

Session Program for Oral Presentations

(FUWWS-XIAN2005, 18-20 May 2005)

Session 1: Future trend of urban development: needs for water reuse, materials recovery and alternative sanitation

Wednesday 18 May

Session 1-1

- 14:00 – 14:20 Anaerobic-digestion potential for ecological and decentralised sanitation in urban areas
T. Elmitwalli, Y. Feng, J. Behrendt and R. Otterpohl
- 14:20 – 14:40 Innovative modern urban drainage: from pollution control to resource recycling
J. Zhang, B.Y. Xiong, J. Li
- 14:40 – 15:00 Water shortage and needs for wastewater reuse in the north China
X. C. Wang
- 15:00 – 15:20 Pilot study of process of bathing wastewater treatment for reuse
F. Y. Cui and G. Ren
- 15:20 – 15:40 Performance of two-stage batch loading inverse vertical subsurface flow constructed wetlands
Yubo Cui, Jun Yin, Xuejun Tan, Ke Zhao

Coffee break (15:40 – 16:10)

Session 1-2

- 16:10 – 16:30 DESAR for energy recovery: hydrogen production process for a new H₂-producing anaerobe from the activated sludge
Y. F. Li, N. Q. Ren, C. P. Yang, J. Z. Li, G. X. Zheng
- 16:30 – 16:50 A sustainable strategy of water reuse and wastewater treatment in some regions in China
W. Zhang and P. Cornel
- 16:50 – 17:10 Microbial community dynamics during start-up of bio-hydrogen producing reactor
N. Q. Ren, D. F. Xing, M. L. Gong, Q. B. Li
- 17:10 – 17:30 The study of optimal volume of rainwater harvesting and utilization projects in cities
Li Junqi, Liu Xiaojun, Yu Ping and Che Wu

Thursday 19 May

Session 1-3

- 8:30 – 8:50 Design and operation of the bio-toilet system
M. A. Lopez Zavala, N. Funamizu
- 8:50 – 9:10 Carrying out process of compost material produced by sawdust toilet-A case study in Manila
T. Ishikawa, K. Ushijima, M. Irie, K. Shinozawa and T. Shimizu
- 9:10 – 9:30 Application of microbial risk assessment on the Bio-toilet in a residential house
N. Nakagawa, M. Otaki, H. Oe, K. Ishizak
- 9:30 – 9:50 The basic study of the effect of feces contamination on urea hydrolysis
S. Hotta, H. Narita, N. Funamizu
- 9:50 – 10:10 Drying kinetics of sawdust for bio-Toilet System
R. Ito and N. Funamizu

Coffee break (10:10 – 10:40)

Session 1-4

- 10:40 – 11:00 A preliminary experiment on the use of sawdust toilet at ordinary home in Japan
K. Ushijima, M. Irie and T. Ishikawa
- 11:00 – 11:20 Study on disposal of human waste by on-site composting-type bio-toilet for water pollution control
L. L. Liu, X. Qian, G.F. Lu, T. Ishikawa, W.Y. Liu, L.M. Gao, D.M. Jiang, X.Y. Wang
- 11:20 – 11:40 Effect of carriers and micro-animals on the purification ability of Johkasou systems
N. Iwami, T. Itayama, R. Suzuki, N. Tanaka, T. Saitou, H. Yamazaki, M. Mizuochi and Y. Inamori
- 11:40 – 12:00 Feasibility of introducing the bio-toilet to decrease the water pollution in an open canal: A case study in Kiarcondong slum area in Bandung City
N. Sintawardani, M. Irie, J. Triastuti, T. Ishikawa, and M. Affendi

Session 2: Innovative wastewater treatment technologies (I) Biological treatment**Wednesday 18 May****Session 2-1**

- 14:00 – 14:20 Advanced treatment of decentralized sewage of new city development zones by two-stage anaerobic biofilter soil trench system
Z.B. Hu, T. Itayama, N. Tanaka, D.Y. Wu, L. Yan, H.N. Kong, Y. Inamori
- 14:20 – 14:40 Pilot study of a fluidized-pellet-bed bioreactor for simultaneous biodegradation and solid/liquid separation in municipal wastewater treatment
H. L. Yuan, X. C. Wang, Y. J. Liu, Y. J. Yang, N. Tambo
- 14:40 – 15:00 Aerobic granular sludge: a promising technology for decentralized wastewater treatment
Z. H. Li, T. Kuba and T. Kusuda
- 15:00 – 15:20 Effect of denitrification type on pH profiles in SBR process
Peng Yong-zhen, Wang Shao-po, Wang Shu-ying, Hu Jian-ge, Qiao Hai-Bing
- 15:20 – 15:40 A decentralized sewage treatment process: DASB & W-SFCW combined technology
Ji Junjie, He Chengda, Yin Shixue, Ge liying, Qian Xiaoqing, Tan Ling, Chen Juan, Zhao Jinhui, Wang Xia

Coffee break (15:40 – 16:10)**Session 2-2**

- 16:10 – 16:30 Development and characteristics of simultaneous nitrification and denitrification aerobic granules in sequencing batch reactors
Yang Qi, Li Xiao-ming, Zeng Guang-ming, Xie Shan, Liu Jing-jin
- 16:30 – 16:50 Domestic wastewater treatment using the nonwovens bioreactor
Z. G. Meng, F. L. Yang, X. W. Zhang, Y. Z. Yang
- 16:50 – 17:10 Effect of variation flow ratios on performance of split-feed anaerobic baffled reactor
Jin-lan Xu, ting-lin Huang, Zhi-ying Wang
- 17:10 – 17:30 Application of full scale moving bed biofilm reactor in the advanced treatment of petrochemical secondary wastewater
X.W. Zhang, F.L. Yang, Y.Z. Yang and L.J. Shi

Thursday 19 May

Session 2-3

- 8:30 –8:50 Single-stage nitrogen removal using anammox and partial nitrification (SNAP)
Kenji Furukawa, Hiroyuki Tokitoh, Pham Khac Lieu and Takao Fujii
- 8:50 –9:10 Biological nitrogen removal from petrochemical wastewater using the anoxic and oxic swim-bed biofilm reactor
L. J. Shi, Y. X. Xun, F. L. Yang, X. W. Zhang, X. J. Wang and F. Kenji
- 9:10 – 9:30 Nitrogen removal using anammox process in different biomass carriers
Zhijun Liu, Tran Thi Hien Hoa, Masaharu Takuwa, Luong Ngoc Khanh and Kenji Furukawa
- 9:30 – 9:50 A pilot study on step-feed BNR for municipal wastewater treatment
Wang Sheping, Yu Lifang, Han Guanghui, Zhu Hairong and Peng Dangcong
- 9:50 – 10:10 Anaerobic uptake of phosphate in an anaerobic-aerobic granular sludge SBR
X. Wang, M. Ji, J. F. Wang, Z. Liu, and Z. Y. Yang

Coffee break (10:10 – 10:40)

Session 2-4

- 10:40 – 11:00 Swim-bed technology as an innovative attached-growth process in the wastewater treatment
Yingjun Cheng, Daisuke Yazaki, Toichiro Koyama and Kenji Furukawa
- 11:00 – 11:20 Recovery of phosphorus resource from a new biological wastewater treatment process with on-site reduction of excess sludge
Yunan Zhou, Zehua Liu, Anfeng Yu, Quan Feng, Mingfang Luo and Xin-Hui Xing
- 11:20 – 11:40 The determination of settling velocity of anaerobic sludge granules In UASB-like reactors
Liu Yong-Hong, He Yan-Ling, Li Yao-Zhong, Hao-Jian
- 11:40 – 12:00 Biological wastewater treatment by a bioreactor with repeatedly coupling of aerobes and anaerobes aiming at on-site reduction of excess sludge
Anfeng Yu, Quan Feng, Zehua Liu, Yunan Zhou and Xin-Hui Xing

Session 3: Innovative wastewater treatment technologies (II) Membrane application

Wednesday 18 May

Session 3-1

- 14:00 – 14:20 Fate and transport of EDCs (estrone and 17 β -estradiol) in membrane bio-Reactor used for water reuse
Seojin Chang, Namjung Jang, Younghyun Yeo, In S. Kim
- 14:20 – 14:40 Long-term performance of a full-scale submerged membrane bioreactor for bath wastewater reclamation
Futai Chen, Zhenghong Fan, Xia Huang and Xianghua Wen
- 14:40 – 15:00 A hybrid submerged membrane bioreactor process for municipal wastewater treatment and reuse
B. Cao, X. C. Wang, E. R. Wang
- 15:00 –15:20 Characteristics of organics AMWD in the secondary effluent and experimental study of applicable pretreatment for UF
L. Wang, Y. Liu, X. D. Wang, W.S. Duan
- 15:20 – 15:40 Performance evaluation of ICAS-MBR for decentralized treatment and reuse of domestic wastewater
Shui-li Yu, Fang-bo Zhao, Ya-nan Liu, Hong-jie Zhang, Jin-long Wang

Coffee break (15:40 – 16:10)

Session 3-2

- 16:10 – 16:30 The MBR application on the wastewater reuse from the effluent of Bali primary WWTP, northern Taiwan
H. H. Chen, S. Shiau, Y. C. Lin
- 16:30 – 16:50 A microaerobic membrane bioreactor seeded with anaerobic granules for domestic wastewater treatment
Libing Chu, Xingwen Zahng, Fenglin Yang
- 16:50 – 17:10 Heterotrophic nitrification in MBR: isolation and characterization of heterotrophic nitrifying bacteria
Yan Lin, Hainan Kong and Yiliang He
- 17:10 – 17:30 Effect of precoating dynamic membrane and its thickness on filtering capacity of membrane module
H. M. Zhang, M. S. Ye, L. F. Liu, X. W. Zhang, F. L. Yang

Thursday 19 May**Session 3-3**

- 8:30 – 8:50 Application of a membrane bioreactor for the treatment of low loaded domestic wastewater for water reuse
F. Fatone, P. Battistoni, P. Pavan, F. Cecchi
- 8:50 – 9:10 Research of dynamic membrane as an anti-fouling technology
Sen Qiao, Hanmin Zhang, Xingwen Zhang, Fenglin Yang
- 9:10 – 9:30 Study of membrane morphology by image analysis of electron micrographs and model analysis
L. Wang, W.S. Duan, X.D. Wang and Y. Liu
- 9:30 – 9:50 Performance of dynamic membrane in crossflow microfiltration: filtrating secondary effluent and activated sludge
Li Fang, Tian Qing, Li Jun, Chen Jihua, Deng Chunhua
- 9:50 – 10:10 Pilot study on municipal wastewater treatment by a modified submerged membrane bioreactor
Chunhai Wei, Xia Huang, Xianghua Wen

Coffee break (10:10 – 10:40)**Session 3-4**

- 10:40 – 11:00 Ozonation pretreatment for ultrafiltration of the secondary effluent
X. D. Wang, L. Wang, Y. Liu and W.S. Duan
- 11:00 – 11:20 Biological nitrogen removal with enhanced anoxic phosphate uptake in a sequencing batch membrane bioreactor
J. N. Xiao, H.M. Zhang, W.C. Dai, X.W. Zhang, F.L. Yang
- 11:20 – 11:40 Study on the treatment of food wastewater by MBR for reuse in local factory
Zuo Jin-long, Xu Yong-peng, Zhao Ying, Cui Fu-yi
- 11:40 – 12:00 Treatment of oil refining industry wastewater with membrane-bioreactor system
Panyue Zhang, Guangming Zeng, Guangming Zhang, Jinyong Hu

Session 4: Enhanced primary treatment and advanced treatment**Wednesday 18 May****Session 4-1**

- 14:00 – 14:20 Enhanced primary treatment of concentrated black water and kitchen residues within DESAR concept using two types of anaerobic digesters
K. Kujawa-Roeleveld, T. Elmitwalli and G. Zeeman
- 14:20 – 14:40 Comparison study on changes in water quality and toxicity of wastewater after chlorine and chlorine dioxide disinfections
Li-Sha Wang, Hong-Ying Hu and Tong Zhang

- 14:40 – 15:00 Effectiveness of preoxidation in enhancing the coagulation of bathing wastewater and optimization
Cui Fu-yi, Ren Gang
- 15:00 – 15:20 Pilot studies of factors influencing the simultaneous nitrification and denitrification in an oxidation ditch treating the domestic wastewater at low cost
Gao Shouyou, Peng Yongzhen, Dong Wenyi, Ma Yong and Jiang Guilian
- 15:20 – 15:40 Efficiency and limitation of enhanced primary treatment for wastewater treatment
X. C. Wang and P. K. Jin

Coffee break (15:40 – 16:10)

Session 4-2

- 16:10 – 16:30 On site experiments the slanted soil treatment systems for domestic gray water
T. Itayama, M. Kiji, A. Suetsugu, N. Tanaka, T. Saito, N. Iwami, M. Mizuochi, Y. Inamori
- 16:30 – 16:50 Different pollutants removal efficiencies and pollutants distribution with particle size of wastewater treated by CEPT process
G. R. Xu, Y. P. Zhang and J. Gregory
- 16:50 – 17:10 Advanced treatment of secondary effluent by DGB adsorbent for wastewater reuse
Yunzheng Pi, Guichun Yun, Jianglong Wang
- 17:10 – 17:30 A novel technique for decentralized water and wastewater treatment by non-thermal plasma degradation with glow discharge electrolysis
Jinzhong Gao, Zizhen Shen

Thursday 19 May

Session 4-3

- 8:30 – 8:50 Estrogen removal from biological pre-treated wastewater within decentralised sanitation and re-use concepts
T. Z. D. de Mes, A. M. Urmenyi, A. A. Poot, M. Wessling, M. H. V. Mulder, G. Zeeman
- 8:50 – 9:10 A dispersed-ozone floatation (DOF) separator for tertiary wastewater treatment
P. K. Jin, X. C. Wang and G. Hu
- 9:10 – 9:30 Comparison of nutrient removal efficiency between pre- and post-denitrification wastewater treatments
K. Hamada, T. Kuba, V. Torrico, M. Okazaki, T. Kusuda
- 9:30 – 9:50 Physico-chemical activated sludge enhanced treatment in CEPT process
G. R. Xu, W.T. Zhang and G. B. Li
- 9:50 – 10:10 The statistical analysis of domestic water treatment efficiency using the slanted soil treatment systems under several conditions
N. Tanaka, T. Itayama, M. Kiji, A. Suetsugu, T. Saitou, N. Iwami, M. Mizuochi and Y. Inamori

Coffee break (10:10 – 10:40)

Session 4-4

- 10:40 – 11:00 Low-temperature post-treatment of anaerobically treated-sewage in anaerobic filter with cationic-polymer addition
T. A. Elmitwalli, R. Raimundo, K. Kujawa-Roeleveld, and G. Zeeman
- 11:00 – 11:20 Effects of operational parameters on the sludge-settling characteristics in enhanced primary treatment by bio-flocculation and adsorption
Xu Ping, Zhang Zhi
- 11:20 – 11:40 Biological phosphorus removal with nitrite as electron acceptor
Xiaoling Zhang, Zhiying Wang, Qing Zhao

11:40 – 12:00 Nitrification performance and its kinetic characteristic of biological aerated filter (BAF)
Qiu Liping, Ma Jun, Zhang Lixin, and Yang Yifei

Session 5: Sustainability aspects of wastewater systems: risk, economic and institutional analyses

Wednesday 18 May

Session 5-1

14:00 – 14:20 Linking environmental and economic sustainability in establishing standards for wastewater reuse in Israel
P. Lawhon, M. Schwartz

14:20 – 14:40 Optimization Analysis of Decentralized Sanitation and Reuse System
Ting-Lin Huang, Zhi-Qiang Xu, Xiaochang C Wang, Zhang Hui

14:40 – 15:00 Estimation of reduced and increasing health risks by installation of urban wastewater systems
T. Aramaki, M. Galal, K. Hanaki

15:00 – 15:20 Safety of treated water for reuse purposes – comparison of filtration and disinfection processes
X. C. Wang, F. G. Qiu

15:20 – 15:40 Factors effecting the cost of reclaimed water treatment in Beijing
C. M. Feng, H. Z. Wang

Coffee break (15:40 – 16:10)

Session 5-2

16:10 – 16:30 Agronomic aspects and environmental impact of reusing marginal water in irrigation-A case study from Egypt
N. M El-Mowelhi, S.M.S. Abo Soliman, S. M. Barbary; and M.I. El-Shahawy

16:30 – 16:50 Factors Restricting Wastewater Reused as Ecological Water in Western Arid Districts of China
Ting-Lin Huang, Chen Ping, Zhang Hui

16:50 – 17:10 Toxicity screening and evaluating on chlorination disinfection of wastewater reclamation processes
Dongbin Wei, Lisha Wang, Jie Wei, Hong-Ying Hu

17:10 – 17:30 Multi-objective planning about water resource system of residential community
Zhang Yajun, Pang Weihai and Mu Huaying

Session 6: Controlling and monitoring techniques

Thursday 19 May

Session 6-1

8:30 – 8:50 Implementation of the IWA anaerobic digestion model No.1 (ADM1) for simulating digestion of blackwater from vacuum toilets
Y. Feng, J. Behrendt, C. Wendland, and R. Otterpohl

8:50 – 9:10 System Dynamics Model and Its Application to Municipal Wastewater Reclamation and Reuse for the Arid and Water-deficient Area in Western China
Ting-Lin Huang, Li Mei, Xiaochang C Wang

9:10 – 9:30 Modeling for operations versus design of water distribution system
M. He, F. J.-C. Bouchart

9:30 – 9:50 Automatic control of sludge recycle and wastage for improved nitrogen removal in predenitrification process
Yong Ma, Yongzhen Peng, Hong Du and Wenyi Dong

9:50 – 10:10 Effects of influent COD/N ratio and internal recycle ratio on nitrogen removal efficiency in KNR® process
C.W. Suh, S.H. Lee, H.S. Jeong, J.C. Kwon and H.S. Shin

Coffee break (10:10 – 10:40)

Session 6-2

10:40 – 11:00 Study on the distribution characteristics of ammonia-oxidizing bacteria in *Typha latifolia* constructed wetlands using fluorescent in situ hybridization (FISH)

Li Yan, Ryuhei Inamori, Ping Gui, Hai-nan Kong, Masatoshi Matsumura, Yuhei Inamori

11:00 – 11:20 Influence of temperature on UASB reactor treating low strength organic wastewater

Wang Jie, Zhao Jian-qiang

11:20 – 11:40 Analysis of phosphate-accumulating organisms cultivated under different carbon sources with polymerase chain reaction-denaturing gradient gel electrophoresis assay (PCR-DGGE)

Yanan Liu, Shuili Yu, Guolin Jing, Bingjie Zhao and Siyuan Guo