

Final Program of the 1st International Conference on Geo-Energy and Geo-Environment (GeGe2015)

Venue: IAS Lecture Theater, Lo Ka Chung Building, Lee Shau Kee Campus
The Hong Kong University of Science and Technology (HKUST)

Thursday 3rd December, 2015	
15:00-18:00	Registration
17:00-19:00	Reception with light refreshments
Friday 4th December, 2015 (Geo-Energy)	
7:30-15:00	Registration
8:30-8:45	Opening session: Introduction and welcome remarks (MC: Clarence Choi) Tony Chan, President of the HKUST C.W.W. Ng, Chair of the Organizing Committee
Session 1 Chair: Marcelo Sanchez	
8:45-9:30	IAS Lecture 1: Induced seismicity considerations in geo-energy resource development <u>J.K. Mitchell</u> and R.A. Green
9:30-10:00	Keynote Lecture 1: Geo-energy, risk and elements of maintaining sustainability of our resources for society <u>S. Lacasse</u>
10:00-10:30	Keynote Lecture 2: Shallow geothermal energy at city scale <u>K. Soga</u> , Y. Zhang and R. Choudhary
10:30-10:50	Coffee Break & Poster Presentation
Session 2 Chair: John McCartney	
10:50-11:20	Keynote Lecture 3: Energy geo-engineering: storage <u>C. Santamarina</u>
11:20-11:50	Keynote Lecture 4: Performance of energy piles: centrifuge modelling <u>C.W.W. Ng</u> and A. Gunawan
11:50-12:20	Keynote Lecture 5: Analysis of the thermo-mechanical behaviour of geothermal heat exchanger foundations <u>L. Laloui</u>
12:20-13:20	Photograph Taking, Lunch, & Poster Presentation

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Session 3	
Chair: Lyesse Laloui	
13:20-13:50	Keynote Lecture 6: Model tests on the settlement of energy piles with different tube types <u>H.L. Liu</u> , G.Q. Kong, C.W.W. Ng, C.L. Wang, H. Zhou, Y.D. Wu and G.W. Li
13:50-14:20	Keynote Lecture 7: Recent advances in deep-water pipeline geotechnics <u>L.Z. Wang</u>
Session 4 - Five-minute pitch session	
Energy geo-structures and storage – Chair: Carlos Santamarina	
14:20-14:25	Field study of heating effect on two pre-stressed concrete pipe energy piles Y.H. Chen, <u>J. Xu</u> , L. Chen, H. Li and C.W.W. Ng
14:25-14:30	A study of CO₂ gas storage in coal <u>S.Q. Hao</u> , S. Kim and Y. Qin
14:30-14:35	Preliminary investigation of energy piles in soft Bangkok clay <u>A. Jotisankasa</u> , J. Sittidumrong and K. Chantawarangul
14:35-14:40	Settlement of energy piles under thermal cycles in sand: numerical simulations <u>Q.J. Ma</u> , A. Gunawan and C.W.W. Ng
14:40-14:45	Observations from long term monitoring of energy piles during building operation <u>J.S. McCartney</u> and K.D. Murphy
14:45-14:50	Shear behaviour of intact loess at different suctions and temperatures <u>Q.Y. Mu</u> , C.W.W. Ng and C. Zhou
14:50-14:55	The role of null point movements on the thermo-mechanical analysis of energy piles <u>A.F. Rotta Loria</u> , A. Gunawan, C. Shi, L. Laloui and C.W.W. Ng
14:55-15:00	Preliminary analysis of continuous gravimeter test for CCS Gundih monitoring <u>E.J. Wahyudi</u> , Y. Fukuda, M. Itakura, N.N. Hauna and S. Alawiyah
15:00-15:05	Thermal effects on saturated sand: experimental and numerical study <u>S.H. Wang</u> , C.W.W. Ng and C. Zhou
15:05-15:10	Research on temperature field distribution of diaphragm wall in sands <u>X.J. Wang</u>
15:10-15:15	Laboratory observations of sand aging and possible relation to pile setup <u>Z.J. Wang</u> and R.L. Michalowski

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15:15-15:35	Coffee Break & Poster Presentation
Methane hydrate and energy extraction – Chair: Kenichi Soga	
15:35-15:40	Evaluation of controlled low strength material made with industrial by-products as a backfill of borehole heat exchangers T.M. Do, Y.S. Kim and <u>C.H. Lee</u>
15:40-15:45	Hybrid piezo-pyroelectric energy harvesting from pavement J. Hu and <u>J.L. Tao</u>
15:45-15:50	CFD-DEM analysis of the dynamic mechanical behavior of methane hydrate bearing sediment M.J. Jiang, <u>J. Liu</u> , J. He
15:50-15:55	Experimental study of geological characteristics of calcareous coral sand in marine environments F. Li, <u>Y.R. Lv</u> and Y.W. Liu
15:55-16:00	Underground reservoir for the cooling of air conditioners in Taipei basin <u>H.J. Liao</u> and C.P. Kuo
16:00-16:05	Thermal analysis of submarine power cable considering natural convection Z. Rizvi, <u>F. Wuttke</u> and K. Sembdner
16:05-16:10	Dynamic ground-coupled heat exchanger by air sparging technology <u>M. Schuck</u> and J. Grabe
16:10-16:15	A state-dependent critical state model for methane hydrate-bearing sand <u>J. Shen</u> , C.F. Chiu, C.W.W. Ng, G.H. Lei, J. Xu
Conference Dinner in Ferry – Sightseeing along the Victoria Harbour (Boarding time: 18:30)	

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Saturday 5 th December, 2015 (Geo-Environment)	
8:00-12:00	Registration for local day-pass holders Venue: IAS Lecture Theater, Lee Shau Kee Campus, HKUST
Session 5 Chair: Suzanne Lacasse	
8:30-9:15	IAS Lecture 2: Engineered liners in geo-environmental engineering: from landfills to mining applications <u>K. Rowe</u>
9:15-9:45	Keynote Lecture 8: GCLs in composite liners subjected to high temperatures: case of brine ponds in unconventional gas extraction sites <u>M. Bouazza</u>
9:45-10:15	Keynote Lecture 9: A new alternative all-weather earthen landfill cover system <u>C.W.W. Ng</u> and <u>J.L. Coe</u>
10:15-10:45	Keynote Lecture 10: Numerical modelling of biochemical, hydraulic and mechanical behaviours of landfills with high-food-waste-content MSW <u>Y.M. Chen</u> , <u>W.J. Xu</u> , <u>X.B. Xu</u> and <u>T.L.T. Zhan</u>
10:45-11:05	Coffee Break & Poster Presentation
Session 6 Chair: Malek Bouazza	
11:05-11:35	Keynote Lecture 11: Performance of a compacted loess/gravel cover as a capillary barrier and landfill gas emission controller in Northwest China <u>T.L.T. Zhan</u> , <u>Q.W. Qiu</u> , <u>G. Y. Li</u> and <u>Y.M. Chen</u>
11:35-12:05	Keynote Lecture 12: Extension of three-dimensional failure mechanism in stability analysis of earth slopes <u>Y.F. Gao</u> and <u>F. Zhang</u>
12:05-14:30	Lunch & Poster Presentation Laboratory visit - Geotechnical Lab and Geotechnical Centrifuge Facility (GCF)
Session 7 - Five-minute pitch session	
Waste characterization and landfill leachate – Chair: Limin Zhang	
14:30-14:35	Compressibility characteristics of municipal solid waste in Hambantota landfill of Sri Lanka <u>V.R.S. De Silva</u> , <u>N.H. Priyankara</u> , <u>V.H.G.N.R. Janasinghe</u> , <u>A.M.N Alagiyawanna</u> and <u>K. Kawamoto</u>

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14:35-14:40	Influential factors on methane generation and settlement of municipal solid waste during degradation - experiments and literature synthesis <u>X. Fei</u> and D. Zekkos
14:40-14:45	Three-dimensional design of vertical wells for leachate recirculation at bioreactor landfills <u>S.J. Feng</u> and Z.W. Chen
14:45-14:50	Model for predicting leachate generation of high-kitchen waste content MSW landfills <u>J.W. Lan</u> , Y.C. Li, J. Ye, T.L.T Zhan and Y.M. Chen
14:50-14:55	Real-time measurement and quantitative analysis of moisture migration based on HERT <u>Y.X. Nie</u> , T.F. Liu, L.M. Hu and Q.B. Wen
14:55-15:00	One-dimensional model for predicting dependency of moisture retention capacity on degradation and stress for municipal solid waste <u>H. Xu</u> , T.L.T. Zhan, H. Li and Y.M. Chen
Waste storage system – Chair: H J Liao	
15:00-15:05	Effect of nanomaterial on the permeability of landfill compacted barriers <u>J.L. Coo</u> and C.W.W. Ng
15:05-15:10	Role of methane oxidation in coupled water-gas-heat reactive transport: numerical simulation <u>S. Feng</u> , H.W. Liu and C.W.W. Ng
15:10-15:15	Behaviour of Kaolinite and bentonite at elevated temperatures S. Gandy, <u>T. Ring</u> , C. Leo and S. Liyanapathirana
15:15-15:20	Seismic evaluation of municipal solid waste landfills in Hong Kong <u>D.R. Huang</u> and G. Wang
15:20-15:25	Field measurement of gas permeability for a compacted loess final cover for MSW landfills in Northwest China <u>Q.W Qiu</u> , T.L.T. Zhan and W.J. Xu
15:25-15:30	Effects of biochar application on soil-water retention behaviour of compacted clay <u>J.T.F. Wong</u> , Z. Chen, X.W. Chen, C.W.W. Ng and M.H. Wong
15:30-15:35	Multi-scale modelling of compaction bands in highly porous sandstone <u>H.R. Wu</u> , J.D. Zhao and N. Guo
15:35-15:40	Steady-state analytical model for VOCs diffusion in layered landfill composite cover system H.J. Xie, <u>Q. Wang</u> , H.X. Yan, Z.H. Qiu and Y.M. Chen

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15:40-15:45	Remove hydrogen sulfide by ground granulated blast furnace slag (GGBS) amended soil <u>M. Xie</u> and C.W.W. Ng
15:45-15:50	One-dimensional heat and water transfer in a three-layer landfill soil cover system <u>J. Xu</u> and Y.H. Lu
15:50-15:55	Numerical and laboratory study on evaporation process in a loess soil column subjected to a heating <u>W.J. Xu</u> , X.C. Liu, T.L.T. Zhan, Y.M. Chen
15:55-16:00	Quasi-static response in multilayered thermoelastic media and applications to radioactive waste disposal <u>Y. Yang</u> , T. Schanz and M. Datcheva
16:00-16:05	Optimal design of granular landfill cover for minimising rainfall infiltration and gas emission <u>L.M. Zhang</u> and Y.Q. Ke
16:05-16:25	Coffee Break & Poster Presentation
Bio-geotechnology and green slopes - Chair: Jotisankasa Apiniti	
16:25-16:30	A newly developed centrifuge environmental chamber at HKUST: initial results of a slope test <u>A. Archer</u> and C.W.W. Ng
16:30-16:35	Influence of particle size on the strength of bio-cemented sand <u>M.J. Cui</u> , J.J. Zheng, R.J. Zhang and H.J. Lai
16:35-16:40	Potential of bacteria-induced soil desaturation for liquefaction mitigation <u>J. He</u> , J. Chu and J. Peng
16:40-16:45	Permeability function of root-reinforced soils <u>A. Jotisankasa</u> and T. Sirirattanachat
16:45-16:50	Root cohesion of the selected native species for slope upgrading in Hong Kong <u>F.T.Y. Leung</u> and R.W.M. Yan
16:50-16:55	Effect of planting spacing on soil hydraulic properties in landfill cover <u>J.J. Ni</u> , Z.J. Wang and C.W.W. Ng.
16:55-17:00	Pore-scale study of microbial-induced calcium carbonate precipitation <u>Y.Z. Wang</u> and K. Soga
17:00-17:05	Effects of nonlinear failure criterion on the three-dimensional stability analysis of uniform slopes <u>F. Zhang</u> , D. Wu and Y.F. Gao
Groundwater protection and recycled materials - Chair: Anthony Leung	

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17:05-17:10	<p>Subsurface modelling based on gravity method and resource water calculated in Bandung Basin</p> <p><u>D. Adurrahman</u>, D. Santoso, G.A.K. Wawan, S. Alawiyah, J.W. Eko, I. Gunawan, S.O. Ika</p>
17:10-17:15	<p>Effect of replacement of excavated soil on engineering properties of controlled low strength material made with industrial by-products</p> <p>T.M. Do and <u>Y.S. Kim</u></p>
17:15-17:20	<p>Monitoring groundwater distribution change in 2010-2015 time-lapse of Bandung city using 4D gravity</p> <p><u>I. Gunawan</u>, E.J. Wahyudi, D. Abdurrahman, I. Oktavianti, S. Alawiyah, W.G. Abdulkadir and D. Santoso</p>
17:20-17:25	<p>Effect of rubber content at the critical state of sand-rubber mixtures</p> <p><u>J.C. Lopera Perez</u>, C.Y. Kwok and K. Senetakis</p>
17:25-17:30	<p>The use of the capacitive resistivity method to study geo-environmental related problems</p> <p>Q. Ni, Y.H. Wang and <u>Y. Wu</u></p>
17:30-17:35	<p>Numerical simulation of electro-osmotic consolidation</p> <p><u>H. Wu</u>, L.M. Hu, and Q.B. Wen</p>
17:35-17:40	<p>Remediation of organic contaminated groundwater by ozone micro-nano bubbles</p> <p><u>Z.R. Xia</u> and L.M. Hu</p>
17:40-17:45	<p>Using polli-brick for geotechnical engineering: preliminary result</p> <p><u>Y. Xu</u> and J.P. Wang</p>
17:45-18:00	<p>Closing Ceremony (MC: Clarence Choi)</p> <p>C.W.W. Ng, Chair of the Conference Organizing Committee Organizer of the 2nd International Conference on Geo-Energy and Geo-Environment</p>