

## Program and Contents

<b>Opening Ceremony</b> Thursday 5th March 2009			
<b>08:00-</b>	<b>-</b>	<b>Registration</b>	<b>Phoenix 1-6</b>
<b>09:55-10:00</b>	<b>-</b>	<b>VCD "Go to WAESE 2009"</b>	
<b>10:00-10:05</b>	<b>-</b>	<b>Report of WAESE 2009</b> by Dr. Suchinda Chotipanich Permanent Secretary, Ministry of Science and Technology, Thailand.	
<b>10:05-10:20</b>	<b>-</b>	<b>Opening Address and Special Speech "Alternative Energy and Future of Thailand"</b> by H.E. Khunying Kalaya Sophonpanich Minister of Science and Technology, Thailand.	
<b>10:20-10:25</b>	<b>-</b>	<b>Award Presentation Ceremony to Outstanding Alternative Energy Science Leaders, Photographs</b> by H.E. Khunying Kalaya Sophonpanich Minister of Science and Technology, Thailand.	
<b>10:25-10:50</b>	<b>-</b>	<b>Keynote Lecture "Contribution of Science and Technology to Alternative Energy and Global Warming Problems"</b> by Prof. Dr. Michael Nobel Chairman, Nobel Charitable Trust, Sweden.	
<b>10:50-11:00</b>	<b>-</b>	<b>Opening Ceremony of Exhibition</b> by H.E. Khunying Kalaya Sophonpanich Minister of Science and Technology, Thailand.	
<b>12:00-13:00</b>	<b>-</b>	<b>Lunch Break</b>	

<b>Bio-Fuel Technology</b> 5-8 March 2009			
<b>13:20-15:00</b>		<b>Conference:</b> <b>Session A1: Bio-Fuel Technology : World Situations and developments (A)</b> <b>Chairpersons:</b> <b>Assoc. Prof. Dr. Kanit Wattanavichien, Chulalongkorn University,</b> <b>Dr. Prasert Ruebroycharoen, Chulalongkorn University.</b>	<b>Phoenix 1-2</b>
13:20-14:10	A-1	<b>Potentials and Opportunity of Green Fuels for Thailand</b> Mr. Thibodee Harnprasert Renewable Energy Institute of Thailand Foundation, Thailand.	1
14:10-15:00	A-2	<b>Development of New Synthetic Fuels in Japan</b> Prof. Dr. Kaoru Fujimoto The Kitakyushu University, Japan.	11
15:00-15:30		<b>Coffee Break</b>	
<b>15:30-18:00</b>		<b>Conference:</b> <b>Session A2: Bio-Fuel Technology : World Situations and developments (B)</b> <b>Chairpersons:</b> <b>Prof. Dr. Joseph M. Norbeck, University of California, USA.</b> <b>Asso. Prof. Dr. Tharapong Vitidsant, Chulalongkorn University, Thailand.</b>	<b>Phoenix 1-2</b>
15:30-16:20	A-3	<b>Present Status (Situation) of Alternative Fuels in Korea</b> Prof. Dr. Yong Kang Chungnam National University, South Korea.	16
16:20-17:10	A-4	<b>Situation of Biofuels in Spain : Present and Future</b> Prof. Dr. Rafael Luque Universidad de Cordoba, Campus de Rabanales, Edificio Marie Curie, Spain.	21
17:10-18:00	A-5	<b>Development of Biomass to Hydrogen Energy in Taiwan</b> Prof. Dr. Shu-Yii Wu Feng Chia University, Taiwan.	34

## Bio Fuel Techn

Friday 6th March 2009

<b>08:30-09:30</b>	<b>Conference:</b>		<b>Phoenix 1-2</b>
	<b>Session A3: Bio-Fuel Technology : Thermo-chemical processes</b>		
	<b>Chair Persons:</b>		
	<b>Dr. Prasert Ruebroycharoen, Chulalongkorn University</b>		
	<b>Asso. Prof. Dr. Kanit Wattanavichien, Chulalongkorn University.</b>		
<b>08:30-09:00</b>	<b>A-6</b>	<b>Catalytic Cracking of Waste Plastic and Used Vetegatable Oil to Liquid Fuel</b> Asso. Prof. Tharapong Vitidsant Dept, Chemical Technology, Fac. Science, Chulalongkorn University, Thailand.	<b>42</b>
<b>09:00-09:30</b>	<b>A-7</b>	<b>The Methane to Market Partnership in Livestock and Food Waste Processing Sector</b> Mr. Kurt Roos Team Leader,Agricultural Methane Programs,USA EPA	<b>49</b>
<b>09:30-10:00</b>	<b>Coffee Break</b>		
	<b>Conference:</b>		<b>Phoenix 1-2</b>
<b>10:00-12:15</b>	<b>Session A4 Bio-Fuel Technology : Biomass to Liquid (BTL) Technologies</b>		
	<b>Chair Persons:</b>		
	<b>Prof. Dr. Kaoru Fujimoto, Kitakyushu University, Japan</b>		
	<b>Assoc. Prof. Dr. Tharapong Vitidsant Chulalongkorn University.</b>		
<b>10:00-10:45</b>	<b>A-8</b>	<b>Advanced BTL Technology in Japan</b> Prof. Dr. Noritsatsu Tsubaki University of Toyama, Japan.	<b>50</b>
<b>10:45-11:30</b>	<b>A-9</b>	<b>Development of Biomass to Liquid Fuels in Korea</b> Prof. Dr. Sang Done Kim Korea Advanced Institute of Science and Technology (KAIST), Korea.	<b>57</b>
<b>11:30-12:15</b>	<b>A-10</b>	<b>Thermo-Chemical Production of Synthetic Transportation Fuels in Thailand Using Carbonaceous Wastes</b> Prof. Dr. Joseph M. Norbeck, Kamarat Jermsirisakpong and Chan S. Park University of California, Riverside, USA.	<b>63</b>
<b>12:15-13:15</b>	<b>Lunch Break</b>		
<b>13:15-15:15</b>	<b>Session A-5: Bio Fuel Technology</b>		<b>Phoenix 1-2</b>
	<b>Panel Discussion:</b>		
	<b>World Challenges and Opportunities for Bio Fuel</b>		
	<b>Moderators:</b>		
	<b>Assoc. Prof. Dr. Kanit Wattanavichien,</b>		
	<b>Assoc. Prof. Dr. Tharapong Vitidsant, Chulalongkorn Uhniversity, Thailand.</b>		
	Prof. Dr. Kaoru Fujimoto		
	Prof. Dr. Noritatsu Tsubaki		
	Prof. Dr. Sang Done Kim		
	Prof. Dr. Joseph M. Norbeck		
<b>15:15-15:45</b>	<b>Coffee Break</b>		
<b>15:45-18:00</b>	<b>Conference:</b>		<b>Phoenix 1-2</b>
	<b>Session A6: Bio-Fuel Technology -Commercial Opportunities-</b>		
	<b>Chair persons:</b>		
	<b>Dr. Iman K. Reksowardojo, ITB, Indonesia,</b>		
	<b>Assoc. Prof. Dr. Kanit Wattanavichien, Chulalongkorn University.</b>		
<b>15:45-16:30</b>	<b>A-11</b>	<b>Catalytic Depolymerization of Waste Material into Diesel Fuel</b> Mr.Kurt Schaedtrich, Mr. Gerhard Leypoldt Bangkok Munich Corporation Co., Ltd., Thailand.	<b>71</b>

<b>16:30-17:15</b>	<b>A-12</b>	<b>Japanese Clean Technology: Waste Heat Utilizing Generating System and Low-Temperature Magnetothermal Waste Disposal System</b>	<b>79</b>
		Mr. Isamu Sakaguchi Saramac Limited, Japan.	
<b>17:15-18:00</b>	<b>A-13</b>	<b>New Alternative Energy from Green Algae</b>	<b>82</b>
		Dr. Jumluck srinakruang Metchem Technology Co., Ltd., Thailand.	

## Bio-Fuel Technology

10-11 March 2009

08:30-09:50	<b>Conference:</b> <b>Session A7: Bio-Fuel Technology : R&amp;D in Bio-Fuel and Feedstocks</b> <b>Chair persons:</b> <b>Captain Dr. Smai Jai-In, Royal Thai Navy,</b> <b>Dr. Prasert Ruebroycharoen, Chulalongkorn University.</b>		<b>Phoenix 1</b>
08:30-09:10	A-14	<b>R&amp;D in Bio-fuel: -Challenges Toward the Future-</b> Ms. Peesamai Jenvanitpanjakul Deputy Governor R&D Thailand Institute of Scientific and Technological Research (TISTR), Thailand.	86
09:10-09:50	A-15	<b>Feasibility of Using Alternative Feedstocks for Bioethanol Production in Thailand</b> Hunsa Punnapayak Dept. Botany, Fac. Science, Chulalongkorn University, Thailand.	87
09:50-10:15	<b>Coffee Break</b>		
10:15-12:15	<b>Conference:</b> <b>Session A8: Bio-Fuel Technology : Bio-Diesel Plans and Applications</b> <b>Chair persons:</b> <b>Asso. Prof. Dr. Chinda Charoenphonphanich, KMITL, Thailand.</b>		<b>Phoenix 1</b>
10:15-10:55	A-16	<b>PTT R&amp;D Overview on Integrated Bio and Petroleum-Fuels and the Direction</b> Dr. Kunn Kangvansaichol Researcher, Research and Technology Institute, PTT PCL., Thailand.	93
10:55-11:35	A-17	<b>The Influence of Jatropha Curcas Linn.Oil (Crude; Degummed; Fatty Acid Methyl Ester) As a Fuel on a Direct Injection Diesel Engine</b> *Dr. Iman K. Reksowardojo, *Tirti P. Brodjonegoro, *Tatang H. Soerawidjaja, *W. Arismunandar, **Nguyen Ngoc Dung, **Rey Sopheak, ***Tran Quang Tuyen and ****Hideyuki Ogawa  *Institut Teknologi Bandung, Indonesia, **Kyoto University, Japan, ***Ho Chi Minh City University of Technology, Vietnam, ****Hokkaido University, Japan.	94
11:35-12:15	A-18	<b>Eco-Diesel: The Sustainable Diesel</b> Asso. Prof. Dr. Kanit Wattanavichien Fac. Engineering, Chulalongkorn University, Thailand.	95
12:15-13:15	<b>Lunch Break</b>		
13:15-15:45	<b>Conference:</b> <b>Session A9: Bio-Fuel Technology : Bio-Fuel in Transportation</b> <b>Chair person:</b> <b>Assoc. Prof. Dr. Kanit Wattanavichien, Chulalongkorn University</b>		<b>Phoenix 1</b>
13:15-13:55	A-19	<b>Biodiesel Development in Thailand</b> *Captain Dr. Samai Jai-In, **Sittha Sukkasi, **Piyarath Saosee and **Ukrit Sahapatsombut  *Royal Thai Naval Dockyard and Energy Expert, **Alternative Energy Research Cluster, MTEC, NSTDA, Thailand.	103
13:55-14:35	A-20	<b>Impacts of Using Gasohol E5 and E10 on Performance and Exhaust Emissions of in-used Motorcycle and Car in Vietnam</b> Dr. Le Anh Tuan, Pham Minh Tuan, Tran Quang Vinh, Nguyen The Luong and Nguyen Duy Vinh Hanoi University of Technology, Vietnam.	104
14:35-15:15	A-21	<b>E20 Fuel Impacts on Existing Vehicles in Thailand</b> Asso. Prof. Dr. Chinda Charoenphonphanich Dept. of Mechanical Engineering, Fac. Eng., King Mongkut's Institute of Technology Ladkrabang, Thailand.	110

15:15-15:45		<b>Coffee Break</b>	
15:45-18:00		<b>Conference:</b> <b>Session A10: Bio-Fuel Technology : Bio-gas Technologies</b> <b>Chair person:</b> <b>Mr Apirux Wannasatop</b>	<b>Phoenix 1</b>
15:45-16:30	A-22	<b>Biogas Technology: Opportunity and Market Development in Thailand</b> Mr. Daniel Gaefke Annex Power Ltd., Thailand	119
16:30-17:15	A-23	Effect of COD Loading Rate on COD Removal Efficiency and Biogas Production from Distillery Slop Wastewater by Anaerobic Baffled Reactor Asso. Prof. Dr. Orathai Chavanparit and Chutima Chanparakorn Dept. Environmental Engineering, Fac. Eng. ,Chulalongkorn University, Thailand.	136
17:15-18:00	A-24	<b>Bio-Gas Production from Biomass and Municipal Waste</b> Asso. Prof. Dr. Tharapong Vitidsant and Tacha Buntachai Dept. Chemical Technology, Fac. Science, Chulalongkorn University, Thailand.	
08:30-09:50		<b>Conference:</b> <b>Session A11: Bio-Fuel Technology : Bio-diesel Technologies</b> <b>Chair person:</b> <b>Dr. Anawat Ketcong, Chulalongkorn University.</b>	<b>Phoenix 2</b>
08:30-09:10	A-25	<b>Ca, Mg and Zn Mixed Oxides as Heterogeneous Base Catalysts for Transesterification of Vegetable Oils</b> Sasipim Limmanee and Assist. Prof. Dr. Chawalit Ngamcharussrivichai Fac. Science, Chulalongkorn University, Thailand.	140
09:10-09:50	A-26	<b>Effect of Co-Solvents on Production of Biodiesel via Transesterification in Supercritical Methanol</b> Asso. Prof. Dr. Somkiat Ngamprasertsith Dept. of Chemical Technology, Fac. of Science, Chulalongkorn University, Thailand.	
09:50-10:15		<b>Coffee Break</b>	
10:15-12:15		<b>Conference:</b> <b>Session A12: Bio-Fuel Technology : Bio-Ethanol Feedstocks and Technologies</b> <b>Chair person:</b> <b>Mr Apirux Wannasatop</b>	<b>Phoenix 2</b>
10:35-11:15	A-27	<b>Ethanol Production form Starch Feedstock in Thai Industries</b> Dr. Wichaphat Liamsakul Production Development, T.P.K. Ethanol Co., Ltd., Thailand.	141
10:55-11:35	A-28	<b>Using Sugarcane as a Feedstock for Bio Energy</b> Dr. Preecha Prammanee Senior Researcher, Mitr Phol Sugar Corp., Ltd., Thailand.	142
11:35-12:15	A-29	<b>Future of Thailand Ethanol -Industrial Point of Views</b> Mr. Prawit Prakitsri Petro Green Co., Ltd., Thailand.	
12:15-13:15		<b>Lunch Break</b>	
13:15-15:15		<b>Conference:</b> <b>Session A13: Bio-Fuel Technology : Solid Fuels Technologies from Biomass</b> <b>Chair person:</b> <b>Dr. Pattaraporn Chalprasert, Chulalongkorn University</b>	<b>Phoenix 2</b>
13:15-13:55	A-30	<b>Pyrolysis Process Induced by Microwave for Biofuel Production</b> Dussadee Bundit, Patranit Rassameedara, Prapan Koocholtara, Kunakorn Phochinda and Napida Hinchiranan Dept. Chemical Technology, Fac. Science, Chulalongkorn University, Thailand.	153

13:35-14:05	A-31	<b>Production of Solid Fuel from Palm Waste Mixed with Crude Glycerol</b> *Gunlaya Panyaanurakkij, *Weerawan Kitichaiwat and **Prapan Kuchonthara and **Asso. Prof. Dr. Somkiat Ngamprasertsith  *Dept. Chemical Technology, Fac. Science, Chulalongkorn University, **Center of Excellence for Petroleum, Petrochemicals and Advanced Materials, Chulalongkorn University, Thailand.	154
14:35-15:15	A-32	<b>Technology and Production of Commercial Biomass Briquette Charcoal in Thailand</b> Mr. Jirawat Chanvidhwatanakit Maeklong Compressed Charcoal ( Thailand ) Group Networks, Thailand.	159
15:15-15:35		<b>Coffee Break</b>	
15:35-17:35		<b>Conference:</b> <b>Session A14: Bio-Fuel Technology : Gasification Technologies</b> <b>Chair person:</b> <b>Dr. Napida Hinchiranan, Chulalongkorn University.</b>	
15:35-16:05	A-33	<b>Biomass Gasification in Thailand : Technology Status and Challenges</b> Assist. Prof. Dr. Suneerat Pipatmanomai The Joint Graduate School of Energy and Environment (JGSEE), King Mongkut's University of Technology Thonburi (KMUTT) , Thailand.	160
16:05-16:35	A-34	<b>Syngas Production from Gasification of Palm Oil Empty Fruit Bunches</b> Supachita Krerkkaiwan and Prapan Kuchontara Chulalongkorn University, Thailand.	161
16:35-17:05	A-35	<b>Simultaneous Gasification and Reforming of Biomass on Ni/Dolomite in Fluidized</b> Dr. Anawat Ketcong Dept. Chemical Technology, Fac. Science, Chulalongkorn University, Thailand.	162
17:05-17:35	A-36	<b>Effects of Promoters on Biomass Gasification Using Nickel/Dolomite Catalyst</b> Dr. Pattaraporn Chaiprasert and Tharapong Vitidsant Dept. Chemical Technology, Fac. Science, Chulalongkorn University, Thailand.	171

		<b>Technology</b>	
		Sunday 7th March 2009	
<b>09:00-12:00</b>		<b>Business Forum: Session A15: Bio-Fuel Technology : Business Forum Chair person: Mr Bandit Surintaraseree, ING Fund, Thailand</b>	<b>Phoenix 1</b>
<b>09:00-10:30</b>	<b>A-37</b>	<b>Biogas Technology: Opportunity and Market Development in Thailand</b> Mr. Daniel Gaefke Annex Power Ltd., Thailand.	
<b>09:00-10:30</b>	<b>A-38</b>	<b>From Waste Diesel: Catalytic Depolymerization Process (KDV)</b> Mr. Kurt Schaedtrich and Mr. Gerhard Leypoldt Manarch Technology Co., Ltd., Thailand.	



13:00-18:00	<b>Conference:</b> <b>Session B1: Solar Energy</b> <b>Chair Persons:</b> <b>Asso. Prof. Dr. Wattanapong Rakwichian, Naresuan University, Thailand,</b> <b>Prof. Dr. Dusit Kruangam, Ekarat-Solar, Thailand.</b>		Phoenix 3-4
13:00-13:40	B-1	<b>Development of Solar Photovoltaics: Past-Present-Future</b> Prof. Dr. Martin Green University of New South Wales (UNSW), Australia.	178
13:40-14:20	B-2	<b>Alternate Energy for Resilience of Electricity Supply and Energy Security</b> Prof. Dr. Saifur Rahman Advanced Research Institute, Virginia Polytechnic Institute and State University, USA.	179
14:20-15:00	B-3	<b>Challenges on New Technologies for Sustainable Energy System -Climate Change Policy Measures in Japan-</b> Prof. Dr. Morihiro Kurushima Toyo University and Representative from New Energy and Industrial Technology Development Organization (NEDO), Japan.	184
15:00-15:30	<b>Coffee Break</b>		
15:30-16:00	B-4	<b>Energy, Engineering and Environment Technology for Agricultural Systems in Thailand: Personal Perspectives for Rural Development</b> Dr. Krissanapong Kirtikara King Mongkut University of Technology Thonburi, Thailand.	
16:00-16:30	B-5	<b>Solar Energy Potentials of Southeast Asia</b> <b>Assoc. Prof. Dr. Serm Janjai</b> Fac. Science, Silpakorn University, Thailand.	190
16:00-16:30	B-6	<b>Current Status of R&amp;D on Solar Energy in Thailand</b> Asso Prof. Dr. Wattanapong Rakwichian School of Renewable Energy Technology, Naresuan University, Thailand.	
16:30-17:00	B-7	<b>Recent R&amp;D on Solar Energy at NSTDA, Thailand</b> Dr. Kobsak Sriprapha Institute of Solar Energy Technology Development (Solartec) National Science and Technology Development Agency (NSTDA), Thailand.	198
17:00-17:30	B-8	<b>Solar PV Power Plants in Thailand.</b> Dr. Thawatchai Suwannakum King Mongkut's University of Technology Thonburi, Thailand.	
17:30-18:00	B-9	<b>Building Integrattion of Solar Technology: 10 Years of Experince at Solar Amphitheatre from Targoviste</b> Prof. Dr. Nicolae Olariu Valahia University, Targoviste, Romania.	

<b>09:00-12:00</b>		<b>Business Forum: Session B2: Solar Energy Chair Persons: Asso. Prof. Dr. Wattanapong Rakwichian, Naresuan University, Thailand. Dr. Prapita Thanarak, Naresuan University, Thailand.</b>	<b>Phoenix 3</b>
<b>09:00-09:30</b>	<b>B-10</b>	<b>First Crystalline Silicon Solar Cell Production in Thailand by Ekarat Solar and Application Systems</b> Prof. Dr. Dusit Kruangam Ekarat Solar Co., Ltd., Thailand.	<b>203</b>
<b>09:30-10:00</b>	<b>B-11</b>	<b>Megawatt Solar Farm Projects Using Sun Tracking System in Thailand</b> Mr. Winai Naknam, Mr. Nattawat Jirawatkunarak, Mr. Supatpong Sikkhabandit, Mr. Sommart Sri, Mr. Phanu Mongholwerapun, Mr. Sakchai Krungsrimaung, Mr. Pansak Amaranawatana and Mr. Sathid Duangpim Renewable Energy Development Department Electricity Generating Authority of Thailand (EGAT), Thailand.	<b>209</b>
<b>10:00-10:30</b>	<b>Coffee Break</b>		
<b>10:30-11:00</b>	<b>B-12</b>	<b>120 kW and 200 kW PV-Diesel Generator Hybrid Systems in South East Asia</b> Dr. Wuthipong Suponthana Leonics Co., Ltd., Thailand.	<b>214</b>
<b>11:00-11:30</b>	<b>B-13</b>	<b>Residential and Industrial Photovoltaic for On - and-Off Grid Applications, Technology and Projects.</b> Mr. Oussama Chehab SMA Solar Technology AG, Germany.	<b>224</b>
<b>11:30-12:00</b>	<b>B-14</b>	<b>Development of Solar Energy Technologies and Products of Schott Solar AG</b> Mr. Horst Kruse SCHOTT Solar AG, Germany.	<b>250</b>
<b>12:00-13:00</b>	<b>Lunch Break</b>		
<b>13:00-16:30</b>		<b>Business Forum: Session B3: Solar Energy &amp; Eco-House Chair Persons: Asso. Prof. Dr. Serm Janjai, Silpakorn University, Thailand. Dr. Thawatchai Sunnakum, KMUTT, Thailand.</b>	<b>Phoenix 3</b>
<b>13:00-13:30</b>	<b>B-15</b>	<b>Moving Towards Low-Cost Thin-film Silicon Technology</b> Mr. Nibondh Chetsiri Regional Director -Asia Opreations, NanoPV Technologies LLC, .USA.	<b>251</b>
<b>13:30-14:00</b>	<b>B-16</b>	<b>Novel Solar Electricity by SES Stirling Energy Technology</b> Mr. David Slawson and Mr. Sommai Kornsakoo D&J Dish Stirling Energy Co., Ltd., Thailand.	
<b>14:00-14:30</b>	<b>B-17</b>	<b>Solar Thermal Utilization in Thailand</b> Mr. Somsak Chutanan President, Solar Thermal Association, Thailand.	<b>257</b>
<b>14:30-15:00</b>	<b>B-18</b>	<b>Energy Efficient Buildings in the Tropics The First Step Towards a Sustainable Energy System</b> Mr. Poul Erik Kristensen IEN Consultants Sdn Bhd, Malaysia.	<b>267</b>
<b>15:00-15:30</b>	<b>Coffee Break</b>		

<b>15:30-16:00</b>	<b>B-19</b>	<b>A New Paradigm Shift Design for Global Warming Solution</b>	<b>281</b>
		Asso. Prof. Dr. Vorasun Buranakarn Chulalongkorn University, Thailand.	
<b>16:00-16:30</b>	<b>B-20</b>	<b>Eco- House : A New Sufficient Technology for Sustainable Solution</b>	<b>298</b>
		Prof. Dr. Soontorn Boonyatikarn Faculty of Architecture, Chulalongkorn University, Thailand.	

		<b>Wind Energy</b>	
		<b>Thursday 5th March</b>	
<b>13:00-18:00</b>		<b>Conference:</b> <b>Session C1: Wind Energy</b> <b>Chair Persons:</b> <b>Assist. Prof. Dr. Wirachai Roynarin, RMUTT, Thailand,</b> <b>Dr. Jakree Srinonchat, RMUTT, Thailand.</b>	<b>Phoenix 5-6</b>
<b>13:00-13:30</b>	<b>C-1</b>	<b>15 Years Alternative Energy Plan of Thailand</b> Mr. Boonthong Ungtrakul Department of Alternative Energy and Efficiency (DEDE), Ministry of Energy, Thailand. Thailand.	<b>306</b>
<b>13:30-14:00</b>	<b>C-2</b>	<b>Potentials of Wind Energy in Thailand</b> Mr. Boonthong Ungtrakul Director, Wind Energy Group, Bureau of Energy Research, Department of Alternative Energy and Efficiency (DEDE), Ministry of Energy, Thailand.	<b>308</b>
<b>14:00-14:30</b>	<b>C-3</b>	<b>Design and Investigation of 50 kW Wind Turbines for Low Wind Speed Zone</b> Assist. Prof. Dr. Wirachai Roynarin Faculty of Eng., Rajamangala University of Technology Thanyaburi (RMUTT), Thailand.	<b>310</b>
<b>14:30-15:00</b>	<b>C-4</b>	<b>Wind Turbine Flow Simulation: The (In) Accuracy of CFD and Its Usefulness</b> Asso. Prof. Dr. Tawit Chitsomboon School of Mechanical Engineering, Suranaree University of Technology, Thailand.	<b>317</b>
<b>15:00-15:30</b>		<b>Coffee Break</b>	
<b>15:30-16:00</b>	<b>C-5</b>	<b>Wind Project Development in Thailand.</b> Dr-Ing. Jiratkwinn Rakwichian Ensole Co., Ltd., Thailand.	<b>318</b>
<b>16:00-16:30</b>	<b>C-6</b>	<b>Installation of Magawatt Wind Systems in Thailand</b> Mr. Nattawat Jirawatkunarak, Mr. Somchai Wongpornpakdee, Mr. Vichai Limpswasde and Mr. Supatpong Sikkhabandit  Renewable Energy Development Department, Electricity Generating Authority of Thailand (EGAT), Thailand.	<b>319</b>
<b>16:30-17:00</b>	<b>C-7</b>	<b>Comparison of Wind Energy in EU and Asia (Tentative)</b> Asso. Prof. Dr. Ken P S Leung Northumbria University at Newcastle, UK.	
<b>17:00-17:30</b>	<b>C-8</b>	<b>Control Techniques for Maximum Peak Power Tracking of Wind Turbine Systems</b> Assis. Prof. Dr. Bunlung Neammanee King Mongkut's University of Technology North Bangkok, Thailand.	<b>325</b>
<b>17:30-18:00</b>	<b>C-9</b>	<b>Development of Japanese Model Wind Turbine System</b> Dr. Masao Hosomi and Dr. Emi Komai Komai Tekko Inc., Japan.	<b>338</b>

## Wind Energy

Friday 6th March 2009

12:00		<b>Business Forum:</b> <b>Session C2: Wind Energy</b> <b>Chair Persons:</b> <b>Dr. Jakree Srinonchat, RMUTT, Thailand.</b> <b>Assist. Prof. Dr. Wirachai Roynarin, RMUTT, Thailand.</b>	<b>Phoenix 5</b>
09:00-09:30	C-10	<b>Research Centre of Wind Water and Solar Renewable Energy</b> Assis. Prof. Dr. Wirachai Roynarin Fac. Eng., Rajamangala University of Technology Thanyaburi (RMUTT), Thailand.	341
09:30-10:00	C-11	<b>Integrated Framework for Developing CDM Projects</b> Mr. Magnus Staudte Envima (Thailand) Co.,Ltd., Thailand.	351
10:00-10:30		<b>Coffee Break</b>	
10:30-11:00	C-12	<b>Horizontal Axis Wind Turbine for Low Wind Speed</b> Mr. Nontavut Prechavut, Asso. Prof. Dr. Udomkiat Nontakaew and Mr. Boonchai Watjatrakul King Mongkut's University of Technology North Bangkok (KMUTNB), Thailand.	358
11:00-11:30	C-13	<b>Controller and Inverter Design for the Wind + Solar Hybrid Systems</b> Mr. Pranai Kangwanrat Power Solution Technology Co.Ltd., Thailand.	
11:30-12:00	C-14	<b>Small Wind Evolution and Technology Developments for Thailand and Low Wind Regimes</b> Mr. Frank Greco Southwest Windpower, Inc., USA.	359
13:00-17:00		<b>Business Forum:</b> <b>Session C3: Wind Energy</b> <b>Chair Persons:</b> <b>Asso. Prof. Dr. Warunee Ariyawiriyannun, RMUTT, Thailand,</b> <b>Assist. Prof. Dr. Wirachai Roynarin, RMUTT, Thailand.</b>	<b>Phoenix 5</b>
13:00-13:30	C-15	<b>The Co-Operative Magawat Scale Wind Turbine</b> Mr. Toshi Togo Thai Renewable Energy Co., Ltd., Thailand.	
13:30-14:00	C-16	<b>Large Scale Wind Turbine Development by Nordex</b> Mr. Jan Eike Graeff Nordex Beijing, China. (on behalf of co-operation of Nordex, Festo Thailand, SCI Thailand)	392
14:00-14:30	C-17	<b>High Efficiency Motors</b> Ms. Napalai Sansom and Mr. Thawatchai Wijitjamari ABB Ltd., Thailand.	395
14:30-15:00	C-18	<b>Wind Turbine Technology and Applications</b> Dr. Boonyang Plangklang Reserch Center of Renewable Energy, Rajamangala University of Technology Thanyaburi (RMUTT), Thailand.	405
15:00-15:30		<b>Coffee Break</b>	
15:30-16:00	C-19	<b>GEM Power, Your Local Wind Energy Experts</b> Mr. Nicholas Knight GEM Global Energy Management Co.,Ltd., Thailand.	406

		<b>Nuclear Energy</b> Friday, 5th March 2009	
<b>09:00-12:00</b>		<b>Conference:</b> <b>Session D1: Nuclear Technology</b> <b>Chair Person: Dr. Manoon Aramrattana, Former Secretary-General, Office of Atoms for Peace, Thailand.</b>	<b>Phoenix 4</b>
<b>09:00-09:30</b>	<b>D-1</b>	<b>Nuclear Power Plant Option for Thailand</b> Dr. Kamol Takabut Assistant Governor-Power Plant Engineering, EGAT, Thailand.	<b>422</b>
<b>09:30-10:00</b>	<b>D-2</b>	<b>Nuclear Safety for Nuclear Power Plant</b> Ms. Warapon Wanitsuksombut Deputy Secretary-General, Office of Atoms for Peace, Thailand.	<b>428</b>
<b>10:00-10:30</b>		<b>Coffee Break</b>	
<b>10:30-11:00</b>	<b>D-3</b>	<b>R &amp; D on Nuclear Technology and Applications in Thailand</b> Dr. Somporn Chongkum Executive Director, Thailand Institute of Nuclear Technology (Public Organization), Thailand.	<b>431</b>
<b>11:00-11:30</b>	<b>D-4</b>	<b>Human Resource Development, Preparation for Thai Nuclear Power Plants</b> Asso. Prof. Dr. Sunchai Nilsuwankosit Dept. Nuclear Technology, Fac. Eng. Chulalongkorn University, Thailand.	<b>435</b>

		<b>Waste Energy</b> Friday 05 March 2009	
<b>08:00</b>		<b>Business Forum:</b> <b>Session E1: Waste Energy</b> <b>Chair Persons:</b> <b>Asso. Prof. Chart Chiemchaisri, Kasetsart University, Thailand,</b> <b>Mr. Pichai Tinsuntisuk, Royal Equipment Co., Ltd., Thailand.</b>	<b>Phoenix 6</b>
<b>09:00-09:30</b>	<b>E-1</b>	<b>Sustainable Landfilling and Energy Recovery, Calgary Biocell Approach</b> Prof. J.Patrick A. Hettiaratchi Center for Environmental Engineering Research and Education, University of Calgary, Canada.	<b>439</b>
<b>09:30-10:00</b>	<b>E-2</b>	<b>Alternative Fuels and Co-Processing</b> Mr. Dieter Brulez and Mr. Josef Trankler Indonesian-German Climate Change Programme, German Technical Cooperation (GTZ), Germany.	<b>440</b>
<b>10:00-10:30</b>		<b>Coffee Break</b>	
<b>10:30-11:30</b>	<b>E-3</b>	<b>Incineration Technology for Municipal Solid Wastes in China and Incineration Ashes' Disposal</b> Prof. Dezhen Chen, Gongming Zhou, Zhenzhen Guan and Tong Zhu Tongji University, Shanghai, PR China.	<b>446</b>
<b>11:30-12:00</b>	<b>E-4</b>	<b>Anaerobic Digestion of Municipal Solid Waste for Energy Recovery</b> Prof. C. Visvanathan School of Environment, Resources and Development, Asain Institute of Technology, Thailand.	
<b>12:00-13:00</b>		<b>Lunch Break</b>	
<b>13:00-17:00</b>		<b>Business Forum:</b> <b>Session E2: Waste Energy</b> <b>Chair Persons:</b> <b>Asso. Prof. Dr. Chart Chiemchaisri, Kasetsart University, Thailand,</b> <b>Asso. Prof. Kiatkrai Ayuwat, Kasetsart University, Thailand.</b>	<b>Phoenix 6</b>
<b>13:00-13:30</b>	<b>E-5</b>	<b>Life Cycle Assessment of Waste to Energy Project: Phuket Incinerator Case Study</b>  Dr. Shabbir H. Gheewala The Joint Graduate School of Energy and Environment, King Mongkut's University of	<b>461</b>
<b>13:30-14:00</b>	<b>E-6</b>	<b>Recovery of Solid Wastes from Dumpsite for Energy Recovery as Refused Derived Fuel</b>  *Asso. Prof. Dr. Chart Chiemchaisri, *Boonya Charnok and **Professor Chettiyappan *Kasetsart University, **Asian Institute of Technology, Thailand.	<b>467</b>
<b>14:00-14:30</b>	<b>E-7</b>	<b>Current Status of Generation of Electricity from Waste</b> Asso. Prof. Dr. Sombat Teekasap Eastern Asia University, Thailand.	
<b>14:30-15:00</b>	<b>E-8</b>	<b>Development and Operation of Full-Scale Anaerobic Digester for Municipal Solid Waste at Rayong Municipality</b> Mr. Pireeyutma Vanapruk Development of Environment and Energy Foundation, Thailand.	<b>468</b>
<b>15:00-15:30</b>		<b>Coffee Break</b>	
<b>15:30-16:00</b>	<b>E-9</b>	<b>Sustainable Municipal Solid Waste Management Technology</b>  *Assist. Prof. Boonma Panpradist, *Mr. Wachira Klubchum and **Mr. Paiboon Khoomkum  *Kasetsart University, **Thai Paiboon Equipment Ltd., Thailand.	<b>471</b>

<b>16:00-16:30</b>	<b>E-10</b>	<b>Transforming Wastes into Energy through "Co-Processing"</b> Mr. Rerngchai Inkapakorn Geocycle Business Unit, Siam City Cement Public Company Limited, Thailand.	<b>483</b>
<b>16:30-17:00</b>	<b>E-11</b>	<b>Benefits of Waste Recovery in the Cement Industry</b> Dr. Kare Helge Karhtensen SINTEF, The Foundation of Science and Industrial Research, Norway, and AIT, Thailand.	<b>491</b>
<b>17:00-17:30</b>	<b>E-12</b>	<b>Mitigating Partner Risk : Challenges in Biogas and Biomass Investments</b> Mr. Austin Arensberg Prime Energy Development, Thailand.	<b>532</b>



## Hydrogen Technology, Fuel Cells and Batteries

Friday 6th March 2009

<b>13:00-17:00</b>		<b>Conference:</b> <b>Session F1: Hydrogen Technology, Fuel Cells and Batteries</b> <b>Chair Persons:</b> <b>Dr. Waret Veerasai, Mahidol University, Thailand.</b> <b>Dr. Min Medhisuwakul, Chiangmai University, Thailand.</b>	<b>Phoenix 4</b>
<b>13:00-13:30</b>	<b>F-1</b>	<b>Fuel Cell R&amp;D Status at MTEC, Thailand</b> Dr. Pavadee Aungkavattana National Metal and Materials Technology Center (MTEC), National Science and Technology Development Agency ( NSTDA), Thailand.	<b>536</b>
<b>13:30-14:00</b>	<b>F-2</b>	<b>Hydrogen Fuel Cell Research at Chiangmai University</b> Dr. Min Medhisuwakul Fac. Science, Chiangmai University, Thailand.	<b>542</b>
<b>14:00-14:30</b>	<b>F-3</b>	<b>Redox Flow Batteries: Progress &amp; Challenges in the Development of Flow Battery Technology</b> Prof. Frank C. Walsh University of Southamton, UK.	<b>551</b>
<b>14:30-15:00</b>	<b>F-4</b>	<b>Vanadium Regenerative Fuel Cell Development</b> Mr. Krisada Kampanatsanyakorn Cellennium (Thailand) Co., Ltd., Thailand.	<b>552</b>
<b>15:00-15:30</b>		<b>Coffee Break</b>	
<b>15:30-16:00</b>	<b>F-5</b>	<b>R &amp; D on Lithium-ion Battery Technology: A Review</b> Dr. Pimpa Limthonkul National Metal and Materials Technology Center (MTEC), National Science and Technology Agency (NSTDA), Thailand.	<b>559</b>
<b>16:00-16:30</b>	<b>F-6</b>	<b>Zero Emission Electric Vehicle Development</b> Asso. Prof. Dr. Werachet Khan-ngern King Mongkut's Institute of Technology Ladkrabang, Thailand.	<b>565</b>
<b>16:30-17:00</b>	<b>F-7</b>	<b>Highlights on Chemo-electricity: Integrated Science for Alternative Energy</b> Dr. Waret Veerasai IFEC-MU, Chemistry Department of Chemistry, Mahidol University, Thailand.	<b>566</b>

		<b>Automobile in the Future (in Thai Language)</b>	
		Friday 7th March 2009	
<b>10:00-12:00</b>		<b>Conference:</b> <b>Session G1: Automobile in the Future (in Thai Language)</b> <b>Chair person:</b>	<b>Phoenix 3</b>
<b>10:00-10:30</b>	<b>G-2</b>	<b>Wireless Power Transmission System for Future Electric Cars and Consumers</b> Asso. Prof. Dr. Werachet Khan-ngern King Mongkut's Institute of Technology Ladkrabang, Thailand.	<b>572</b>
<b>10:30-11:00</b>	<b>G-1</b>	<b>Promotion Programs of Biofuel for Automobile in Thailand (tentative)</b> Dr. Panich Pongpirodom (Tentative) Department of Alternative Energy and Efficiency (DEDE), Ministry of Energy, Thailand.	
<b>11:00-11:30</b>	<b>G-3</b>	<b>Ford Automobile in the Future and Alternative Energy (tentative)</b> Representatives Ford, Thailand.	

		<b>Alternative Energy in the Future for Thailand (In Thai Language)</b>	
		Sunday, 5 March 2009	
<b>09:00-12:30</b>		<b>Business Forum: (In Thai Language)</b> <b>Session H1: Alternative Energy in the Future for Thailand</b> <b>Chair person:</b> <b>Dr. Teerapatr Srinorakutara,</b> <b>Thailand Institute of Scientific and Technological Research (TISTR), Thailand.</b> <b>Captain Dr. Samai Jai-in</b> <b>Engineering Development Dept., Royal Thai Navy, Thailand.</b>	<b>Phoenix 3-6</b>
<b>10:00-10:30</b>	<b>H-1</b>	<b>Development Biogas Technology in Thailand</b> Prof. Dr. Morakot Tanticharoen Biotechnology Center (BIOTEC), National Science and Technology Agency (NSTDA), Thailand.	<b>573</b>
<b>10:30-11:00</b>	<b>H-2</b>	<b>Bio Diesel Energy</b> Captain Dr. Samai Jai-in Engineering Development Dept., Royal Thai Navy, Thailand.	
<b>11:00-11:30</b>	<b>H-3</b>	<b>A Success of Renewable Energy Biomass Power Plant (Rice Husk)</b> M.L. Chanaphun Kridakorn A.T. Biopower Co., Ltd., Thailand.	<b>574</b>
<b>11:30-12:00</b>	<b>H-4</b>	<b>Development of Ethanol &amp; Gasohol Energy in Thailand</b> Dr. Teerapatr Srinorakutara Thailand Institute of Scientific and Technological Research (TISTR), Thailand.	
<b>12:00-12:30</b>	<b>H-5</b>	<b>Mircro Hydro Turbine Generator</b> Mr. Saroj Nukprach Water Transmission and Distribution System, The Metropolitan Waterworks Authority (MWA), Thailand.	

## World Alternative Energy Science for Green Cities

Friday 6th March 2009

<b>10:00-12:00</b>		<b>Symposium:</b>		<b>Grand Ballroom</b>
		<b>Session S1: World Alternative Sciences for Green Cities</b>		<b>Diamond Hall 9</b>
		<b>Chairpersons:</b>		
		<b>Prof. Dr. Soontorn Boonyatikarn, Chulalongkorn University, Thailand,</b>		
		<b>Asso. Prof. Dr. Vorasun Buranakarn, Chulalongkorn University, Thailand.</b>		
<b>10:00-11:00</b>	<b>S-1</b>	<b>The Challenge of Building Sustainable Cities</b>		
		Mayor Jeremy Harris Ret.		
		Sustainable Cities Institute, USA.		
<b>11:00-11:30</b>	<b>S-2</b>	<b>How can Science and Technology Contribute to Green Cities?</b>		
		Prof. Dr. Michael Nobel		
		Chairman, Nobel Charitable Trust, Sweden.		
<b>11:00-12:00</b>	<b>S-3</b>	<b>Sustainable Consumptions and Products</b>		
		Dr. Mario Tabucanon		
		United Nations University, Japan, and AIT, Bangkok, Thailand.		
<b>12:00-13:00</b>		<b>Lunch Break</b>		
<b>13:00-14:30</b>		<b>Symposium:</b>		<b>Grand Ballroom</b>
		<b>Session S2: World Alternative Sciences for Green Cities</b>		<b>Diamond Hall 9</b>
		<b>Chairpersons:</b>		
		<b>Prof. Dr. Soontorn Boonyatikarn, Chulalongkorn University, Thailand,</b>		
		<b>Asso. Prof. Dr. Vorasun Buranakarn, Chulalongkorn University, Thailand.</b>		
<b>13:00-13:30</b>	<b>S-4</b>	<b>The Trang Municipality Green City Potentials</b>		
		Mayer Chalee Kang-Im		
		Trang Municipality, Thailand.		
<b>13:30-14:00</b>	<b>S-5</b>	<b>The Pataya Green City Potentials</b>		
		Dr. Piratpong		
		Pataya City, Thailand.		
<b>14:00-14:30</b>	<b>S-6</b>	<b>The Rayong Clean and Green City</b>		
		Mr. Worawit Supachokchai		
		Rayong Municipality, Thailand.		