Editorial

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This themed issue of the *Ground Improvement* journal contains selected papers presented at the International Conference on Ground Improvement and Ground Control: Transport Infrastructure Development and Natural Hazard Mitigation (www.icgiwollongong.com), which was held at University of Wollongong Australia. This issue addresses the key ground improvement problems encompassing modern transport infrastructure and natural hazard mitigation. The papers selected for this themed issue include numerical and analytical methods, design parameters, field and laboratory testing, and case studies.

The article 'Analyses of reinforced embankment on soft and hard foundations' by Duangkhae *et al.* (2014) presents the analyses and design of reinforced embankments on soft ground using the K-stiffness method considering post-construction settlement. The reinforcement load predicted using a further-modified K-stiffness method shows a good agreement with the field results.

The paper titled 'Performance assessment of reinforced ballasted rail track' by Indraratna *et al.* (2014) discusses the use of artificial inclusions such as polymeric geosynthetics and energy-absorbing shock mats as a suitable alternative for reducing unacceptable track degradation and for ensuring sustainable track alignment. It highlights that geogrids decrease the vertical settlement of the ballast layer with the obvious benefits of improved track stability and decreased cost of maintenance.

In their study on 'Methods of vacuum consolidation and their deformation analyses', Chai *et al.* (2014) investigate the advantages and disadvantages of both the air-tight sheet method and the vacuum-drain method to conduct vacuum consolidation in the field. The paper demonstrates the effectiveness of these methods to conduct vacuum consolidation using two typical case histories in Japan.

The study on 'Stresses and displacements in reinforced tracks' by Sowmiya *et al.* (2014) presents the use of geosynthetics as an important option to improve the track support structure for reducing track maintenance costs and operational costs. The results of a three-dimensional finite-element analysis highlight that the geosynthetic reinforcement can improve the performance of railway tracks on clayey subgrade.

In the paper 'Strength correlations of cement-mixed soils using

data mapping' Wang and Al-Tabbaa (2014) draw our attention to the comparison and development of correlation between the unconfined compressive strength and the undrained triaxial compressive strength which is essential for generalising the performance and optimising the design of cement-stabilised soils.

The five technical papers included in this themed issue offer an excellent mix of ground improvement applications for a variety of transport infrastructure development and natural hazard mitigation. All the papers have been peer-reviewed according to journal guidelines to maintain high standards; the efforts of all the reviewers are gratefully acknowledged. The assistance of the journal's editorial team during the entire period of review, editing and publishing is gratefully appreciated. We would like to thank the editor-in-chief, Professor Anand Puppala, for inviting us to be the guest editors of this themed issue. It will provide a comprehensive reference volume for a number of problems in the area of *Ground Improvement*, and will be of immense benefit for researchers and practising engineers alike.

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