Ivan Gratchev

Dr Gratchev received his master and doctoral degrees from Kyoto University while working on the cyclic properties of soil, including soil liquefaction. He is currently a Senior lecturer at Griffith University, Australia. His area of expertise is geotechnical engineering with a focus on slope stability problems. Over the past 15 years, he has acquired significant experience in field investigations, laboratory testing and computer analysis. Before joining Griffith University in 2010, Ivan spent ten years studying liquefaction and landslide phenomena in Japan, China and Indonesia. Dr Gratchev has produced a number of research papers which have been published in several peer-reviewed international journals.

Successful Grants

2016 ARC Linkage Infrastructure, Equipment and Facilities (LE160100206). National rock, concrete and advanced composite testing capability. **$800,000.00**

CI: Professor David Williams; Dr Alexander Scheuermann; Dr Nangallage Fernando; Professor Darren Martin; Dr Michael Heitzmann; Professor Abdelmalek Bouazza; Professor Chun Wang; Professor Adrian Mouritz; Professor Ernesto Villaescusa; Professor Mark Cassidy; Associate Professor Olivier Buzzi; Associate Professor Adrian Russell; Associate Professor Muhammad Hadi; **Dr Ivan Gratchev**; Dr Abbas Taheri

Publications (for the last 5 years)

Refereed journal articles

1. Ivan Gratchev, and Ikuo Towhata (2011) "Analysis of the mechanisms of slope failures triggered by the 2007 Chuetsu Oki earthquake," Geotechnical and Geological Engineering 29 (5), 695-708.

2. Ivan Gratchev, and Ikuo Towhata (2011), "Compressibility of natural soils subjected to long-term acidic contamination", Environmental Earth Sciences 64, 193-200.

3. Ivan Gratchev, Masyhur Irsyam, Ikuo Towhata, Bakhtiar Muin, and Hasbullah Nawir (2011), "Geotechnical aspects of the Sumatra earthquake of September 30, 2009, Indonesia", Soils and Foundations 51 (2), 333-343. A

4. Ali Shokouhi, **Ivan Gratchev**, D. Kim (2013), "Rock slope stability problems in Gold Coast area, Australia." International Journal of GEOMATE, 4 (1) serial 7

5. Ivan Gratchev and Ikuo Towhata (2013). "Stress-strain characteristics of two natural soils subjected to long-term acidic contamination," Soils and Foundations 53 (3), 469-476. A

6. Ivan Gratchev, Kyoji Sassa (2013). "Cyclic shear strength of soil with different pore fluids", Journal of Geotechnical and Geoenvironmental Engineering, American Society of Civil Engineers 139 (10), 1817–1821. A*

7. D. Kim, **Ivan Gratchev**, A. Balasubramaniam (2013). "Determination of joint roughness coefficient (JRC) for slope stability analysis: a case study from the Gold Coast area, Australia." Landslides 10(5): 657-664

8. Ivan Gratchev, A. Shokouhi, A Balasubramaniam (2014). "Feasibility of using fly ash, lime, and bentonite to neutralize acidity of pore fluids", Environmental Earth Sciences 71, 3329-3337.

9. D.H. Kim, **Ivan Gratchev**, A.S. Balasubramaniam (2014). Back analysis of a natural jointed rock slope based on the photogrammetry method. Landslides 12: 147-154.

10. D.H. Kim, **Ivan Gratchev**, A.S. Balasubramaniam (2014). A photogrammetric approach for stability analysis of weathered rock slopes. Geotechnical and Geological Engineering 33: 443-454 doi 10.1007/s10706-014-9830-z

11. D.H. Kim, **Ivan Gratchev**, G. Berends, A.S. Balasubramaniam (2015). Calibration of restitution coefficients using rockfall simulations based on 3D photogrammetry model: a case study, Natural Hazards, doi 10.1007/s11069-015-1811-x.

12. Ivan Gratchev, I. Towhata (2015). Compressibility of soils containing kaolinite in acidic environments. KSCE Journal of Civil Engineering DOI 10.1007/s12205-015-0141-6

13. Ivan Gratchev, K. Sassa (2015) Shear Strength of Clay at Different Shear Rates. Journal of Geotechnical and Geoenvironmental Engineering ASCE, 141 (5), 06015002 http://dx.doi.org/10.1061/(ASCE)GT.1943-5606.0001297, A*

14. Ivan Gratchev, D.H. Kim (2015) On the reliability of the strength retention ratio for estimating the strength of weathered rocks. Engineering Geology; doi:10.1016/j.enggeo.2015.12.005. (ERA ID: 1722), (IF 1.74), A*

15. Ivan Gratchev, D.H. Kim, M. Chung (2015) Study on the friction between mesh and rock surface in drapery systems for rock fall hazard control. Engineering Geology; doi:10.1016/j.enggeo.2015.10.005. (ERA ID: 1722), (IF 1.74), A*

16. D.H. Kim, G.V. Poropat, **Ivan Gratchev**, A.S. Balasubramaniam (2015) Improvement of photogrammetric JRC data distributions based on parabolic error models. International Journal of Rock Mechanics and Mining Sciences, 80; 19-30. (ERA ID: 4029), (IF 1.69), A*

17. Ivan Gratchev, D.H. Kim, (2016) Strength of rock-like specimens with pre-existing cracks of different length and width. Rock Mechanics and Rock Engineering; doi:10.1007/s00603-016-1013- 1 (ERA ID: 4070), (IF 2.42), A

18. D.H. Kim, **Ivan Gratchev**, M. Hein, A.S. Balasubramaniam (2016) The application of normal stress function in tilt tests for different block shapes. Rock Mechanics and Rock Engineering; doi:10.1007/s00603-016- 0989-x (ERA ID: 4070), (IF 2.42), A

19. Dong Hyun Kim, George Poropat, **Ivan Gratchev**, Arumugam Balasubramaniam (2016). Assessment of the Accuracy of Close Distance Photogrammetric JRC Data. Rock Mechanics and Rock Engineering. doi:10.1007/s00603-016-1042-9, A

20. **Ivan Gratchev**, K. Sassa (2016). Closure to "Shear strength of clay at different shear rates". Journal of Geotechnical and Geoenvironmental Engineering (in press), A*

Refereed conference papers

1. Ivan Gratchev (2011) “Compressibility of soils subjected to long-term acidic contamination”, in The 14th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering, (on CD).

2. Ali Shokouhi, **Ivan Gratchev**, Arry Charrismanagara (2012) Rock slope stability problems in Gold Coast area, Australia. Geotechnique, Construction Materials and Environment GEOMATE 2012

3. Ivan Gratchev, Arumugam Balasubramaniam (2012) Developing assessment tasks to improve the performance of engineering students. The Proceedings of the 23rd Annual Conference for the Australasian Association for Engineering Education (AAEE), Melbourne

4. Ivan Gratchev, Chanaton Surarak, Arumugam Balasubramaniam, Erwin Oh (2012), “Consolidation of soft soil by means of vertical drains: field and laboratory observations,” 11th Australia New Zealand Conference on Geomechanics (ANZ 2012), July 15-18, Melbourne, Australia.

5. Ivan Gratchev, Ali Shokouhi, Alistair Inoue, Angus Brennan, (2012), “Feasibility of using bentonite, lime and fly ash in permeable reactive barriers for acid sulphate soils,” 11th Australia New Zealand Conference on Geomechanics (ANZ 2012), July 15-18, Melbourne, Australia

6. Ivan Gratchev, Arumugam Balasubramaniam, Erwin Oh, and Mark Bolton (2012), "Experimental study on effectiveness of vertical drains by means of Rowe cell apparatus." International conference on Ground Improvement and Ground Control: ICGI 2012, 30 Oct - 2 Nov 2012.

7. Ivan Gratchev, A. Shokouhi, D. H. Kim, D. Stead, and A. Wolter (2013). "Assessment of rock slope stability using remote sensing technique in the Gold Coast area, Australia." 18th Southeast Asian Geotechnical & Inaugural AGSSEA Conference, Singapore

8. Dong Hyun Kim, SK Kim, **Ivan Gratchev** (2013). "Unsaturated seepage behavior study using soil column test". 18th Southeast Asian Geotechnical & Inaugural AGSSEA Conference, Singapore.

9. Dong Hyun Kim, **Ivan Gratchev**, G. Poropat (2013). "The determination of joint roughness coefficient using three-dimensional models for slope stability analysis." The International Symposium on Slope Stability in Open Pit Mining and Civil Engineering (Slope Stability 2013), Brisbane, Australia

10. S. Saeidi, **Ivan Gratchev**, D.H. Kim, M. Chung (2014). Evaluation of restitution coefficients concerning surface roughness. Proceeding of 23rd Australasian Conference on the Mechanics of Structural Materials (ACMSM23) Conference, Byron Bay, vol.2, pp.781-786

11. D.H. Kim, M. Chung, **Ivan Gratchev** (2014). Assessment of rock joint roughness using image analysis of damaged area in direct shear tests. Proceeding of 23rd Australasian Conference on the Mechanics of Structural Materials (ACMSM23) Conference, Byron Bay, vol.2, pp.745-750

12. D.H. Kim, **Ivan Gratchev**, A.S. Balasubramaniam, M. Chung (2015). Determination of mobilized asperity parameters to define rock joint shear strength in low normal stress conditions. Proceeding of 12th Australia New Zealand conference on geomechanics, Wellington, pp.1145-1152

13. D.H. Kim, **Ivan Gratchev**, E. Oh, A.S. Balasubramaniam (2016) Assessment of rock slope weathering based on the alteration of photogrammetric roughness data. The 19th Southeast Asian geotechnical conference, May 2016, Malaysia.

14. D.H. Kim, **Ivan Gratchev**, E. Oh, A.S. Balasubramaniam (2016) Evaluation of the vulnerability of rock weathering based on monitoring using photogrammetry. The 5th International conference on geotechnical and geophysical site characterisation, ISC5 2016, Sep 2016, Gold Coast, Australia.

15. Yarahmadi, N., **Ivan Gratchev**, Jeng, D. -S, Gibbs, D. (2016). "Effects of thickness reduction on hydraulic transmissivity of geonets used in leachate collection systems in landfills", 19th Southeast Asian Geotechnical Conference & 2nd AGSSEA Conference, pp. 777-783, Kuala Lumpur, Malaysia.

16. Yarahmadi, N., **Ivan Gratchev**, Jeng, D. -S, Gibbs, D. (2016). "A comparison between hydraulic behaviour of tri-planar and bi-planar geonets in landfills leachate collection and removal systems", International Conference on Geomechanics, Geo-energy and Geo-resources, Melbourne, Australia.

Awards, Fellowships, Major Scholarly Prizes

Year	Description	Comment eg. $ value of award
2016	Griffith Sciences Learning and Teaching Citation Commendation	Awarded by Griffith Sciences, Griffith University
2015	Pro Vice Chancellor's Learning and Teaching Excellence Awards (Early Career)	Awarded by Griffith University, Griffith Sciences Group
2015	Griffith Award for Excellence in Teaching - Early Career	Awarded by Griffith University, $1,500
2014	Nomination for "Lecturer of the Year 2014-Civil Engineering"	Graduands choice
2014	Pro Vice Chancellor's Learning and Teaching Excellence Awards (Commendation)	Awarded by Griffith University, Griffith Sciences Group
2014	Griffith Sciences Learning and Teaching Citation Commendation	Awarded by Griffith Sciences, Griffith University
2014	Griffith Award for Excellence in Teaching - Early Career Highly Commended	Awarded by Griffith University
2014	Griffith Sciences Pro-Vice Chancellor's Commendation for Excellence in Teaching (Early Career)	Awarded by Griffith Sciences, Griffith University
2014	Griffith Sciences Learning and Teaching Grant	$10,000, Awarded by Griffith Sciences, Griffith University
2013	Pro Vice Chancellor's Learning and Teaching Excellence Awards	Awarded by Griffith University, SEET group
2013	Group Learning and teaching citation/Griffith awards for excellence in teaching	$2,000, Awarded by Griffith University, SEET group
2013	Winner of "Lecturer of the Year 2013-Civil Engineering"	Graduands choice
2012	Nomination for "Lecturer of the Year 2012-Civil Engineering"	Graduands choice
2007-2009	Postdoctoral Fellowship JSPS	$42,000 (USD) per year, Awarded by Japanese Ministry of Education
2008	Best paper presentation among young researchers at the 43rd Japanese Geotechnical Society (JGS) Conference, Hiroshima, Japan	Awarded by Japan Geotechnical Society
2001-2007	Research Scholarship (Mombusho) for graduate studies in Japan	$21,000 (USD) per year