RICHARD NANHUEI HWANG

NAME	:	Richard Nanhuei HWANG
PRESENT POSITION	:	Senior Specialist
DATE OF BIRTH	:	1943/09/29
NATIONALITY	:	Republic of China
LANGUAGE SKILL	:	Chinese (mother tongue), English (Fluent)
EXPERTISE	:	Geotechnical Engineering, Information Technology

EDUCATION

- Ph. D. University of California, Berkeley, California, U.S.A., 1974
- M.S.C.E. North Dakota State University, North Dakota, U.S.A., 1968
- B.S.C.E. National Taiwan University, Taiwan, R.O.C., 1964

PROFESSIONAL REGISTRATION

- APEC Engineer (Civil)
- IPEA Engineer (Civil)
- Registered Professional Engineer (Civil), Republic of China
- Registered Professional Engineer (Civil), Singapore
- Registered Professional Engineer (Geo), Singapore
- Accredited Checker, Singapore
-

PROFESSIONAL AFFILIATION

- Member, Southeast Asian Geotechnical Society, Bangkok, Thailand
- Member, Taipei Professional Civil Engineers Association
- Member, Chinese Institute of Civil and Hydraulic Engineering

HONOR

- 1970 National Science Foundation Fellowship, USA
- 2007 Excellent Technical Paper Award, Journal of GeoEngineering, Taiwan Geotechnical Society
- Lecturer, 7th Geotechnical Engineering Heritage Lectureship, 2009, Professional Geotechnical Engineers Association, Taiwan
- 2009 Excellent Technical Paper Award, Journal of GeoEngineering, Taiwan Geotechnical Society, Taiwan
- 2011 Heritage Award, Sino-Geotechnics Research and Development Foundation, Taiwan

SUMMARY OF EXPERIENCE

Dr. Hwang received his degree of Bachelor of Science in civil engineering from National Taiwan University in 1964, degree of Master of Science from North Dakota State University, North Dakota, USA, in 1968, and degree of Doctor of Philosophy from the University of California, Berkeley, California, USA, in 1974.

After receiving his master degree in 1968, Dr. Hwang joined Arthur G. McKee Company, Cleveland, Ohio, USA and worked on pipe stress analyses for several oil refinery plants in the North America for two years. He entered the University of California, Berkeley, California in 1970 for his doctorial study on a fellowship granted by the US National Science Foundation and was able to complete the study in 3 years. During this period, he worked as a research assistant under the supervision of the renowned Prof. Harry B. Seed and Prof. John Lysmer on seismic design of nuclear facilities. The computer software, FLUSH and QUAD4, developed as a result of his doctorial study is still widely adopted by the professionals for soil-structural interaction studies nowadays. Subsequent to his graduation, Dr. Hwang continued his research on seismology, earthquake engineering, and numerical analyses on soil-structure interaction problems while he worked for Harding-Lawson Associates, Woodward-Clyde Consultants and Mechanics Technology, Inc. and was involved in seismic analysis and design of many nuclear power plants and offshore structures.

In 1979, Dr. Hwang joined Kiso-Jiban Consultants, Inc., a well-established geotechnical company based in

Tokyo, Japan, as the manager of her Singapore Branch. In the subsequent years, he conducted studies on building foundations, in Singapore, Malaysia, Brunei, Sri Lanka, and Indonesia and was involved in the construction of many tall buildings in the Southeast Asian Region. He was also involved in reclamations and soil improvement works for Changi Airport in Singapore, Port Kalang and Port of Johore in Malaysia, and Balawan Port in Indonesia. In 1983, Kiso-Jiban won a project to provide consultancy services to the Singapore Mass Rapid Transit Corporation (now, Land Transport Authority) and, with his strong knowledge on local ground conditions and local practice, Dr. Hwang was appointed the project manager to led a team of engineers to serve the SMRTC on various geotechnical problems. This assignment continued for 6 years and within this period the team actively contributed to the successful completion of the Phases 1 and 1A constructions of the Singapore MRT System. Concurrent to this assignment, Dr. Hwang was appointed by Nanyang Technological University Adjunct Associate Professor in the period of 1987 to 1989 to give lectures on deep excavations, retaining structures and tunneling. This teaching job gave him much pleasure that he was able to pass his experience to students and obtain useful feedback.

Dr. Hwang was seconded to Fukien Consultants, Inc. of Japan in 1989 and 1990 to serve as Chief Design Coordinator of Design Lot DN171 of the Taipei Rapid Transit Systems and was in charge of the detailed design of civil structures and electrical/mechanical systems for a 3.7 km section of the Nangang Line including 3 underground stations and a 500m long underground pedestrian mall. In 1991, Dr. Hwang joined Moh and Associates, Inc., as Manager of Geotechnical Engineering Specialty Consultants Project serving the Department of Rapid Transit Systems of the Taipei City Government on the design and construction of Nangang, Banqiao, Xindian and Zhonghe Lines of the Taipei Rapid Transit Systems with a total length of 34.6 km and 32 underground stations. This assignment is similar to the one he had when he was in Singapore and served SMRTC. The project was extended by 3 times and lasted for more than 10 years. Concurrent to this assignment, Dr. Hwang was assigned in 1995 as Project Manager for Design Lot 1OFD04C of the Orange Line of Kaohsiung Mass Rapid Transit System and the scope included detailed design of three underground stations and the bored tunnels linking these stations.

With his strong interest and background on computers and computer applications, Dr. Hwang led Information Center of Moh and Associates as Director of the Center for 6 years and actively promoted the use of computers. Under his leadership, a comprehensive intranet was established to facilitate information sharing. The software package developed under his supervision for instrumentation and monitoring was awarded a silver plate by the Ministry of Interior in a campaign for promoting office automation. His field of expertise extended further into geographic information systems after he was appointed Manager of Geomatics Department which won several large scale projects including mapping of the potential geological hazards for the Central Geological Survey of Taiwan and compiling information on potential geological hazards such as earthquakes, floods and debris flows for the entire Taiwan Island for hazard prevention studies.

Dr. Hwang has authored and co-authored more than 140 technical papers on earthquake engineering, numerical analyses and seismic design, soil mechanics, geology, deep excavations, tunnelling and information technology. He was invited to give the 7th Heritage Lecture by Professional Geotechnical Engineers Association, Taiwan in 2009 and received Heritage Award from Sino-Geotechnics Research and Development Foundation, Taiwan

In consideration of the uncertainties and great risks involved in underground constructions, Dr. Hwang summarized his vast experience gained in his book, entitled “Underground Constructions and Risk Management”, which contains state-of-the-art technologies and is a valuable reference for professionals and a significant contribution to the betterment of the construction industry.

COMMITTEE PUBLICATIONS

1. Soil Dynamics Committee of American Society of Civil Engineers (1976). Liquefaction Problems in Geotechnical Engineering, Proc., ASCE Annual Convention and Exposition, Philadelphia, Pennsylvania, Sept 27- Oct 1, edited by Anderson, D. G., Hwang, R. N., and Stokoe, K. H.
2. High Speed Rail Bureau (1992), Seismic Design Criteria for High Speed Rail Project, Taipei, Taiwan (in Chinese)
3. Big Digs Around the World (1998), Proceedings, Big Digs Around the World Symposium, ASCE 1998

National Convention, Boston, Massachusetts

4. Chinese Tunnel and Tunneling Association (1998), Technical Specification for Shield Tunneling, edited by Fang, et al. (in Chinese)
5. Chinese Tunnel and Tunneling Association (2002), Design Criteria on Shield Tunnels, edited by Chuay, et al. (in Chinese)
6. Taiwan Geotechnical Society (2003), Difficult Cases in Geotechnical Engineering, edited by Fang, et. al. (in Chinese)
7. Architecture and Building Research Institute, Ministry of Interior (2004), Reference Specifications for Diaphragm Wall Constructions, edited by Chiu, et. al. (in Chinese)
8. Taiwan Geotechnical Society (2009), Case Histories of Difficult MRT Constructions, edited by Fang, et. al. (in Chinese)

RESEARCH PUBLICATIONS

1. Hwang, R. N. (1968). Lateral Earthpressures of Layered Media, M.S. Dissertation, College of Engineering, North Dakota State University, Fargo, North Dakota
2. Idriss, I. M., Lysmer, J., Hwang, R. and Seed, H. B. (1973). QUAD4 - A Computer Program for Evaluation the Seismic Response of Soil Structures by Variable Damping Finite Element Process, Report No. EERC 73-16, Earthquake Engineering Research Center, University of California, Berkeley, California
3. Lysmer, J., Udaka, T., Seed, H. B. and Hwang, R. N. (1974). Lush - A Computer Program for Complex Response Analysis of Soil-Structure Systems, Report No. 74-4, Earthquake Engineering Research Center, College of Engineering, University of California, Berkeley, California
4. Hwang, R. N. (1974). Seismic Response of Embedded Structures, Ph.D Dissertation, College of Engineering, University of California, Berkeley, California
5. Seed, H. B., Lysmer, J. and Hwang, R. N. (1974). Soil-Structure Interaction Analyses for Evaluating Seismic Response, Report No. 74-6, Earthquake Engineering Research Center, College of Engineering, University of California, Berkeley, California
6. Seed, H. B., Lysmer, J. and Hwang, R. N., (1975). Soil-Structural Interaction Analyses for Seismic Response, Journal of the Geotechnical Engineering Division, ASCE, v101, no. GT5, May
7. Hwang, R. N., Lysmer, J. and Berger, E (1975). A Simplified Three-Dimensional Soil-Structure Interaction Study, Proceedings, ASCE Specialty Conference on Structural Design of Nuclear Plant Facilities, New Orleans, Louisiana, December
8. Lysmer, J., Seed, H. B., Udaka, T. and Hwang, R. N. (1975). Efficient Finite Element Analysis of Seismic Structure-Soil- Structure Interaction, Proceedings, ASCE Specialty Conference on Structural Design of Nuclear Plant Facilities, New Orleans, Louisiana, December
9. Hwang, R. N. and Lysmer, J. (1981). Response of Buried Structures to Traveling Waves, Journal of the Geotechnical Engineering Division, ASCE, v107, no. GT2, February
10. Hwang, R., Quah, H. P. and Buttling, S. (1987). Measurements of Strut Forces in Braced Excavations, Proceedings, Singapore Mass Rapid Transit Conference, April 7-9, Singapore
11. Poh, K. B., Buttling, S. and Hwang, R. (1987). Some MRT Experiences of the Soils and Geology of Singapore, Proceedings, Singapore Mass Rapid Transit Conference, April 7-9, Singapore
12. Hwang, R. (1987). Jet Grouting for Tunneling in Soft Clays, Panel Discussion, Session 4, the 8th Asian Regional Conference on Soil Mechanics and Foundation Engineering, Kyoto, Japan, August 20-24

13. Hulme, T. W., Shirlaw, J. N. and Hwang, R. N. (1990). A Comparison of Cut-and-Cover with Bored Tunnels through Soft Clay in Singapore, Proceedings, the 10th Southeast Asian Geotechnical Conference, April 16-20, Taipei, ROC
14. Shirlaw, J. N., Poh, K. B., and Hwang, R. N. (1990). Properties and Origins of Singapore Boulder Bed, Proceedings, the 10th Southeast Asian Geotechnical Conference, April 16-20, Taipei, ROC
15. Hulme, T. W., Shirlaw, J. N., and Hwang, R. N. (1990). Settlements during the Underground Construction of the Singapore MRT, Proceedings, the 10th Southeast Asian Geotechnical Conference, April 16-20, Taipei, ROC
16. Todo, H., Hwang, R. N. and Hulme, T. (1992). Settlement of Underpinned Structures in Singapore, International Geotechnical Conference, New Technology for Foundation Engineering and Construction (NTFE92), Hanoi, Vietnam, October 1-3, pp.361-389
17. Hwang, R. N., Todo, H. and Hulme, T. （1992）. Underpinning of Structures for Construction of Singapore MRT (1992), Sino-Geotechnics, no. 40, December, pp.77-90, Taipei (in Chinese)
18. Chang, J. L., Chen, T. K., Chao, C. L. Yang, G. R. and Hwang, R. N. (1993). Compaction Grouting for Building Protection, Symposium of Taipei Metropolitan Rapid Transit Systems, Taipei, March
19. Wong, L. W., Yang, J. S., and Hwang, R. N. (1993). Building Protection for Deep Excavations, Symposium of Taipei Metropolitan Rapid Transit Systems, Taipei, March 17-18, pp.295-304
20. Moh, Z. C. and Hwang, R. N. (1993). Underground Construction of Taipei Transit Systems, The 11th Southeast Asian Geotechnical Conference, Singapore, May 5-8, pp.15-24
21. Moh, Z. C. and Hwang, R. N. (1993). Earth Pressures on Walls of A Deep Excavation, The 3rd International Conference on Case Histories in Geotechnical Engineering, St. Louis, Missouri, June 1-6
22. Moh, Z. C., Chou, L. L. and Hwang, R. N. (1994). Building Protection for Construction of Taipei MRT, The 13th International Conference on Soil Mechanics and Foundation Engineering, New Delhi, India, January 5-10, 1811-1814
23. Hwang, R. N. and Chen, C. H. （1994）. Back Analysis of Subsidence due to Filling, 2nd Young Asian Geotechnical Engineers Conference, June 27-July 1, Bangkok, Thailand, pp.201-210
24. Liu, K. F., Hwang, R. N. and Young, D. C. (1994). Analysis of Groundwater Record Subjected to Tidal Influence, Proc., the 7th Conference on Hydraulic Engineering, July, 8-9, Keelung, Taipei, pp E271-281 (in Chinese)
25. Moh, Z. C. Liao, C. L. and Hwang, R. N. (1994). Building Protection for Underground Works, GEOTROPIKA '94, Regional Conf. on Geotechnical Engineering, Malacca, Malaysia, August 22-24
26. Hwang, R. N., Kao, H. S., Kuo, K. J. and Chang, J. L. (1994). Response of Sandy Gravel Layers to Compaction Grouting, Sino-Geotechnics no.47, September, pp.107-120, Taipei (in Chinese)
27. Moh, Z. C., Yang, G. R. and Hwang, R. N. (1994). Response of Soft Soil to Compaction Grouting, Proc., International Symposium on Structures and Foundations in Civil Engineering, October, Hangzhou, China (in Chinese)
28. Chiang, K. W. and Hwang, R. N. (1994). Development and Application of A Geographic Information System, Proc., Symposium on Modern Engineering and Technology Seminar, December, Taipei, Taiwan, pp. 223-249 (in Chinese)
29. Chu, C. C. and Hwang, R. N. (1994). The Automation of The Geotechnical Instrumentation System, Proc., Symposium on Modern Engineering and Technology Seminar, December, Taipei, Taiwan, pp.251-281 (in Chinese)

30. Hwang, R. N., Fan, C. B. and Yang, G. R. (1995). Consolidation Settlements due to tunneling, Southeast Asian Symposium on Tunnelling and Underground Space Development, Bangkok, Thailand, January 18-19, pp.79-86
31. Hwang, R. N., Ju, D. H., Tsai, M. S. and Fang, Y. S. (1995). Soft Ground Tunneling in Taiwan, Proc., U.S./Taiwan Geotechnical Engineering Collaboration Workshop, January 9-11, Taipei, Taiwan, pp.13-26
32. Hwang, R. N., Wu, D. J. and Lee, C. J. (1995). Pore Pressure Response to Tunneling in Soft Clays, Southeast Asian Symposium on Tunnelling and Underground Space Development, Bangkok, Thailand, January 18-19, pp.33-40
33. Moh, Z. C., Chang, M. F. and Hwang, R. N. (1995). Load Transfer in Piles during Load Reversals, Proc., 10th Asian Regional Conference on Geotechnical Engineering, Beijing, China, August 29 - September 2, pp.207-210
34. Moh, Z. C., Hulme, T. W. and Hwang, R. N. (1995). Soft Ground Tunnelling for Singapore and Taipei MRT Systems, Bengt B. Broms Geotechnical Symposium, December 13-15, Singapore, pp313-332
35. Hwang, R. N., Fan, C. B. and Liao, C. C. (1996). Lateral Earth Pressures during Deep Excavations, Sino-Geotechnics, no. 53, February, Taipei, Taiwan, pp.25-34 (in Chinese)
36. Moh, Z. C., Ju, D. H. and Hwang, R. N. (1996). Ground Movements Around Tunnels in Soft Ground, Int. Conf. on Geotechnical Aspects of Underground Construction in Soft Ground, April 15-17, London, UK, pp.725-730
37. Hwang, R. N., Moh, Z. C. and Chen, M. (1996). Pore Pressures Induced in Soft Ground due to Tunnelling, Int. Conf. on Geotechnical Aspects of Underground Construction in Soft Ground, April 15-17, London, UK, pp695-700
38. Hwang, R. N., Shu, S. T., Lin, G. J. and Chuay, H. Y. (1996). Dewatering Scheme for Deep Excavations, Sym. on Deep Excavations and Underground Constructions, May, Taipei, Taiwan, pp.53-80 (in Chinese)
39. Hwang, R. N., Sun, R. L. and Ju, D. H. (1996). Settlements over Tunnels - TRTS Experience, 12th Southeast Asia Geotechnical Conference, May 6-10, Kuala Lumpur, Malaysia, pp.355-360
40. Moh, Z. C., Chuay, H. Y. and Hwang, R. N. (1996). Large Scale Pumping Test and Hydraulic Characteristics of Chingmei Gravels, 12th Southeast Asia Geotechnical Conference, May 6-10, Kuala Lumpur, Malaysia, pp.119-124
41. Moh, Z. C. and Hwang, R. N. (1996). Instrumentation for Underground Construction Projects, 12th Southeast Asia Geotechnical Conference, May 6-10, Kuala Lumpur, Malaysia, pp.113-129
42. Hwang, R. N. and Moh, Z. C. (1996). Information System in Constructions of Rapid Transit Systems, Cross-Strait Symposium on Rapid Transit Systems, June 25-26, Taipei, Taiwan (in Chinese)
43. Hwang, R. N., Wang, H. W., Chiou, H. S., Lee, C. C. and Chin, C. H. (1996). Geotechnical Engineering Information System for Deep Excavations, Sino Geotechnics, no. 55, August, Taipei, Taiwan, pp.5-14 (in Chinese)
44. K-L Pan, S-W Duann, Hwang, R. N. (1997) Geotechnical Engineers' Role in the Mass Rapid Transit Systems, Sym. on Geotechnical Engineering in NRT Constructions, Kaohsiung, Taiwan, February (in Chinese)
45. Hwang, R. N., Huang, Y. S., Huang, T. L. and Yang, P. F. (1997). Settlement Troughs over Tunnels, Sino Geotechnics, no. 60, .pp. 45~56, April, Taipei, Taiwan (in Chinese)
46. Chen, Y. C., Lai, J. H., Hwang, R. N. and Lin, G. J. (1997). Measurements and Analysis of the Pore Pressure Changes Induced by Shield Tunnelling, Sino Geotechnics, no. 60, pp. 97~106, April, Taipei, Taiwan (in Chinese)
47. Wong, L. W. and Hwang, R. N. (1997). Evaluation of Jet Grouting by In-situ Tests, Proc., Int. Conf. on Ground Improvement Techniques, May 6-8, pp. 641~647, Macau
48. Moh, Z. C., Hwang, R. N., Fan, C. B. and Chang, J. L. (1997). Jacking Up Buildings by Grouting, Proc., 14th Int. Conf. on Soil Mechanics and Foundation Engrg, September 6-12, Hamburg, Germany, PP. 1633~1636

49. Moh, Z. C., Ju, D. H. and Hwang, R. N. (1997). A small hole could become really big, Momentous Session, Proc., 14th Int. Conf. on Soil Mechanics and Foundation Engrg, September 6-12, Hamburg, Germany
50. Moh, Z. C. and Hwang, R. N. (1997). Geotechnical problems related to design and construction of the Taipei Rapid Transit Systems, Keynote Speech, Chin Fung Kee Lecture, Institute of Engineers of Malaysia, September 6, Kuala Lumpur, Malaysia
51. Chuay, H-Y, Hwang, R. N. and Kok, K-N (1997). Review of the Groundwater Condition in Taipei Basin and the Influences by Dewatering, Sino-Geotechnics, No. 63, pp. 23~32, October, Taipei, Taiwan (in Chinese)
52. Lin, L. S., Ju, D. H. and Hwang, R. N. (1997). A case study of piping failure associated with shield tunnelling, Proc., 15th International No-Dig '97, pp. 6B-1-1~6B-1-13, November 26~28, Taipei, Taiwan
53. Ou, C. Y., Hwang, R. N. and Lai, W. J. (1998) Surface settlement during shield tunnelling at CH218 in Taipei, Canadian Geotechnical Journal, vol. 35, February, pp.159~168, Canada
54. Hwang, R. (1998). Specifications for Instrumentation and Monitoring, Proc. Symposium, Construction Safety, September, Taipei, Taiwan (in Chinese)
55. Chen, M. H., Pei, M. W. and Hwang, R. N. (1998). Construction of the Taipei Rapid Transit Systems, Proc., Big Digs Around the World Symposium, ASCE 1998 National Convention, 18~21 October, Boston, Massachusetts, USA
56. Lambrechts, J. R., Hwang, R., and Urzua, A. (1998). Big Digs Around the World, Proc., Big Digs Around the World Symposium, ASCE 1998 National Convention, 18~21 October, Boston, Massachusetts (as editor)
57. Hwang, R. N., Moh, Z. C., Yang, G. R., Fan, C. B., Chao, C. L. and Wong, R. K. (1998). Ground Freezing for Repairing a Damaged Tunnel, Special Lecture, 13th Southeast Asian Geotechnical Conference, 16~20, November, Taipei, Taiwan
58. Wong, L. W., Huang, T. L., Hwang, R. N. and Chen, Y. K. (1998). Load Tests on Bored Piles Embedded in Sandstones, Proc., Regional Symposium on Sedimentary Rock Engineering, Nov. 20-22, Taipei, Taiwan, pp. 20-25
59. Moh, Z. C. and Hwang, R. N. (1999). Geotechnical Issues in Underground Constructions, Keynote Speech, Proc., International Conference on Rail Transit, Singapore, 11~13 March
60. Chuang, Y. L., Hwang, R. N. and Sung, Y. M. (1999). Rapid Transit Systems in Taiwan, Proc., International Conference on Rail Transit, Singapore, 11~13 March
61. Moh, Z. C. and Hwang, R. (1999). Soft Ground Tunneling in Taipei – Problems and Solutions, Invited Speech, Proc., Dr. Tan Swan Beng Memorial Sym., Mar 18-19, Singapore
62. Moh, Z. C. and Hwang, R. N. (1999) Geotechnical problems related to design and construction of the Taipei MRT, Keynote Speech, Commemoration of Dr. Sang-Kyu Kim's Retirement Symposium, April 17, Seoul, South Korea
63. Hwang, R. N., Wang, F. G., Chang, P. Y. and (1999) Deep Excavations – TRTS Experience, Sym. on Taipei Experience on Deep Excavations, 23 April, Taipei, Taiwan (in Chinese)
64. Moh, Z. C. Kong, S. K. and Hwang, R. N. (1999) Protecting Adjacent Buildings during Underground Constructions, Proc., Keynote Speech, Sym. on Innovative Solutions in Structural and Geotechnical Engineering in Honor of Prof. Seng Lip Lee, May 14~15, Singapore
65. Ju., D. H., Moh, Z. C. and Hwang, R. N. (1999). Soft Ground Tunneling for Taipei Rapid Transit Systems, Proc., the Third National Conference on the Geo-Institute of ASCE "Geo-engineering for Underground Facilities", June 13-17, University of Illinois, Urbana-Champaign, Illinois, USA
66. Hwang, R. and Moh, Z. C. (1999). Instrumentation for Underground Construction, Proc., The First Cross-Strait Sym. On Tunneling and Underground Construction, 10~13 August, Sanxi, China (in Chinese)

67. Ju, D. H., Lin, L. S., Moh, Z. C. and Hwang, R. N. (1999) Tunneling for Taipei Rapid Transit Systems, Proc., The First Cross-Strait Sym. On Tunneling and Underground Construction, 10~13 August, Sanxi, China (in Chinese)
68. Chen, Y. W., Duann, S. W., Hwang, R. N., and Kong, S. K., (1999) Influence of Deep Excavation on adjacent Piles, the 8th Conference on Current Researches in Geotechnical Engineering, 18~20 August, Pingtung, Taiwan (in Chinese)
69. Moh, Z. C. and Hwang, R. N. (1999) Underpass Beneath Taipei International Airport, Proc., Conference – New Frontiers and Challenges, 8~12 November, Bangkok, Thailand
70. Hsiung, B. Nash, D. F. T., Tsai, W. S. and Hwang, R. N. (1999) Observed Behaviour of a Deep Excavation, Proc., Conference – New Frontiers and Challenges, 8~12 November, Bangkok, Thailand
71. Hwang, R. N., Wang, F. G., Cheng, K. C., Chen, Y. K. (2000) Ground Improvement for NATM Tunneling in Soft Ground, Sino-Geotechnics, no. 78, April, Taipei, Taiwan (in Chinese)
72. Wang, G. S., Tang, D. C., Hwang, R. N., Hu, I. C. and Wang, F. G. (2000) Information System for the Safety of Construction of Rapid Transit Systems, ISARC 2000, 17th IAAARC/CIB/IEEE/IFAC International Symposium on Automation and Robotics in Construction, 18~20 September, Taipei, Taiwan
73. Moh, Z. C. and Hwang, R. N. (2000) Geotechnical Engineering Goes High Tech, Year 2000 – Geotechnics, Asian Institute of Technology, 13~17 November, Bangkok, Thailand
74. Chung, C-T., Sun, C-W., Hwang, R. N., and Duann, S. W. (2001). A Case History on Damages to a Tunnel due to Adjacent Excavation, Proc., 2nd Cross-Strait Seminar on Tunnels and Underground Constructions, January, Taipei, Taiwan (in Chinese)
75. Hwang, R. N. (2001). Case Histories on Application of Ground Improvement in Tunneling and Building Protection – TRTS Experience, Workshop on Application of Ground Improvement on MRT Construction, Kaohsiung, Taiwan, February (in Chinese)
76. Hsiung, B., Nash, D.F.T., Cheng, K. H., Huang, C-C, and Hwang, R. N. (2001). Effectiveness of Jet-Grout Slabs and Partition Panels in Restricting Wall Movements in Deep Excavation, Proc., 14th Southeast Asian Geotechnical Conference, December 10~14, Kuala Lumpur, Malaysia
77. Hwang, R. N. (2001), Applications of GIS in Civil Engineering, Seminar on the Use of GIS on Public Utilities, 6~7 November, Hsinchu, Taiwan (in Chinese)
78. Chung, C-T., Sun, C-W., Duann, S. W. and Hwang, R. N. (2001), Response of a Taipei Rapid Transit (TRTS) Tunnel to Adjacent Excavation, accepted for publication, J. of Tunnelling and Underground Spaces, Elsevier Science, Oxford, United Kingdom, November
79. Hwang, R. N. and Song, Y. M. (2002), Establishment of GIS Network for Civil Engineering, National Geographic Information System News, no. 41, March, Taipei, Taiwan (in Chinese)
80. Moh, Z. C. and Hwang, R. N. (2002), Subway Engineering, McGraw-Hill Encyclopedia of Science and Technology, 9th ed. April, McGraw-Hill Professional Publishing Co., New York, New York
81. Moh, Z. C. and Hwang, R. N. (2002), Tunnel, McGraw-Hill Encyclopedia of Science and Technology, 9th ed., April, McGraw-Hill Professional Publishing Co., New York, New York
82. Hwang, R. N., Huang, C. C., Chen, H., Lee, C. T. and Pan, K. L. (2002), Automation in Mapping of Environmental Sensitive Geological Features, Sino-Geotechnics, no. 90, April, Taipei, Taiwan (in Chinese)
83. Chen, C. H., Duann, S. W. and Hwang, R. N. (2002), Ground Subsidence Caused by Shield Tunneling for the Taipei Mass Rapid Transit Systems, Proc., Cross-Strait Seminar on Geotechnical Engineering, 22~24 April, Shanghai, China (in Chinese)

84. Cheng, K. H., Chen, M. H. T., and Hwang, R. N. (2002), Ground Improvement as a Measure for Protecting Adjacent Buildings – TRTS Experience, World Metro Symposium & Exhibition, Taipei, April 25~27, Taipei, Taiwan
85. Hwang, R. N., Chen, Y. W. and Chen, C. H. (2002), Instrumentation and Monitoring for Taipei Rapid Transit Systems, World Metro Symposium & Exhibition, Taipei, April 25~27, Taipei, Taiwan
86. Moh, Z. C., Hwang, R. N., Yang, G. R., Fan, C. B. and Chao, C. L. (2002), Ground Settlements over Tunnels Affected by Loss of Compressed Air Pressures, World Metro Symposium & Exhibition, Taipei, April 25~27, Taipei, Taiwan
87. Moh, Z. C., Hwang, R. N. (2002), 1999 Chi Chi Earthquake of Taiwan, Proc., the 17th Australasian Conference on the Mechanics of Structures and Materials (ACMSM17), 12~14 June, Gold Coast, Australia
88. Hwang, R. N. and Huang, C. C. (2002), Landslide and Debris Flow Prevention and Mitigation Program in the City of Taipei, Proc., Sino-British-Italian Geological Conference on Landslides and Debris Flows in Active Geodynamic Environments: Tools and Methods for Risk Mitigation, 30th June~6th July, Padua, Venice, Dolomites, Italy
89. Moh, Z. C. and Hwang, R. N. (2002), Urban Geological Problems in Taiwan, Proc., the 37th Annual Convention of Japanese Geotechnical Society, July 16~18, Osaka World Metro Symposium & Exhibition, Taipei, 16~18 July, Osaka, Japan
90. Hwang, R. N. (2002), Introduction to Ground Freezing Adopted in the Construction of Chungho Line, in-house training, Department of Rapid Transit Systems, Taipei City Government, October, Taipei, Taiwan (in Chinese)
91. Hwang, R. N. (2002), Dewatering for Underground Constructions, in-house training, Department of Rapid Transit Systems, Taipei City Government, October, Taipei, Taiwan (in Chinese)
92. Perng, B. H., Hwang, R. N., Lee, C. C. and Chen, Z. Z. (2002), Establishment of GIS Systems for Public Utilities – Standards and Applications, Proc., 2002 Chinese Information Society Annual Convention, 3~4 October, Taichung, Taiwan (in Chinese)
93. Tung, C.F., Hwang, R. N., Chen, S.M., and Sung, Y.M. (2002), A GIS System for Corridor Studies and Planning of Transportation Networks, Proc., 2002 Chinese Information Society Annual Convention, 3~4 October, Taichung, Taiwan (in Chinese)
94. Hsiung, B., Nash, D. T, Chen, C.-H. and Hwang, R. N. (2002), The Use of Piling and Underpinning for House Protection in Deep Excavation: Case Studies from Taipei, Taiwan, TC28 Conference, Toulouse, France, October 2
95. Hwang, R. N. and Chin, C. H. (2003) Building Protection for Cut-and-Cover Constructions and Shield Tunneling, Symposium on Building Protection for Construction of Rapid Transit Systems, December, Taipei & Kaohsiung, Taiwan (in Chinese)
96. Moh, Z. C. and Hwang, R. N. (2003), Flooding of A Working Shaft during Construction of Taipei MRT, Workshop on Forensic Geotechnical Engineering, February 28~March 1, Chennai, India
97. Hwang, R. N. (2003), Management of Geo-Information in Taiwan, Proc., 12th Asian Regional Conference, 4~8 August, Singapore
98. Hwang, R. N. and Chin, C. H. (2003), Response of Gravelly Layers to Compaction Grouting, Case Histories in Geotechnical Engineering, edited by Fang, Sino-Geotechnics Foundation, Taipei, Taiwan (in Chinese)
99. Sun, C-W, Chin, C-T, and Hwang, R. N. (2004) Prediction of Ground Settlement Due to Deep Excavation, Asian Regional Conference, Osaka, Japan
100. Hwang, R. N. and Moh, Z. C. (2004) Geotechnical Services and Safety Management for Underground Constructions, Symposium on City and Underground Space and Underground Construction, June, Beijing, China (in Chinese)

101.Hwang, R. N. (2004) Risk management and insurance for constructions, Seminar, Insurances for Constructions, 13 July, People Insurance Company, Beijing, China (in Chinese)

102.Duann, S. W., and Hwang, R. N. (2004), Ground Freezing for Restoration of Damaged Tunnels of Taipei Rapid Transit Systems, National Symposium on City and Underground Space, August, Shanghai, China (in Chinese)

103.Moh, Z. C. and Hwang, R. N. (2004) Risk Assessment for Subway Constructions, Project Management Conference, November 29 to December 1, Hong Kong (in Chinese)

104.Hwang, R. N. (2005) Primary and Secondary Settlements over Tunnels during Shield Tunneling, Seminar, Department of Rapid Transit Systems, 14 April, Taipei (in Chinese)

105.Hwang, R. N. (2005) Lateral deflections of diaphragm walls – Collapse of Nicoll Highway, Seminar on Diaphragm Wall Practice and Specifications, Architecture and Building Research Institute, 16 November, Taipei and 22 November, Kaohsiung (in Chinese)

106.Moh, Z. C. and Hwang, R. N. (2005) Geotechnical Considerations in the Design and Construction of Subways in Urban Areas, Seminar on "Recent Developments on Mitigation of Natural Disasters, Urban Transportation and Construction Industry" 30 November – 2 December, Jakarta Indonesia

107.Duann, S. W., Wang, C., H., Chen, C. H. and Hwang, R. N. (2005) Effectiveness of Ground Improvement Techniques Used on Taipei Rapid Transit Systems, 2005 Cross-Strait Seminar on Railway Engineering and Operation, December 19~20, Taipei (in Chinese)

108.Hwang, R. N., Moh, Z. C. and Kao, C. C. (2006) Design and construction of deep excavations in Taiwan, Seminar on "The State-of-the-Practice of Geotechnical Engineering in Taiwan and Hong Kong", 20 January, Hong Kong

109.Hwang, R. N. (2006) Risk management for MRT constructions – from the insurers' point of view, Workshop on Cross-Strait Geotechnical Engineering Risk Management, 1 November, Tamkang University, Taipei, Taiwan (in Chinese)

110.Hwang, R. N. and Moh, Z. C. (2006), "Prediction of long-term settlements induced by shield tunneling", J. of GeoEngineering, v1, no. 2, December, Taipei, Taiwan, pp. 63~70

111.Hwang, R. N. and Moh, Z. C. (2007), "Deflection paths and reference envelopes for diaphragm walls in the Taipei Basin", J. of GeoEngineering, v2, no. 1, April, Taipei, Taiwan, pp. 1~12

112.Hwang, R. N., Moh, Z. C. and Wong, K. S. (2007), "Reference envelopes for deflections of diaphragm walls in Singapore Marine Clay", Proc., 16th Southeast Asian Geotechnical Conference, 8 ~ 11 May, Subang Jaya, Malaysia, pp. 821~826

113.Hwang, R. N. and Moh, Z. C. (2007), "Numerical models for predicting long-term settlements over tunnels", Proc., 16th Southeast Asian Geotechnical Conference, 8 ~ 11 May, Subang Jaya, Malaysia, pp. 307~312

114.Moh, Z. C. and Hwang, R. N. (2007), "Lessons learned from Recent MRT construction failures in Asia Pacific", Proc., Keynote Speech, 16th Southeast Asian Geotechnical Conference, 8 ~ 11 May, Subang Jaya, Malaysia, pp. 3~20

115.Hwang, R. N., Chin, C. T. and Todo, H., (2007), "Geology and geotechnical problems in Taiwan", J., Soil and Foundation, v. 35, no. 6, June, Tokyo, Japan pp. 25~30 (in Japanese)

116.Hwang, R. N., Moh, Z. C. and Wang, C. H. (2007), "Toe movements of diaphragm walls and correction of inclinometer readings", J. of GeoEngineering, v2, no. 2, August, Taipei, Taiwan pp. 61~72

117.Hwang, R. N., Moh, Z. C. and Wang, C. H. (2007), "Performance of retaining system in excavation for Core Pacific City", J. of GeoEngineering, v2, no. 2, August, Taipei, Taiwan, pp. 53~60

118.Moh, Z. C. and Hwang, R. N. (2007), "Failures and risk management in MRT constructions", International Seminar for Constructing and Operating Safety in China Urban Rail Transport, 22~23, September, Beijing, China (in Chinese)

119.Hwang, R. N., and Moh, Z. C. (2007), "Reference envelopes for evaluating performance of diaphragm walls",

13th Asian Regional Conference, December, Kolkatta, India, pp.9-27.

120. Hwang, R. N., Ishihara, K. and Lee, W. F. (2007), "Forensic study for failure of an underground station of the Kaohsiung MRT System", TC-40 Report, 13th Asian Regional Conference, 10~14, December, Kolkatta, India

121. Hwang, R. N. and Moh, Z. C. (2007), "Performance of floor slabs in excavations using top-down method of construction and correction of inclinometer readings", J. of GeoEngineering, v2, no. 3, December, Taipei, Taiwan, pp. 111~122

122. Moh, Z. C. and Hwang, R. N. (2007), "Construction Failures and Risk Management of Subway Projects", Urban Rapid Rail Transit, vol. 88, December, Beijing, China, pp. 7~14 (in Chinese)

123. Hwang, R. N. and Moh, Z. C. (2008), Evaluating effectiveness of buttresses and cross walls by reference envelopes, J. of GeoEngineering, v3, no.1, April, Taipei, Taiwan, pp.1~11.

124. Hwang, R. N., Wu, P.J. and Chen, H.T. (2008) Risk management for construction of metro systems, Cross-Strait Symposium on Rail Transportation and Environmental Engineering, 20~22, November, Hangzhou, China, pp. 172~177

125. Kao, C.C., Chen, C. H. and Hwang, R.N. (2008) Minimization of settlements during tunneling under Songshan Airport, Sino-Geotechnics, No. 118, December, pp.5~18

126. Chung, C.T., Wang, M.J., Duann, S.W. and Hwang, R.N. (2009) Remedy of damage to a shield tunnel in the Banchiao Line of the Taipei MRT, Difficult Cases in Geotechnical Engineering – MRT design and construction, edited by Fang, et al., Chinese Geotechnical Engineering society, Taipei, pp. 221~227 (in Chinese)

127. Ju, H., Duann, S.W. and Hwang, R.N. (2009) Influences of drifting woods on construction of the Taipei MRT, Difficult Cases in Geotechnical Engineering – MRT design and construction, edited by Fang, et al., Chinese Geotechnical Engineering Society, Taipei, pp. 424~439 (in Chinese)

128. Yang, G.R., Hwang, R.N., Fan, C.B., Chao, C.L. and K.N. Wong (2009) Remedy of damage to the flexible joint at tunnel portal in contract CH221 of the Taipei MRT, Difficult Cases in Geotechnical Engineering – MRT design and construction, edited by Fang, et al., Chinese Geotechnical Engineering Society, Taipei, pp. 3~6 (in Chinese)

129. Kao, C.C., Chen, C.H. and Hwang, R.N. (2009) Mechanism of ground settlements and heaves due to shield tunneling, J. of GeoEngineering, Taipei, vol. 4, no.2, pp. 63~72

130. Hwang, R.N. (2009) Back analyses in forensic geotechnical engineering, Chapter 9, Forensic Geotechnical Engineering, TC40 of ISSMGE, October.

131. Hsiung, Benson B. C. and Hwang, R. N. (2009) Influence of ground improvement on deflection of diaphragm walls in deep excavations, Int. Sym. on Ground Improvement Technologies and Case Histories, 9~11, December, Singapore, 305~310

132. Hsiung, Benson B. C. and Hwang, R. N. (2009) Correction of inclinometer readings for toe movements, Special Issue on Excavation and Tunneling in Geotechnical Engineering Journal of SEAGS, 39~48

133. Hsiung, Benson B. C. and Hwang, R. N. (2009) Evaluating performance of diaphragm walls by wall deflection path, Special Issue on Excavation and Tunneling in Geotechnical Engineering Journal of SEAGS, 81~90

134. Underground construction and risk management, 7th Geotechnical Engineering Heritage Lecture, Professional Geotechnical Engineers Association, Taipei, Taiwan (in Chinese)

135. Hwang, R. N. (2010) Performance of Deep excavations in Taiwan, ER-2010, Earth Retention Conference 3, ASCE, August 1~4, Bellevue, Washington, USA, 55~68

136. Chao, H-C; Hwang, Richard N. and Chin, C-T (2010) Influence of Tip Movements on Inclinometer Readings and Performance of Diaphragm Walls in Deep Excavations, ER-2010, Earth Retention Conference 3, ASCE, August 1~4, Bellevue, Washington, USA, 326~333

137. Chao, H. C, Chang, J. F. and Hwang, R. N. (2010) Evaluation of performance of diaphragm walls in deep excavations by using deflection path method, 17th Southeast Asian Geotechnical Conference, May 10~13, Taipei, Taiwan, vol. I, pp. 390~393

138. Wong, L. W. and Hwang, R. N. (2010) Hydraulic parameters of Gingmei Formation in Taipei Basin, Taiwan Rock Engineering Symposium 2010 (TRES 2010), October, 21~22, Kaohsiung Univ. of Applied Sciences,

Kaohsiung, Taiwan

139.Hwang, R. N., Chen, B-S, Wu, T-E and Duann, S. W. (2010) Damage to a metro tunnel due to adjacent excavation, International Symposium on Forensic Approach to Analysis of Geohazard Problems, Mumbai, Indian, December 14~15, 72~80

139.Hwang, R. N., Lee, T. Y., Chou, C. R. and Su, T. C. (2011) Deep excavations in the Taipei Basin, Annual Convention, 12 March, Professional Geotechnical Engineers Association, New Taipei City, Taiwan (in Chinese)

140.Hwang, R. N., Lee, T. Y., Chou, C. R. and Su, T. C. (2011) Deep excavations in the Taipei Basin, Annual Convention, 12 March, Professional Geotechnical Engineers Association, Taipei, Taiwan (in Chinese)

141.Hwang, R. N., Duann, S. W., Kao, C. C. and Chen, C. H. (2011) Underground construction and risk management, Keynote Speech, Cross Strait Symposium on Geotechnical Engineering, 24~25 May, Guangzhou, China (in Chinese), 1~18 (Taiwan Contributions)

142.Hwang, R. N. and Moh, Z. C. (2011) Performance of Deep excavations in Taiwan, Proc., 7th International Symposium, Geotechnical Aspects of Underground Construction in Soft Ground, 16~18 May, Rome, Italy

143.Hwang, R. N. (2011) Construction and risk management for soft ground tunneling, Symposium on Construction Risk Management for Tunneling, June, Taipei, Taiwan (in Chinese)

144.Hwang, R., Cheng, K. H., Chen, C. H. and Duann, S. W. (2011) Damages to metro tunnels due to adjacent excavations, Symposium on Backwards Problem in Geotechnical Engineering and Geotechnical Failure and Monitoring, July 14~15, Osaka, Japan

145.Hwang, R., Lee, T. Y., Chou, C. R., and Su, T. C. (2012) Evaluation of performance of diaphragm walls by wall deflection paths, J. of GeoEngineering, v2, no. 1, April, Taiwan Geotechnical Society, Taipei, 1~12

146.Hwang, N. H. and Moh, Z. C. (2012) Risk management knowledgebase for underground constructions, 2nd Symposium of Engineering Risk & Insurance Research, October 18~20, Beijing, China (Published in Chinese J. of Underground Space and Engineering, v. 8, Supp 2, 2012, Oct, 1637~1641) (in Chinese)

2 Hwang, R., Moh, Z. C. and Hu, I-C. (2013) Effects of Consolidation and specimen disturbance on strengths of Taipei Clays, J. Geotechnical Engineering, v44, no. 1, March, Southeast Asian Geotechnical Society & Association of Geotechnical Societies in Southeast Asia, Bangkok, 9~18