Final Outcome

Quiz	[V] Due date:
Research plan	[V] Due date:
Final Report	[x] Due date: January 2024
Research Article for APEC Youth Scientist Journal	[V] Due date: February 2024

5. Curriculum

Week	Topics and Activities	Assignments & Other Instructions
Week 1	Introduction to course	
Week 2	Biomass and Waste characteristic	
Week 3	Biomass and Waste to energy technology I	
Week 4	Biomass and Waste to energy technology II	
Week 5	Biomass and Waste to energy technology III	Biomass and Waste to energy in your country
Week 6	Economic Analysis	
Week 7	Environmental Impact	
Week 8	Case Study : I	
Week 9	Case Study : II	
Week 10	Case Study : III	Case study of Biomass and waste to energy in your country
Week 11	Final Report preparation I	
Week 12	Final Report preparation II	Final Report and Poster
Mentee should submit their research article to AMGS admin team and mentor.		