

# THE 8TH INTERNATIONAL SYMPOSIUM ON SOUTHEAST ASIAN WATER ENVIRONMENT

## ORGANIZED BY

DEPARTMENT OF CIVIL ENGINEERING, FACULTY OF ENGINEERING, PRINCE OF SONGKLA UNIVERSITY (PSU)

RESEARCH CENTER FOR WATER ENVIRONMENT TECHNOLOGY (RECWET)

SOUTHEAST ASIAN CENTER FOR WATER ENVIRONMENT TECHNOLOGY (SACWET)

## CO-ORGANIZED BY

INTERNATIONAL RESEARCH CENTRE FOR RIVER BASIN ENVIRONMENT (ICRE)

GLOBAL COE PROGRAM AT UNIVERSITY OF YAMANASHI (UY)

ASIAN PROGRAM FOR INCUBATION OF ENVIRONMENTAL LEADERS (APIEL)

RESEARCH AND DEVELOPMENT FOR WATER REUSE TECHNOLOGY IN TROPICAL REGIONS (WATER-INTRO)

## SUPPORTED BY

JAPAN SCIENCE AND TECHNOLOGY AGENCY (JST)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY (MEXT)



## PROGRAM

# THE 8TH INTERNATIONAL SYMPOSIUM ON SOUTHEAST ASIAN WATER ENVIRONMENT

24-26 OCTOBER, 2010

PHUKET GRACELAND RESORT & SPA,  
THAILAND

[HTTP://WWW.RECWET.T.U-TOKYO.AC.JP/ASIAN\\_WATER2010/](http://www.recwet.t.u-tokyo.ac.jp/asian_water2010/)



Day 1 <October 24, 2010 (Sunday)>

Excursion (8:00) / Registration/Welcome Reception (18:00)

Day 2 <October 25, 2010 (Monday)>

8:30 - 10:00	<b>Opening Ceremony</b> <b>Welcome remarks</b> <b>Keynote Speech</b> <i>Next-generation technology for water and wastewater treatment with membrane</i> Prof Kazuo Yamamoto, Environmental Science Center, University of Tokyo <b>Water management in Patong municipality: Before and AfterTsunami</b> Mr. Chairat Sukabal, Deputy Mayor of Patong municipality		
10:00 - 10:30	Coffee Break		
	<b>Room A</b>	<b>Room B</b>	<b>Room C</b>
<b>Parallel Session 1</b>  10:30 -12:00	<b>A1: Watershed Research</b> Chair : Dr. Kei Nishida & Dr. Saeid Eslamian A1-1 Tran Van Ty A1-2 G. H. A. C. Silva A1-3 Suharyanto	<b>B1: Water Environmental Issues and Sustainability (Supported by APIEL)</b> Chair : Dr. Kyoung-Jin An & Dr. Gyu Tae Seo B1-1 Vishnu P. Pandey B1-2 T. Akiyama B1-3 Priana Sudjono	<b>C1: Membrane Process (Supported by Water-InTro)</b> Chair : Dr. Chart Chiemchaisri & Dr. Adeline Seak May Chua C1-1 Amila Abeynayaka C1-2 W. Banchapattanasakda C1-3 Toru Watanabe
12:00 - 13:00	Lunch		
<b>Parallel Session 2</b>  13:00 - 15:00	<b>A2: Groundwater Issues</b> Chair : Prof. Satoshi Takizawa & Thammarat Koottatep A2-1 AL. Ramanathan A2-2 Aksara Putthividhya A2-3 T. Nakamura A2-4 Ganesh C. Saha	<b>B2: Socio-economical Issues (Supported by APIEL)</b> Chair : Dr. T. Aramaki & Dr. T. Akiyama B2-1 Kamal Dahanayake B2-2 Nawa Raj Khatiwada B2-3 Pongsak Suttinon B2-4 S.M. A. Islam	<b>C2: Water-InTro Workshop - I</b> Research and Development for Water Reuse Technology in Tropical Regions: Strategy and Technology to Provide Sustainable Water Resources for All
15:00 - 15:30	Coffee Break		
<b>Parallel Session 3</b>  15:30 -17:00	<b>A3: Sediment and Erosion</b> Chair : Dr. H. Ishidaira and Dr. N Raj Khatiwada A3-1 A. Bennui A3-2 Kazuhiro Kakizawa A3-3 S. K. Chaerun	<b>B3: Physico-chemical Treatments</b> Chair : Dr. Chettiappan Visvanathan & Dr. Kamal Dahanayake B3-1 Warangkana Jutidamrongphan B3-2 P. Mondal B3-3 Suraphong Wattanachira	<b>C3: Water-InTro Workshop - II</b> Research and Development for Water Reuse Technology in Tropical Regions: Strategy and Technology to Provide Sustainable Water Resources for All
17:00 - 18:00	<b>Poster Session</b>		
18:00 -	Symposium Dinner (Supported by Prince of Songkla University)		
	<b>Day 3 &lt;October 26, 2010 (Tuesday)&gt;</b>		
	<b>Room A</b>	<b>Room B</b>	<b>Room C</b>
<b>Parallel Session 4</b>  8:00 -10:30	<b>A4: Lake and Reservoirs</b> Chair : Dr. F. Kazama & Dr. S. K. Chaerun A4-1 Dyah Marganingrum A4-2 Indah R S Salami A4-3 Awalina Satya A4-4 Le Anh Tuan	<b>B4: Industrial Wastewater</b> Chair : Dr. Suraphong Wattanachira & Dr. F. Kurisu B4-1 Adeline Seak May Chua B4-2 V. Arutchelvan B4-3 Somtip Danteravanich B4-4 M.R. Alavi Moghaddam	<b>C4: Water Environment in the Tropics (Supported by Water-InTro)</b> Chair : Dr. Somtip Danteravanich & Dr. Manish Kumar C4-1 G.G. Tushara Chaminda C4-2 Md. Mafizur Rahman C4-3 Unchalee Roekdee C4-4 Nyein Nyein Aung
10:30 - 11:00	Coffee Break		
<b>Parallel Session 5</b>  11:00 - 12:30	<b>A5: Pollution Load</b> Chair : Dr. Udomphon Puetaipalboon & Dr. Tushara Chaminda A5-1 Nga Do-Thu A5-2 Vinay Kumar Tyagi A5-3 G. Ali	<b>B5: Biological Treatment</b> Chair : Dr. H. Sato & Dr. Nyien Nyien Aung B5-1 S. M. Shamsul Huda B5-2 Tsuyoshi Imai B5-3 Rajinikanth Rajagopal	<b>C5: CREST Session</b> Innovative Technology and System for Sustainable Water Use: Development of well-balanced urban water use systems adapted for climate change
12:30 - 13:00	Break		
13:00 - 14:30	Farewell Lunch		

[PLATFORM PRESENTATION]

<October 25, 2010>

Session 1 (10:30 - 12:00)

A1 : Watershed Research

Paper Code	Paper Title	* indicates presenter
A1-1	Assessing the Impacts of Water Infrastructure Development on Water Resources: A Case Study in the Upper Srepok River Basin, Vietnam Tran Van Ty*, Kengo Sunada and Yutaka Ichikawa	
A1-2	Application of YHyM/ BTOPMC to Assess Hydrological Response of Gin River Basin at Southern Sri Lanka G. H. A. C. Silva*, Jun Magome and Hiroshi Ishidaira	
A1-3	Analysis of Basin-based Wastewater Management (BBWM) and its Impact on Pollutant Load Reduction of Domestic Sewage in Two Case Studies: Suwa, Japan and Bandung, Indonesia Suharyanto* and Jun Matsushita	

B1 : Water Environmental Issues and Sustainability (Supported by APIEL)

Paper Code	Paper Title	
B1-1	Groundwater Sustainability Infrastructure Index (GSII): A Measure of Sustainability in Groundwater Management Vishnu P. Pandey*, Sangam Shrestha, Saroj K. Chapagain and Futaba Kazama	
B1-2	Integral Approach to Environmental Leadership Education: An Exploration in the Heihe River Basin, Northwestern China T. Akiyama*, J. Li , T. Tokunaga, M. Onuki, K. J. An, T. Hoshiko and I. Ikeda	
B1-3	Index Development for Assessing Water Environment in Belawan Estuary Priana Sudjono*, Hidayati, Alvi Syahrin and Ahmad P. M. Tarigan	

C1 : Membrane Process (Supported by Water-InTro)

Paper Code	Paper Title	
C1-1	Chemical-free and Carbon Neutral Membrane Based Emergency Water Supply System A. Abeynayaka*, T. Nguyen, C. Visvanathan and P. Ariyamethee	
C1-2	Reduction of Dissolved Organic Matter in Raw Water Supply Reservoir by Hybrid Ultrafiltration Process W. Banchapattanasakda*, C. Musikavong, T. T. Suksaroj, S. Wattanachira and C. Suksaroj	
C1-3	Performance of Long-term Operation of Membrane Bioreactor with In-line Sludge Thickener Enhanced by Inclined Tubes (itMBR) Toru Watanabe*, Chen Jinxian, Wei Chunhai, Ryo Honda, Fumiyuki Nakajima and Kazuo Yamamoto	

Session 2 (13:00 - 15:00)

A2 : Groundwater Issues

Paper Code	Paper Title	
A2-1	Assessment of Groundwater for Human Use in Thoubal District of Manipur, India Oinam Jayalakshmi Devi and Alangappan Ramanathan*	
A2-2	Assessment of Groundwater Contamination with NO <sub>3</sub> <sup>-</sup> in a Heavily Fertilized and Intensively Cultivated Floodplain of Thailand Using GIS and Column Transport Experiments Aksara Putthividhya* and Ratchapol Pipitsomba	
A2-3	Sources of Nitrogen Contamination in Groundwater Deduced by Nitrate Isotopes in Kathmandu Valley, Nepal T. Nakamura*, K. Ichi Osaka, K. Nishida, S. K. Chapagain ,Y. Hiraga and F. Kazama	
A2-4	Assessment of Safe Distances between Tubewell and Pit Latrine in Sandy Soil of Bangladesh Ganesh C. Saha*, Ripon Chakma, M. Singha and M. Morshed Alam	

[PLATFORM PRESENTATION]

B2 : Socio-economical Issues (Supported by APIEL)

Paper Code	Paper Title	* indicates presenter
B2-1	Domestic Rainwater Harvesting Systems for Rural Communities - Experience from Sri Lanka Kamal Dahanayake*	
B2-2	Assessing the Implications of Climate Change Risks in a Community Water Supply Project in Nepal Nawa Raj Khatiwada*, K. Raj Bista, M. B. Kshetri, M. R. Chhetri and I. Basyal	
B2-3	Residential Water Demand Curve by Using Behavioral Economics Approach: A Case of Thailand Pongsak Suttinon* and Seigo Nasu	
B2-4	The Impact of Local Water Supply and Sanitation in Slum Dwelling of Dhaka City S. M. A. Islam* and K. Fukushi	

C2 : Water-InTro Workshop - I Strategy and Technology to Provide Sustainable Water Resources for All

Session 3 (15:30 - 17:00)

A3 : Sediment and Erosion

Paper Code	Paper Title	
A3-1	Application of Geo-informatics on the Coastal Erosion Monitoring of the East Coast of the Thai Southern Peninsular A. Bennui*, P. Rattanamanee, K. Limjirakhajorn, P. Phutmongkhon Yongchalermchai and Thirada Yongsatisak	
A3-2	Study on Estimation of Sediment Production in the Mekong River Using Global Datasets Kazuhiro Kakizawa*, Kengo Sunada and Tadashi Suetsugi	
A3-3	Biogeochemical Characterization of Sediments from Three Largest Dam Reservoirs (Saguling, Cirata, Jatiluhur) in West Java Province, Indonesia S. K. Chaerun*, NPD Pangesti, D. Jumiarni, INP Aryantha, K. Toyota and M. Okuno	

B3 : Physico-chemical Treatments

Paper Code	Paper Title	
B3-1	Removal of Phosphate from Wastewater by Zirconium Ferrite Adsorption Warangkana Jutidamrongphan*, Jae Wwoo Lee, Sang-Hyup Lee and Ki Young Park	
B3-2	Treatment of Arsenic Bearing Simulated Groundwater by Using Surface Modified GACs: A Comparative Study P. Mondal*, B. Mohanty and C. B. Majumder	
B3-3	Chemical Classes of Dissolved Organic Matter in Raw Water Supply Treated by Polyaluminium Chloride Coagulation Charongpun Musikavong and Suraphong Wattanachira*	

C3 : Water-InTro Workshop - II Strategy and Technology to Provide Sustainable Water Resources for All

<October 26, 2010>

Session 4 (8:30 - 10:30)

A4 : Lake and Reservoirs

Paper Code	Paper Title	
A4-1	Potency of Saguling Reservoir as an Alternative Future Source of Raw Water in the Bandung Metropolitan Area in Terms of Quantity Aspects Dyah Marganingrum*, Dwina Roosmini, Pradono and Dan Arwin	
A4-2	Study on the Application of Local Aquatic Plants to Reduce Copper Concentration in Reservoir Used for Floating Cage Aquaculture Fishery Indah R. S. Salami*, Annisa Nurfitri and Annisa Urfa	
A4-3	Spatial and Temporal Distribution Patterns of Phytoplankton Abundance Related to Water Quality in Lake Singkarak, West Sumatra Fachmijany Sulawesty and Awalina Satya*	
A4-4	Does Common Reed (Phragmites spp.) Contribute to the Removal of Phosphorous and Nitrogen from Domestic Wastewater in Constructed Subsurface Flow Wetlands? Le Anh Tuan*, Ilse Smets and Guido Wyseure	

B4 : Industrial Wastewater

Paper Code	Paper Title	* indicates presenter
B4-1	Removal of Ammonium from Latex Processing Wastewater by Struvite Precipitation Jian See, Adeline Seak May Chua*, Nik Meriam, Nik Sulaiman and Min Gyu Lee	
B4-2	Biodegradation of Textile Dyeing Wastewater Using Two Phase Pilot Plant UASB Reactor With Sago Wastewater as Co-substrate M. Senthilkumar, G. Gnanapragasam, V. Arutchelvan* and S. Nagarajan	
B4-3	Pretreatment of Concentrated Latex Industry Wastewater by Using Coagulation Somtip Danteravanich*,Surapon Arrykul, Pitsanu Bunnual and Pongnarin Prabnakorn	
B4-4	Comparison of Adding Ferric Chloride and Poly Aluminum Chloride Coagulants into Sequencing Batch Reactor for Decolorization of a Reactive Dye Sh. Mehrali, M. R. Alavi Moghaddam* and S. H. Hashemi	

C4 : Water Environment in the Tropics (Supported by Water-InTro)

Paper Code	Paper Title	
C4-1	Occurrence of Pharmaceutical and Personal Care Products (PPCPs) in Wastewaters and Surface Waters in Industrial Estates in Thailand Tushara Chaminda G. G*, Hiroaki Furumai and Variga Sawaittayotin	
C4-2	Trend Analysis and Assessment of Nutrient in the Peripheral Rivers Around Dhaka City Md. Mafizur Rahman*, Shishir Kumar Biswas, Showkat Mahmood and Sania Binte Mahtab	
C4-3	The Water Environment of Tapi River and the Coastal of Bandon Bay, Surat Thani Province, Thailand: A Review of 10 Years Monitoring Unchalee Roekdee*, Sirusa Kritsanapuntu, Suwat Thananuphaphphaisarn and Somtip Danteravanich	
C4-4	Estimation of Labile Heavy Metals in Downstream of the Chao Phraya River Using Equilibrium Model Pimonpan Harnsuk, Nyein Nyein Aung*, Tushara Chaminda G. G and Hiroaki Furumai	

Session 5 (11:00 - 12:30)

A5 : Pollution Load

Paper Code	Paper Title	
A5-1	Application of Material Flow Analysis in Assessing Nutrient Fluxes in Day – Nhue River Basin, Vietnam Nga Do-Thu*, Yasushi Sakamoto , Fubata Kazama and Kei Nishida	
A5-2	Effects of Holi (Festival in India) Colors on the Performance of 18 MLD Sewage Treatment Systems in India Vinay Kumar Tyagi*, Rubia Zahid Gaur, Akanksha Bhatia, Abid Ali Khan, Muntjeer Ali, Anwar Khursheed and Absar Ahmad Kazmi	
A5-3	Water Pollution Monitoring and Management: A Review of Bangkok G. Ali*, Vilas Niitivattananon, Rab Nawaz and Waqas Ahmad	

B5 : Biological Treatment

Paper Code	Paper Title	
B5-1	Degradation of Excess Sludge Accumulating Polyhydroxybutyrate Produced from Energy Saving Activated Sludge Process under Anaerobic Digestion S. M. Shamsul Huda*, Hiroyasu Satoh and Takashi Mino	
B5-2	Isolation of PHA-producer Capable of Using Biodiesel By-product Glycerol Jantima Teeka, Tsuyoshi Imai*, Xuehang Cheng, Alissara Reungsang, Takaya Higuchi, Koichi Yamamoto and Masahiko Sekine	
B5-3	Nitrogen Removal via Nitrite Pathway: A Sustainable Solution for Livestock Waste/Wastewater Management in Southeast Asian Countries Rajinikanth Rajagopal* and Fabrice Béline	

C5 : CREST Session

Innovative Technology and System for Sustainable Water Use:  
Development of well-balanced urban water use systems adapted for climate change



[POSTER PRESENTATION]    Presentation time: 17:00 to 18:00 on October 25th, 2010

No.	Paper title	Name of the authors
P01	Characterization of Dissolved Organic Matter in Rubber Glove Manufacturing Process Wastewater Treated by Stabilization Pond	N. Wanlaso, C. Suksaroj, T. Tachapattaworakul Suksaroj, and C. Musikavong
P02	Phosphate Removal from Aqueous Solutions by Electrocoagulation Using Aluminum Plate Electrodes	M. Behbahani, M. R. Alavi Moghaddam, and M.Arami
P03	Heavy Metals (Cu and Cr) Pollution from Textile Industry In Surface Water and Sediment (Case Study: Cikijing River, West Java)	Dwina Roosmini, Pertiwi Andarani, and Anindrya Nastiri
P04	Eco-hydrology of the Rajjaprabha Dam, Southern Thailand: Comparison of Upstream and Downstream Ecosystems	A. Kammuang, A. Limsakul, O. Khottapong, W. Paengkaew, and B. Suthamanuswong
P05	Trihalomethane Formation Potential of Organic Isolated Fractions in Raw Water Supply from U-Tapao Canal, Songkhla, Thailand	K. Srimuang, C. Suksaroj, T. Thachaphattaraworakul, S. Wattanagera and C. Musikavong
P06	Utilization of Pulp and Paper Sludge as a Low - cost Adsorbent for Reactive Blue 19 Dye Removal from Aqueous Solutions	A. Azizi, M. R. Alavi Moghaddam, and M. Arami
P07	PDSI - based Variations of Droughts and Wet Spells in Thailand: 1951 - 2005	A. Limsakul, W. Paengkaew, A. Kammuang, S. Limjirakan, W. Lalee and B. Suthamanuswong <sup>1</sup>
P08	Meltwater Quality Monitoring of Gangotri Glacier, Garhwal Himalaya, India	V. B. Singh, AL. Ramanathan, P. G. Jose, P. Sharma, A. Linda and M. Kumar
P09	Characterization of Municipal Wastewater in Kuala Lumpur, Malaysia: Carbon, Nitrogen and Phosphorus	B. P. Lee, Adeline Seak May Chua, Ying Hui Ong and Gek Cheng Nghoh
P10	Assessment of Variation of Stream Flow and Aridity Condition in Bangladesh	T. Afrin, R. Rumman, F. Warda and Mafizur Rahman
P11	Characteristics of Dissolved Silicate in Industrial Effluents Classified by Business Categories	H. Kumagai, Y. Tanaka, Y. Ishibashi and H. Matsuo
P12	Pb Accumulation Pattern in Simplified Food Chain of Artificial Inundated Water System	Tjandra Chrismadha, Awalina Satya, and Fachmijany Sulawesty
P13	Quantity and Quality of Surface Water Resource in Hue City, Vietnam	Pham Van Quan, T. T. Viet Nga, P. Khac Lieu and N. Bac Giang

No.	Paper title	Name of the authors
P14	Analysis of Trends in Climate Variability Indices: a Case Study of Kali Gandaki River Basin (KGRB), Nepal	Sujata Manandhar, Vishnu Prasad Pandey, and Futaba Kazama
P15	Evaluation of Nitrate Concentration in Groundwater and Drinking Water Distribution Network of Robat-Karim City, Tehran Province, Iran	S. Panahi and M. R. Alavi Moghaddam
P16	Enzymatic Degradation of Phenolic Endocrine Disrupting Chemicals by Aquatic Plants	A. R. dos Reis, Y Inagak, Y. Sakakibara, S. Srilacha, and M. Milintawisama
P17	The Characteristics of Disinfection By-products Formation in Chlorination of Principal Raw Waters for Drinking Water of Jeju Island, Korea	Jung-Tae Kim, Ju-Hui Heo, Sun-Mi Oh, Sang-Kyu Kam, and Min-Gyu Lee
P18	Non-point Pollution Runoff from Upstream Watershed of Nam River Dam in Korea	C. S. Lee, G. T. Seo, B. H. Moon and C. H. Yoon
P19	Removal of Perfluorooctanic Acid (PFOA) from Wastewater by Zero Valent Iron Nanoparticles (nZVI)	Jidapa Khatikarn, and Chongrak Polprasert
P20	Synthesis of Zeolite with Sewage and Water Treatment Sludges	Y. S. Yoo and H. J. Chae
P21	Experimental Study of Urban Sediment Size Distribution, Build-up and Washoff in a Peri-Urban Area: A Case Study of Rattanakosin Village, Thailand	T. Chaosakul, E. P. Rajapakse, H. D. L. Abeynayaka, V. Asokbunyara, K. Pakdeeruttanami, T. V. Tung, K.S. Wint, T. Z. Khai, P. Bounmanyvone, H. T. T. Tam, T. Koottatep and K. N. Irvine
P22	Effect of Different Plastic Media on Performance of Moving Bed Sequencing Batch Reactor (MB-SBR) for Treatment of Wastewater Containing an Azo Dye	E.Hosseini Koupaie, M.R.Alavi Moghaddam, and H.Hashemi
P23	Characteristics of Lightweight Aggregate Made by Adding Clay and Incineration Ash with Sewage Sludge	Y. S. Yoo and H. J. Chae
P24	Field Study on Biodegradation for a Combined Sewer System in Thailand	Yuttachai Sarathai, Thammarat Koottatep and Kim Irvine
P25	Water Quality Trading - An innovative Approach for Agricultural Non-point Sources of Water Pollution Control in Asia	Pham Ngoc Bao, Toshiya Aramaki, and Hiroaki Furumai
P26	The Effect of Catchment Area and Storage Tank Materials on Rainwater Quality	Chi-Bok Han, Taek-Soon Lee, and Gyu-Tae Seo