GEOTECHNICAL ENGINEERING

Published by the:

SOUTHEAST ASIAN GEOTECHNICAL SOCIETY &
ASSOCIATION OF GEOTECHNICAL SOCIETIES IN SOUTHEAST ASIA

GEOTECHNICAL ENGINEERING

GUEST EDITORS

Year 2011: **1: Prof. Jie Han**
2: Prof. Tatsunori Matsumoto , Prof. Der Wen Chang
3: Prof. Chang Yu
4: Dr. Dariusz Wanatowski

Year 2012: **1: Prof. Charles Ng , Dr. Apiniti Jotisankasa**
2: Prof. Ikuo Towhata , Prof. Der Wen Chang, Dr. Ivan Gratchev
3: Prof. Malek Bouazza
4: Tom Lunne, Prof. Don de Groot

Year 2013: **1: Prof. Angelo Amorosi, Muhunthan Balasingham,Dr Hossam Abuel-Naga**

2: Prof. Akira Murakami ,Prof. FusaoOka, rof. Helmut F. Schweiger , Dr. Dariusz Wanatowski

3: Prof Tatsunori Matsumoto & Prof Der Wen Chang

4: Prof. Robert Lo, Prof. Prof. Hamid Nikras, Dr. Peerapong Jitsangiam

Year 2014: **1: Prof. B.V.S. Viswanadham, Prof. Christophe Gaudin, Prof. Tom Schanz, Dr. Dominic Ong**

2: Prof. Pedro Pinto

3: Prof. William Van Imp

4: Prof. Der Wen Chang

PAST EDITORS

Dr. E.W. Brand (1970 – 1973)
Dr. E.W. Brand, Prof. A.S. Balasubramaniam (1974 – 1976)
Dr. E.W. Brand, Dr. V.K. Campbell (1977 – 1978)
Dr. V.K. Campbell (1978 – 1980)
Mr. J.S. Younger (1980 – 1985)
Mr. D.R. Greenway (1986 – 1987)
Mr. P.G.D. Whiteside (1988 – 1989)
Mr. C.A.M. Franks (1990 – 1995)
Prof. D.T. Bergado (1996 – 2001)
Dr. N. Phienwej (2002 -2010)

1: Vol. 41: No. 1: MARCH 2010: ISSN 0046-5828

2: Vol. 41: No. 2: JUNE 2010: ISSN 0046-5828

3: Vol. 41: No. 3: SEPTEMBER 2010: ISSN 0046-5828

The Enhancement of Pile Capacity by Shaft Grouting Technique in the Ruspa Bridge Project in Bangladesh.
by Ryuji Manai

Piled Raft - A Cost-Effective Foundation Method for High-Rises
by Phung Duc Long

4: Vol. 41: No. 4: DECEMBER 2010: ISSN 0046-5828

Foundation Design of the Incheon Bridge
by Sung-Min Cho

Living with Landslide Risk
by Lacasse, Nadim and Kalsnes

Erosion, Slope Stability, Prediction of Future Recession in Actively Eroding Slopes
by Tuncer B. Edil

Engineering Protocols for the Assessment of the Net Moisture Flux at the Ground Surface
by D.G. Fredlund, H.Q. Vu and J. Stianson

Response of Porous Seabed to Dynamic Loadings
by D-S Jeng, X L Zhou, X D Luo, J H Wang, J Zhang and F P Gao

5: Vol. 42: No.1: March 2011: ISSN 0046-5828

Some Issues in Geosynthetic Reinforced Walls and Slopes *by D. Leshchinsky*

Advance in Geogrid Reinforced Slopes in Malaysia *by T.A. Ooi and C.H. Tee*

Embankment Construction with Saturated Clayey Fill Material Using Geocomposites *by J.-C. Chai, T. Hino, Y. Igaya, and Y. Yamauchi*

Numerical Modeling of Geosynthetic-Reinforced Earth Structures and Geosynthetic-Soil Interactions *by J. Huang, A. Bhandari, and X. Yang*

Geosynthetic Tubes and Geosynthetic Mats: Analyses and Applications *by J. Chu, W. Guo, and S.W. Yan*

Performance-based Design for Geosynthetic Liner Systems in Landfills *by Y.M. Chen, W.A. Lin, B. Zhu, and L.T. Zhan*

Quantifying the Influence of Geosynthetics on Performance of Reinforced Granular Bases in Laboratory *by J. Han, Y. Zhang, and R.L. Parsons*

6: Vol. 42: No.2: June 2011: ISSN 0046-5828

Field Measurements on Piled Rafts with Grid-Form Deep Mixing Walls on Soft Ground
1-10 *by Kiyoshi Yamashita, Junji Hamada and Takeshi Yamada*

Static Axial Reciprocal Load Test of Cast-in-place Nodular Concrete Pile and Nodular 11-19 **Diaphrgm Wall** *by K. Watanabe, H. Sei, T. Nishiyama and Y. Ishii*

Vertical Load Test and Settlement Analysis of Cast-in-place Concrete Nodular Piles 20-28 **Supporting a High-Rise Building** *by N. Suzuki and T. Seki*

Extended Use of Spring Hammer Rapid Load Testing 29-42 *by K. Matsuzawa and T. Matsumoto*

Push-up Load Tests Using Uncrushable Particles and Its DEM Analyses 43-55 *by SuriyahThongmunee, Shun-ichi Kobayashi and Tatsunori Matsumoto*

On Design and Construction of Pile Group Foundation of Taipei 101 56-69 *by Ching-Han Yu*
Capacity versus Deformation Analysis for Design of Footings and Pile Foundations 70-77 *by Bengt H. Fellenius*

Pile Raft Foundations for Tall Buildings 78-84 *by H.G. Poulos, J.C. Small and H. Chow*

Foundation Design of the 151 Story Incheon Tower in a Reclamation Area 85-93 *by Ahmad Abdelrazaq, Frances Badelow, Sung Ho-Kim, Harry G. Poulos*

7: Vol. 42: No.3 : September 2011: ISSN 0046-5828

Building Damage Assessment for Deep Excavations in Singapore and the Influence of Building Stiffness
by K.H. Goh and R.J. Mair

Concept and Design Methodology of Redundancy in Braced Excavation and Case Histories
by G. Zheng, X.S. Cheng, Y. Diao, and H.X. Wang

Three-Dimensional Deformation Behavior of an Over-sized Excavation in Shanghai Clay
by Y. M. Hou, J. H. Wang and D-S. Jeng

Numerical Study on the Movement of Existing Tunnel Due to Deep Excavation in Shanghai
by J. J. Chen, J. H. Wang, G. W. Xiang, S. L. Wen, and Y. Du

Observed Performance of Diaphragm Wall Construction
by C.Y. Ou and L.L. Yang

Performance of Construction with New Pneumatic Caisson Method in Shanghai Soft Ground
by F.L. Peng and H.L. Wang

Technologies of Micro-disturbance Construction of Pipe-Jacking
by W. Q. Ding, B. Li, S. L. Yuan and J. K. Ge

Design and Construction of InJe Tunnel, the Longest Road Tunnel of Korea
by S. M. Cho, S. D. Lee, and Y. J. Kwon

Geotechnical Engineering:

SEAGS-AGSSEA JOURNAL

List of Guest Editors and Topics: Years 2011- 2014

1: Year 2011

March Issue: Geosynthetics: Prof. Jie Han:

Prof. Jie Han, the Guest Editor is a Professor at Department of Civil, Environmental, and Architectural Engineering at the University of Kansas in the United States. He received his Ph.D. degree in Civil Engineering from the Georgia Institute of Technology in 1997 and has been a professional engineer in Georgia since 1998. Dr. Han was a senior engineer and manager of technology development at Tensar Earth Technologies, Inc., a leading geosynthetic manufacturer in the world, from 1997 to 2001. Prof. Han's research and practical experiences have dealt with geosynthetics-reinforced earth structures, ground improvement, pile foundations, and pavement applications Prof. Han has coauthored three technical books, edited two ASCE Geotechnical Special Publications, and published more than 150 peer-reviewed journal papers and conference papers (a large portion on geosynthetics). Prof. Han is currently serving as the Technical and Proceedings Co-chair for the GeoFrontiers 2011 Conference to be held in Dallas, Texas, USA from March 13 to 16, 2011, which is jointly organized by the ASCE Geo-Institute, the Industrial Fabrics Association International, the North American Geosynthetic Society, and the geosynthetic industry. Prof. Han serves as a member on the editorial boards for four major international journals in geotechnical engineering, the ASCE Geosynthetic and Ground Improvement Committees, and TRB A2K07 Committee on Geosynthetics.

June Issue: Prof. Tatsunori Matsumoto: Guest Editor on Foundations

A special issue on Deep Foundations is also planned and to be edited by Prof. Tatsunori Matsumoto with the assistance of Dr. Der Wen Chang and this is expected in June 2011. Professor Harry G. Poulos, Prof. Bengt Fellenius and several others are expected to contribute in this issue together with Prof. Tatsunori Matsuoka.

Prof. Matsumoto is now with Kanazawa University in Japan for nearly 32 years. He was educated at the Kanazawa University and received his Doctoral Degree from Kyoto University for his work on steel pipe piles in 1989. He has extensive research and practical experience on piled foundations and piled raft foundations. Prof. Matsumoto has a Shake Table Facility for the study of dynamic and earthquake type

of behaviour of piled foundations. He has also worked on the centrifuge with pile groups and piled raft foundations in collaboration with Taisei Corporation. His research work on piled raft foundations range from the simplified calculation methods of Poulos - Davis and Randolph (PDR Method), Burland's method to approximate computer based methods such as the strip on spring and plate on spring approaches and hybrid methods. He has also worked on more rigorous method using boundary elements and finite elements. Prof. Matsumoto also has wide experience in the seismic design of raft and piled raft foundations. Prof. Matsumoto is one of the authors of the computer software PRAB—Piled Raft Analysis with Batter Piles. With this software piled raft foundation can be analyzed with vertical and horizontal loads as well as moment.

September Issue on Deep Excavations: Prof. Chang-Yu Ou

This special issue will have papers from China, Taiwan, Bangkok, Hong Kong, Singapore etc

Prof. Chang-Yu Ou received his Bachelor's Degree in Engineering in 1977 from National Cheng-Kung University in Taiwan and his Masters and Doctoral Degrees from Stanford University in 1984 and 1987 respectively. He has focused on studies of soil behavior and excavation problems since beginning to teach in a university and has published many journal and conference papers concerning the subjects. At the same time, working with industrial builders, he has also taken part in many large-scale excavation projects and accumulated experience in analysis and design. Supported by study results and analysis experience, he has opened a course on deep excavation at the university. He is currently the Dean of engineering at the National Taiwan University of Science and Technology, Taipei, Taiwan. He was also the Director of Ecological and Hazard Mitigation Engineering Research Center of the National Taiwan University of Science and Technology, Taipei, Taiwan. He was also a Visiting Professor at University of California, Berkeley. His areas of interest are deep excavations, soil behaviour, soft ground tunneling and ground improvement.

December Issue on Soil Behavior: Dr. Dariusz Wanatowski

This issue will have articles from researchers in Nottingham, UK, Singapore, Bangkok, Australia, Japan and many other countries. From Japan, Prof. Satoru Shibuya's group will make contributions.

The editor, Dr Dariusz Wanatowski is a Lecturer in Geomechanics in the Department of Civil Engineering at the University of Nottingham. He graduated in Civil Engineering from Poznan University of Technology, Poland in 1999. Between 1999 and 2001 he worked as a teaching and research assistant at the same university where he was lecturing soil mechanics and foundation engineering courses. He was also involved in several research projects, including effects of various improvements of subgrade on its bearing capacity and experimental investigation of engineering properties of various organic soils. He obtained his PhD from Nanyang Technological University in 2006. Prior to joining the Nottingham Centre for Geomechanics in February 2006 Dr Wanatowski also worked as a researcher at NTU on effects of

strength and stiffness anisotropy of geomaterials on the stability and deformation of tunnels. Dr Wanatowski's general research interests are focused on experimental geomechanics, particularly strain softening and instability behavior of granular soils, strain localization in sands, strength and stiffness anisotropy of geomaterials, and effects of intermediate principal stress on the strength and deformation characteristics of soils. He has consulting experience in the areas of laboratory and in situ testing of soils. He is also an Honorary Secretary for East Midlands Geotechnical Group in the UK.

2: Year 2012

March Issue:Advanced Unsaturated Soil Mechanics: Prof. Charles W.W. Ng

Professor Charles W.W. Ng is a Professor at the Department of Civil and Environmental Engineering, the Director of Geotechnical Centrifuge Facility and an Associate Dean of Engineering at the Hong Kong University of Science and Technology. He obtained his Ph. D from the University of Bristol, UK in 1992; and subsequently joined the University of Cambridge as a Research Associate before returning to Hong Kong in 1995. He was elected as an Overseas Fellow at Churchill College, Cambridge, in 2005. Professor Ng is a Charted Civil Engineer (CEng) and Fellow of the Institution of Civil Engineers (FICE), the American Society of Civil Engineers (FASCE), the Hong Kong Institution of Engineers (FHKIE) and Hong Kong Academy of Engineering Sciences (FHKEng). Recently he has been elected as Chang Jiang Scholar (Chair Professorship) by the Ministry of Education in China and appointed as a Board Member of the International Society of Soil Mechanics and Geotechnical Engineering. Currently he is Associate Editor of the *Canadian Geotechnical Journal.* He has published widely on slope instability problems, behavior of saturated and unsaturated soils, soil-structure interaction problems such as tunnels, piles and deep excavations. He is the main author of two reference books including *Soil-Structure Engineering of Deep Foundations, Excavations and Tunnels* and *Advanced Unsaturated Soil Mechanics and Engineering.*

June Issue : Geotechnical Earthquake Engineering: Prof. Ikuo Towhata

Prof. Ikuo Towhata had his engineering education at the prestigious Tokyo University in Japan and is currently a Professor in the Department of Civil Engineering. Tokyo University is traditionally very strong in Soil Dynamics, Machine Foundations and Geotechnical Earthquake Engineering now for several decades. Also recently, Prof. Towhata has written a comprehensive and scholarly book in this discipline (see Geotechnical Earthquake Engineering, 2008: publisher Springer). Prof. Towhata was also the Editor in Chief of the well known Journal, Soils and Foundations. He is an active member of several national and international committee

on landslides, earthquake engineering. A recipient of several prestigious awards, Prof. Towhata's interest in Geotechnics is very wide and are on deformation characteristics of sands, dynamic analysis of earth structures, soil improvement by densification and grouting, stability of slopes and seabeds under static and dynamic conditions, landslides and debris flows, seismic performance based design of geotechnical structures. Author of more than 250 publications, Prof. Towhata has lectured in many leading universities in most continents.

September Issue : Geosynthetics and Sanitary Landfills: Prof. Malek Bouazza

Prof. Malek Bouazza is very prominent in technical and professional society activities and serves on a number of international technical committees. Currently, he is a member of the International Geosynthetics Society (IGS) council and chair of the Asian Activities Committee of the International Geosynthetics Society. He is a core member of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE) Technical Committee No5 (TC5) on Environmental Geotechnics, Vice-President of the Australasian Chapter of the International Geosynthetics Society (ACIGS), co-chair of the International Geosynthetics Society Education Committee and a member of the Standard Australia committee C20 on Geosynthetics. He is editorial board member of 5 International Journals and very active as a reviewer for several international journals.

Dr. Bouazza has published widely in international journals and refereed conferences and is the author or co-author of more than 180 refereed publications... His skills and experience in the area of waste containment facilities and geosynthetics are well recognized in Australia and abroad. He has been invited to deliver and contribute to several keynote lectures and state of the art reports in international conferences in Africa, Asia, Europe and North America, and delivers short courses on geosynthetics, and liners and cover systems for waste containment facilities on a regular basis locally and internationally. In addition to his academic commitments, Dr. Bouazza gives specialist advice for the industry both nationally and internationally.

December Issue: In-situ Tests and Instrumentation: Tom Lunne, NGI & Prof. Don De Groot

Tom Lunne educated in Heriot-Watt University in UK and in University of California Berkeley, is currently Technical Advisor and Manager of the Offshore Soil Investigations at NGI. He has wide geotechnical engineering background from both consulting and research. Major Fields of work relate to: Laboratory testing, In situ testing, Field observations, Evaluation of soil parameters; Planning, specifying and managing large offshore soil investigations. Tom has worked in major projects in

Brazil, Benin, Denmark, Great Britain, India, Italy, Malaysia, Sweden, USA, Latvia, Mexico, Holland, Venezuela and Iceland. Among other projects, his activities have been with Duyong and Pulai Fields Shallow Gas Studies, Malaysia; Soil investigation Keilisnes, Harbour, Iceland; Zelazny Most Tailings Dam Poland; Tunu and SISI Shallow Gas Studies, Indonesia; and DeRuyter GBS soil investigation, Holland.

Tom has given invited lectures and presentations at conferences and courses in USA, Canada, Brazil, France, Poland, Italy, Norway, Sweden, India, Latvia, Lithuania, Iceland, Ireland, Holland, Japan, Great Britain, Australia, Vietnam, Malaysia, Thailand, Singapore, Indonesia, Portugal, and Venezuela. He is a Core Member of Committee on In Situ Testing, TC-16,; International Society of Soil Mechanics and Foundation Engineering (1982-todate); Member of Scandinavian Committee on Field Investigations, 1993-2004; Chairman of Norwegian Committee on Field Investigations, 1993-2004; Member of Committee of European Standard of CPT, (2001 to date).

Author or co-author of more than 100 papers, publications and technical notes to professional journals and conferences, Tom is the main author of the popular textbook on Cone Penetration Tests.

Dr. Don DeGroot: Dr. Don J. DeGroot is a professor in the Department of Civil and Environmental Engineering at the University of Massachusetts Amherst and a registered Professional Engineer in the USA. He received his Doctor of Science degree in geotechnical engineering at the Massachusetts Institute of Technology in 1989. His teaching, research and consultancy experience is primarily in the area of soil behavior and environmental geotechnics with an emphasis on laboratory and field measurements for site characterization programs. Dr. DeGroot has been a Principal/Co-Principal Investigator on research projects sponsored by the USA DOD, FHWA, MassDOT, NCHRP, NSF, NRL and VTrans. He is currently PI of the $2.4 million NSF PIRE project on "Developing International Protocols for Offshore Sediments and their Role in Geohazards: Characterization, Assessment, and Mitigation." He has published refereed research findings in many of the major geotechnical engineering journals, ASCE Geotechnical Special Publications, ASTM Special Technical Publications and TRB publications. National and international conferences activities include several Keynote and State-of-the-Art papers and presentations. He has served on the editorial boards of the *Journal of Geotechnical and Geoenvironmental Engineering* and the *Geotechnical Testing Journal* and served as Chair of the ASCE Geo-Institute *Soil Properties and Modeling Committee*. Teaching and research awards include the James L. Tighe Civil Engineering Distinguished Teaching Award, United Technologies Corporation Outstanding Laboratory Teaching Award, Research Council of Norway Guest Researcher Fellowship, University of Western Australia Gledden Visiting Senior Fellowship, and the CEE Research Excellence Award.

Year 2013

March Issue : Modelling Soil Behaviour: Prof. Angelo Amorosi

Associate Professor Angelo Amorosi of the Technical University of Bari will be the Guest Editor for the Issue on Constitutive Equations for soil Behaviour. Angelo had his education including his Doctoral Degree from University of Rome. He was also a Visiting Academic at the University of Oxford with Prof. Guy Houlsby. The research interest of Angelo is on : (1) Experimental investigation on the mechanical behaviour of clayey soils with particular reference to 'very small strain stiffness' as observed by dynamic testing technique; evolution of the mechanical response due to: strain induced 'structure' (i.e. bonding) degradation process, isotropic or anisotropic stress histories and recent cyclic stress history; (2) Constitutive modelling of saturated soils in the frame of multi-surface hardening plasticity; application of thermo-mechanical principles to the modelling of elastic and elasto-plastic coupled behaviour of saturated soils; (3) Constitutive modelling of masonry and its application to model ancient structures; Computational plasticity, with particular reference to implicit/explicit integration schemes for complex constitutive models; (4) Finite Element analyses of geotechnical boundary value problems: excavation and tunnelling in clayey soils, interaction between underground excavations and surface masonry structures, seismic site effects, seismic behaviour of earth dams and tunnels.

An active researcher with several sponsored research projects sponsored by the Italian Ministry of Education, Angelo has been a Referee for reviewing articles in many journals: Geotechnique, Canadian Geotechnical Journal, International Journal of Numerical Methods in Engineering, Acta Geotechnica, Italian Geotechnical Journal, International Journal of Numerical and Analytical Methods in Geomechanics, Geotechnical and Geological Engineering.Angelo has published very widely in Geotechnique; ASCE, Journal of the Geotechnical and Geoenviromental Engineering Division; International Journal of Numerical and Analytical Methods in Geomechanics; Italian Geotechnical Journal; Soil Dynamic and Earthquake Engineering. He has also published extensively in International and Regional Conferences.

Muhunthan Balasingham

Balasingam Muhunthan, Ph.D., P.E., F. ASCE, is Professor of Geotechnical Engineering in the Department of Civil and Environmental Engineering at Washington State University in Pullman, WA, USA. He is also the Founder and Director of the Washington Center for X-ray Computed Tomography established using grant funds from the US National Science Foundation and Murdock Trust Foundation. He has held visiting professorships at Cambridge University, the University of Auckland, and the Georgia Institute of Technology. Dr. Muhunthan received his undergraduate degree in Civil Engineering from the University of Peradeniya, Sri Lanka, and his MS and Ph.D. in Civil Engineering from Purdue University. Dr. Muhunthan's expertise is in the areas of computational and experimental geomechanics, critical state soil mechanics, unsaturated soil mechanics, multi-scale modeling of materials, thermomechanics, bifurcations and instabilities in geomechanics, microstructure characterization and simulation of geomaterials and micromechanics of soils. He has also worked on a wide range of field problems in geotechnical engineering including landslides, dam failures, micropiles, horizontal

drains for slopes, and rock fall protection measures. Dr. Muhunthan has received several national and international awards for his scholarly accomplishments. He is a recipient of all of the three top CEE Departmental awards at WSU; Outstanding Teaching, Excellence in Research, and the Leon Luck Most Effective Professor Awards. He also received the Outstanding Teacher Award from the College of Engineering and Architecture at WSU, the Crampton Prize by the Institution of Civil Engineers, UK, an International Fellowship Award from the National Science Foundation, Fellowships from Churchill College Cambridge, Purdue University, and Merit Scholarship from Peradeniya University. Dr. Muhunthan is a member of the Soil Properties and Modeling Committee of ASCE and serves on the editorial advisory board of the International Journal of Geomechanics. He was an editor of the Geotechnical News Magazine, has chaired many national and international conferences, and has presented a number of invited lectures in constitutive modeling of geomaterials.

Dr Hossam Abuel-Naga

Dr. Abuel-Naga has been appointed as Senior Lecturer in Geotechnical Engineering, School of Mechanical, Aerospace, and Civil Engineering, The University of Manchester, in 2011. Before, he was working as Senior Lecturer in Geomechanics Group, Department of Civil and Environmental Engineering, The University of Auckland, New Zealand. From 1995 to 2002, he worked for Misr Raymond Foundations, Egypt, specializing in design and construction of dewatering systems as well as soil investigation. In 2002, he joined the Asian Centre for Soil Improvement and Geosynthetic, Thailand, as Research Engineer where he worked on effective utilization of geosynthetics for environmental preservation and to mitigate existing geotechnical problems in Asia and the Pacific. From 2006 to 2008, he worked as a Research Fellow at Monash University, Australia.

Dr Abuel-Naga’s research area is focused on soil behaviour under multi-physical coupled processes. Applications of this include nuclear waste disposal technology, methane hydrate mining technique, heat exchangers built-in in building foundations, ground improvement, landfill lining system, petroleum and other energy resource engineering, pavement thermo-chemo-mechanics, dynamics of pore space in agricultural soils, soil weathering, and more.

Dr. Abuel-Naga's research output includes about 50 publications during the last 5 years where 50% of them were appeared in international journals and one of his journal papers was given an award in 2008. Moreover, his research activities are recognized at the international level. He serves as a reviewer for most of A+ journals in his field. Furthermore, he was invited to serve as a panellist in the review of NSF-CAREER proposals submitted to the Geomechanics and Geomaterials Program and the Geotechnical Engineering program, USA. Finally, he is a member of the research team that won the prestigious NZ-Marsden Fund in 2010 regarding the behaviour of methane hydrate sediments.

June Issue: Numerical Analysis

Prof. Akira Murakami received his BS (1978) at the Agricultural Engineering Department; MS (1980) at the Civil Engineering Department, and Dr. Agr. (1991) from

Kyoto University (KU), respectively. In 1982, he became an Assistant Professor at the Agricultural Engineering Department of KU, and was promoted to an Associate Professor of KU in 1994. He moved to Okayama University with a promotion to Full Professor in 1999. After staying in Okayama for just 10 years, he moved back to a Full Professor of KU in 2009. He serves as the Vice President of the Japanese Geotechnical Society (JGS), the Board Member of the Japanese Society of Irrigation, Drainage and Rural Engineering (JSIDRE), and the International Association for Computer Methods and Advances in Geomechanics (IACMAG), and also is a core member of TC103 of ISSMGE and a member of the Multidisciplinary International Society on Inverse Problems in Science and Engineering. He had acted as the Secretary of TC34 of ISSMGE for two terms and gave a General Report of Numerical Methods at 16ICSMGE held in Osaka. He is the recipient of the Japanese Society of Civil Engineering (JSCE) Paper Award (1996), the JSIDRE Sawada Prize (2007), the JGS Best Accomplishment Award (2008), the JSIDRE Best Paper Award (2010), and is a Fellow of JSCE. His research interests include the data assimilation, inverse problem, finite element methods, mesh free methods, and DEM in geomechanics.

Prof. Oka is Professor of Civil and Earth Resources Engineering at Kyoto University in Japan. He has many years of experience in geomechanics with special emphasis on constitutive modeling of geomaterials, liquefaction analysis, strain localization problems and experimental works, numerical modeling of multi-phase materials such as chemo-thermo-hydro-mechanical modeling of Methane hydrate containing ground. His research expertise covers engineering applications such as soil liquefaction, consolidation and excavation problems with theoretical and experimental approach. Prof. Oka has particular interest in the viscoplastic modeling of geomaterials and related strain localization behavior. He gave a special lecture at the plenary session of 16th ICSMGE on computational geomechanics in 2005. He has published more than 200 papers in this field and has received many awards from the Japanese Geotechnical society (2005), Japan Society of Civil Engineers (1993), and IACMAG (1997, 2006). He has been serving as a chair of TC34 of ISSMGE on Prediction and Simulation Methods in Geomechanics and chaired the 4th International Workshop on Strain Localization and Bifurcation Theory for Soils and Rocks (1997), the ISSMGE International Symposium on Deformation and Progressive Failure in Geomechanics (1997), and the International Symposium on Prediction and Simulation Methods for Geohazard Mitigation by JGS and ISSMGE (2009), the 46th. Japan National conference on geotechnical Engineering(2011). He is currently serving as EBM of the *International Journal of Numerical and Analytical Methods in Geomechanics, Computers and Geotechnics* and the *International Journal of Geomechanics and Geoengineering*.

Prof. Helmut F. Schweiger

(Graz University of Technology)

Helmut obtained his Ph.D. form the University College of Swansea, UK and teaches courses on Advanced Soil Mechanics and Computational Geomechanics at the Graz University of Technology, Austria. He has over 15 years experience in development and application of the finite element method in geotechnics. As a member of several international committees Helmut is involved in formulating guidelines and recommendations for the use of finite elements in practical geotechnical engineering.

Dr. Dariusz Wanatowski

ThiThe editor, Dr Dariusz Wanatowski is a Lecturer in Geomechanics in the Department of Civil Engineering at the University of Nottingham. He graduated in Civil Engineering from Poznan University of Technology, Poland in 1999. Between 1999 and 2001 he worked as a teaching and research assistant at the same university where he was lecturing soil mechanics and foundation engineering courses. He was also involved in several research projects, including effects of various improvements of subgrade on its bearing capacity and experimental investigation of engineering properties of various organic soils. He obtained his PhD from Nanyang Technological University in 2006. Prior to joining the Nottingham Centre for Geomechanics in February 2006 Dr Wanatowski also worked as a researcher at NTU on effects of strength and stiffness anisotropy of geomaterials on the stability and deformation of tunnels. Dr Wanatowski's general research interests are focused on experimental geomechanics, particularly strain softening and instability behaviour of granular soils, strain localization in sands, strength and stiffness anisotropy of geomaterials, and effects of intermediate principal stress on the strength and deformation characteristics of soils. He has consultingexperience in the areas of laboratory and in situ testing of soils. He is also an Honorary Secretary for East Midlands Geotechnical Group in the UK.

(3) Role of Non-destructive Testing in Deep Foundation : Guest Editors –Prof Tatsunori Matsumoto & Prof Der Wen Chang

Prof. Matsumoto is now with Kanazawa University in Japan for nearly 32 years. He was educated at the Kanazawa University and received his Doctoral Degree from Kyoto University for his work on steel pipe piles in 1989. He has extensive research and practical experience on piled foundations and piled raft foundations. Prof. Matsumoto has a Shake Table Facility for the study of dynamic and earthquake type of behaviour of piled foundations. He has also worked on the centrifuge with pile groups and piled raft foundations in collaboration with Taisei Corporation. His research work on piled raft foundations range from the simplified calculation methods of Poulos - Davis and Randolph (PDR Method), Burland’s method to approximate computer based methods such as the strip on spring and plate on spring approaches and hybrid methods. He has also worked on more rigorous method using boundary elements and finite elements. Prof. Matsumoto also has wide experience in the seismic design of raft and piled raft foundations. Prof. Matsumoto is one of the authors of the computer software PRAB—Piled Raft Analysis with Batter Piles. With this software piled raft foundation can be analyzed with vertical and horizontal loads as well as moment.

Prof. Der-Wen Chang teaches at The Department of Civil Engineering of Tamkang University (TKU), Taipei, Taiwan for over 19 years. He received Ph.D. in Civil Engineering at The University of Texas at Austin in 1991 and MS in Civil Engineering at Michigan State University in 1987. Prof. Chang has supervised the research work of over 60 Master Thesis

and 3 Ph.D. Thesis at TKU, and published more than 160 articles as the Journal, Conf. papers and reports. Nearly all his research studies are related to numerical modeling and dynamic analyses for the geotechnical structures. His research experiences include NDT methods on pavements, seismic behaviors of the pile foundation, constitutive modeling of the soils, and recent study on the performance based design for the earth structures. Prof. Chang is also the visiting Professor at University of Washington at Seattle, US in 2008 and LN Gumilyov Eurasian National University at Astana, Kazakhstan for research studies in 2010. Other than the research works, Prof. Chang devotes himself a great deal to serve the communities. He involves heavily and indeed shows his good performance in the public works related to education and constructions. Prof. Chang is now serving as the Secretary General of Chinese Taipei Geotechnical Society, GC member of SEAGS, Editorial Panel for SEAGS/AGSSEA J. of Geotechnical Engineering, Committee members for Public Construction and Hazard Prevention in Taipei City and Taipei County governments. He will continue to work in the academia and hoping that his studies can better improve the civil engr. technologies.

December Issue: Repeated Loading Soil Behaviour in Geotechnical Engineering Practice

Robert Lo, Hamid Nikras & PEERAPONG JITSANGIAM

Lo Sik-Cheung Robert

S.R. Lo got his Bachelor degree from University of Hong Kong and his PhD from University of New South Wales. He spent a number of years with industry, leading design teams on mega-infrastructure projects, before taking up an academic career. He is currently an Assoc Professor of the School of Engineering and IT, UNSW, ADFA campus.

Lo has a range of research interests, with current research projects spans from experimental studies to numerical modelling, and basic soil behaviour to reinforced soil structures. He has published over 150 research articles in refereed journals and conference and 3 research book chapters. One of his papers on non-linear ground structure interaction was awarded the Telford Price, UK. In addition to being an active academic researcher, Lo maintains closed ties with industry and has contributed to a number of high profile projects in Australia. He has a number of honorary international appointments including being members of International Technical Committees (TC-9 on reinforced soil and TC39 on coastal disaster mitigation).

HAMID NIKRAZ

Prof. Hamid Nikraz, (Head of the Department of Civil Engineering and Curtin-PRG) has particular expertise in pavement materials and soil stabilisation techniques. Prof.Hamid has a wide range of expertise in Geotechnical Engineering and Pavement Engineering. He is recognised as an authority in the sustainable use of industrial by-products in geotechnical,

pavement and geopolymer concrete engineering, spanning research interests in Geomechanics, Soil Stabilisation, Pavement Design and Construction, and Waste Management. The outcomes of his research and that of the students and research staffs under his supervision have led to the publication of five book chapters, 83 papers in international refereed journals, more than 160 papers in refereed conference proceedings, and more than $A 5 million of the successful research grants.

PEERAPONG JITSANGIAM

Dr Peerapong is now a senior lecture and joined the Department of Civil Engineering at Curtin University since 2007. After graduating with a BEng (Civil Engineering) from Chiang Mai University, Thailand in 1996, he was trained as a geotechnical engineer, and completed a MEng from Chiang Mai University Thailand in 2001. In 2005, Dr Peerapong moved to Australia to pursue his PhD in civil engineering at Curtin University of Technology. He completed his PhD with Professor Hamid Nikraz in the title of "Performance, Evaluation, and Enhancement of red sand for road bases, embankments, and seawall fills" in 2007.Dr Peerapong's research has a strong emphasis on pavement and geotechnical Engineering. To date, much of his research has focused on characterisation of pavement materials and utilisation of potential by-products from industry in pavement construction based on the geotechnical engineering perspective. He is also interested in testing and modeling of pavement and mechanistic based pavement design. He has conducted several studies on stress dependency of aggregates and stabilised aggregates affecting response and performance of flexible pavement in base and sub base layers based on the Repeated Load Triaxial testing.

Year 2014

March Issue: Centrifuge Modelling of Geotechnical Infrastructures

Prof. B.V.S. Viswanadham

Prof. Viswanadham obtained his PhD (Dr.-Ing.) from the Ruhr-University of Bochum, Germany in November 1996. He obtained his Bachelor degree in Civil Engineering from the Andhra University, Visakhapatnam, India in 1987 and thereafter did his Master of Technology in Civil Engineering with Geotechnical Engineering as a specialization from the Indian Institute of Technology Madras (IIT Madras), Chennai, India in 1989. Before joining the Indian Institute of Technology Bombay (IIT Bombay) in December 1998, he worked as a Senior Project Officer, Department of Ocean Engineering, IIT Madras and as a Scientist, Geotechnical Engineering Division, Central Road Research Institute, New Delhi for about eleven years. Currently, Prof. Viswanadham is working as a Professor in the department of Civil Engineering with geotechnical engineering as a specialization. The research interest of Prof. Viswanadham is on: (1) Centrifuge model studies on the behaviour of geotechnical structures; (2) Environmental Geotechnics with a special reference to landfill waste containment systems; (3) Ground improvement using Geosynthetics and studies on the behaviour of geosynthetic reinforced soil structures; (4) Natural hazard mitigation – landslides and slope protection; (5) Bulk utilization of waste materials especially coal ash. He has published 120+ technical papers in peer-reviewed international journals/International conferences/National conferences.

Prof. Viswanadham is a Co-ordinator of the National Geotechnical Centrifuge Facility available at IIT Bombay. He has focused in disseminating knowledge on centrifuge modelling to Students/Professionals through courses (for both undergraduate and post-graduate levels) and continuing education programme courses at IIT Bombay with an aim to establish centrifuge modelling technique as an essential tool for studying problems in geotechnical and Geoenvironmental Engineering. Prof. Viswanadham is the Member of the Technical Committee for Physical Modelling on Geotechnics (TC104) of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE), and the Chair of the Ist Asian regional workshop on the Centrifuge Modelling for Geotechnical Infrastructure to be held in IIT Bombay in November 14-16, 2012.

Prof. Christophe Gaudin

Prof. Gaudin graduated with a Doctorate in Engineering Science from the Ecole Centrale de Nantes in November 2002. He subsequently joined the Centre for Offshore Foundation Systems (COFS) in July 2003 and was appointed as Manager of the UWA centrifuge facilities. He was promoted Research Professorial Fellow in 2009 and hold since the position of Deputy Director of COFS. His research interests cover offshore anchoring systems and shallow foundations, pipeline-soil interaction and similitude principles associated with centrifuge modelling, for which he has authored 90+ referred publications.

As manager of the UWA centrifuge facilities and a team of 8 technicians, Prof Gaudin has focused on establishing centrifuge modelling techniques as an essential tool to assist the offshore industry in developing and designing foundation solutions. He has built a strong relationship with the offshore industry, raising over $3.5M of research funding and producing 50+ consulting reports.

Since 2010, Prof. Gaudin is the Chair of the Technical Committee for Physical Modelling on Geotechnics (TC104) of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE), and the Chair of the 8th International Conference on Physical Modelling in Geotechnics to be held in Perth in 2014. His goals as TC Chair for the current term are notably to increase awareness of centrifuge modelling techniques and capabilities in the geotechnical engineering community, both in academia and industry, and to support the emergence of new centrifuge centres around the world.

Prof. Tom Schanz

Prof. Tom Schanz received his PhD at ETH Zurich on the mechanical behavior of granular mixture. This period followed a PostDoc stay at Kagoshima University (Japan). Thereafter he received his habilitation at University Stuttgart (Germany). After ten years as Professor at Bauhaus-University Weimar (Germany) he is nowadays head of the Laboratory of Foundation Engineering, Soil- and Rock Mechanics at Ruhr-University Bochum, Germany. The laboratory is running currently two geotechnical centrifuges since about 30 years. Research projects involving these equipments cover all subjects from environmental engineering, natural hazard assessment and nowadays problems involving unsaturated soil mechanics. Beside the centrifuge center the laboratory is running an excellent equipped soil dynamics and clay lab. Tom’s research papers cover a wide range of theoretical, experimental and numerical subjects, as unsaturated soil mechanics, physico-chemical clay behavior, constitutive models, earthquake engineering and application of numerical methods to geomechanical problems.

Tom is member of international committees as Unsaturated soils and European Numerical methods, he is chairman of the German committee for Numerical Methods in Geotechnics.

DR. DOMINIC ONG EK LEONG

Dr. Dominic Ong received his Bachelors Degree of Civil Engineering from University of Australia and his Ph D from National University of Singapore. An active Geotechnical consultant in Malaysia, Dominic is also associated with Swinburne University of Technology, Sarawak Campus. Dominic has a wide range of practical and research interest in Effect of pile behavior subject to lateral soil movement & soil-structure interaction; Deep foundation design; Underground construction, deep excavation, pipe-jacking and micro-tunneling,: Embankment dam construction ; Settlement, slope stability and seepage analysis; Finite element modeling technique; Ground improvement and application of geosynthetics ; High-gravitational geotechnical centrifuge modeling technique. He has worked on numerous major projects in Malaysia as a consultant.

June Issue: Geotechnical Aspects of Dams: Guest Editor Prof. Pedro Pinto

Prof. Pedro Seco Pinto is Professor of Geotechnical Engineering of University of Coimbra (since 1994) and Invited Professor of University New of Lisbon (since 1983). He was Invited Lecturer in University of California (1992-1994). He served as Chairman of TC4 “Earthquake Geotechnical Engineering“(ISSMGE) (1994-1999) and President of Portuguese Geotechnical Society (1996-2000). He was Head of Division at LNEC from 1986- 2004. Pedro was President of ISSMGE from 2005-2009 and Vice-President for Europe 2001-2005.

He has acted as United Nations Consulting for Design, Instrumentation and Surveillance Technology for Dams and other Hydraulic Structures. He is a member of Portuguese Commission on Dams, Portuguese Commission on Dams Codes and Seismic Aspects of Dams Committee of ICOLD. He has been an active consultant working on major projects throughout Europe, Asia, Africa and South America. He is author or co-author of 300 technical reports and more than 100 papers for journals, national and international conferences. He is editor of proceedings for 4 international conferences on Earthquake Geotechnical Engineering and Environmental Geotechnics and contributed for four books. He has presented special lectures and state-of-the art reports and selected contributions in more than 60 countries in the 6 Regions.

His principal areas of interest include soil dynamics, earthquake engineering, embankment dams, special foundations, tunnelling and environmental geotechnics. He is a member of several national and international Societies, Technical Committees and Editorial Boards and has participated in several European Community Projects. He has been organizer and co-organizer of more than 15 national and international conferences, symposia and seminars. He has received many awards and honours.

September Issue: Offshore Geotechnics & Dredging

Prof William Van Impe

Emeritus Prof. William Van Impe had a distinguish career at Ghent State University starting with a Civil Engineering Degree in 1973 & Doctoral Degree in 1981. He was a past Vice President and President of ISSMGE. A John Mitchell Lecturer, William won many prestigious prize and awards: Manuel Rocha Award, Szechy Medal etc. William has been a Peer Reviewer for Ground Improvement Journal; ASCE Journal of Geotechnical and Geoenvironmental Engineering; International Journal of Geoengineering Case Histories; Founder and co-editor ,Journal of Geotechnics for Transportation Infrastructure. William had a very wide range of research interest spanning to 30 years in Ground improvement methods with special emphasis to dynamic compaction techniques; Deep foundations with special emphasis to screw piles ; it has resulted in the organisation of three International Conferences in Ghent Environmental geotechnics with special emphasis on waste mechanics and underwater geo- environmental issues; Lateral loading of pile groups resulting in a book in co-autorship met Prof. L. Reese, Texas, USA. Moreover the research guided in the Laboratory of Soil Mechanics under the Directorship of Prof. W. Van Impe focussed on : Seismic cone testing; Small strain laboratory testing; - Large strain consolidation theories; Geoenvironmental research topics (contaminant flow, barriers, …); Soft soil excavations; Dredging geotechnology; Soft soil improvement ; Contaminant flow through porous media; Long term stiffness of crushable sands.

Prof. W. Van Impe has been involved in a great number of uncommon geotechnical engineering projects all over the world, with some of the most relevant : Geotechnical dredging issues for man made islands (Jurong), Singapore ; Tunnelling under Orly airport, Paris, France – Smet Company; - Remediation of contaminated sites – Venice port – SGI, Torino, Italy; Stability problems of large decantation ponds at Couillet (Solvay) and at Ghent - Rhodia Chemie Company; Deep foundations all over the world, such as bored pile design, deep excavation stability, specific screw pile applications etc.; Lateral loading of piles; analysis of many case studies in the US; Quay walls and liquefaction in harbour of Dunquerke – France; Liquefaction problems in offshore conditions at Damietta harbour Egypt; Underwater dam in the harbour of Antwerp – Belgium; Messina strait bridge – foundation engineering concept evaluation committee; Deep excavations in soft underconsolidated clays – Russia; Many near shore geotechnical problems related to quay walls and dredging issues all over the world

William is the author of numerous papers, Conference Proccedings and books.

December Issue: Case histories of Ground Improvement in Soft Clays

Professor **Mounir Bouassida** is the leader of Geotechnical Engineering Research Team at National Engineering School of Tunis.His research focuses on ground improvement and behaviour of soft clays. To date his publications are 25 papers in international journals and six papers in national journals, 12 Keynote lectures and specialized publications, 80 papers in

international conferences and a French book on soil laboratory testing (distributed in 900 copies internationally). He signed a book project (to be edited in 2012) with J. Ross Publishing (USA) about the design of column reinforced foundation. M. Bouassida has edited five proceedings of international conferences. From 2001 to date he supervised nine defended PhDs and twenty four Master Degree.

As Fulbright scholar, M. Bouassida achieved a comprehensive novel methodology for the design of foundations on reinforced soils by columns. Prof. M. Bouassida is awarded the 2006 S. Prakash Prize (USA) for Excellence in Practice of Geotechnical Engineering. As invited professor he has taught the soil mechanics and ground improvement courses at: Ecole Centrale de Lille and Ecole des Mines de Douai (France), Faculté de génie at Sherbrooke University (Québec, Canada) and civil engineering department of Université Catholique de Louvain (Belgium). He created in 2008 SIMPRO consulting office in Geotechnical Engineering specialized in software elaboration. “Columns” software is the first product for designing foundations on reinforced soils by columns (www.simpro-tn.com).

Prof. Bouassida is the immediate VP of ISSMGE for Africa (2005-2009). Presently he is a member of Technical Oversight committee and Co-Chair of TC 306 “Geo-Engineering Education” of ISSMGE. He is member of editorial committees of International Journal of Geotechnical Engineering & Geotechnical and Geological Engineering journal. He is reviewer in International Journal of Numerical and Analytical Methods in Geomechanics, Journal of Geotechnical and Geoenvironmental Engineering, ASCE, International Journal of Geomechanics, ASCE and the European Journal of Civil and Environmental Engineering. From 2011 to 2013 he is appointed as adjunct professor at Sherbrooke university (Quebec, Canada).