Editorial

Anand Puppala PhD, PE

Professor, University of Texas at Arlington, USA; and Chairman, editorial advisory panel

By the time you read this issue, you will be well into the New Year; still I would like to wish all our readers, editorial board members and journal staff a very happy new year.

Over the past year *Ground Improvement* has accomplished many important milestones. Notably, two published papers in the journal received esteemed awards, namely the Telford Premium and Bill Curtin Medal. I would like to congratulate the authors of these two papers. The winner of the Telford Premium award (Ahmad *et al.*, 2011) describes the application of electrokinetics to modify soil behaviour whereas the winner of the Bill Curtin Medal (Cristelo *et al.*, 2011) shows deep soil improvement using alkali activation of fly ash source material.

The journal has also received several interesting papers including contributions from esteemed names in ground improvement. This issue comprises five excellent papers from different countries around the world, demonstrating the journal's growing global presence. These papers are described briefly below.

The paper by Kumar *et al.* (2013) focuses on the grouting of loose sand soils by studying shear strength of sands mixed with cement and other chemical admixtures. Direct shear tests were conducted on treated soils and the results indicated that low amounts of grouts on loose sands showed a steady increase of shear strength. At higher amounts the increase was considerable. This paper signifies the importance of water/cement ratio as this parameter has a major influence on treated soil shear strength.

The second paper by Mitrani and Madabhushi (2013) focuses on the mitigation of liquefaction of soils using high-density polyethylene geomembrane containment walls for residential structures. The paper describes extensive test results from centrifuge tests using these walls with a single degree of freedom frame structure. Two major benefits were found from these tests: reduced surface settlements and no increase in the accelerations transmitted to structures. The authors provide explanations for the improved performance and both preventions of surface drainage sand and hoop stress mobilisation due to geomembranes are attributed to the reductions in settlements.

The third paper by Spagnoli *et al.* (2013) focuses on the modification of clays to influence the adhesion parameter. This study has potential to develop methods to mitigate clogging issues during tunnel boring operations in clay. The paper describes the use of a new adhesion test (pull-out cone test) on clays treated with different sodium chloride solutions. The results

are interesting and promising. The authors explain the variations in their results for basic clay-pore fluid behaviour in the presence of sodium chloride solutions.

The fourth paper by Fattah *et al.* (2013) deals with the treatment of a collapsible soil using grouting technology. Four gypseous soils with different gypsum contents were grouted with acrylate liquid. Treated soils were subjected to compressibility and shear strength tests. Compressibility was reduced by 70% while collapse potentials were reduced by 60%. The authors describe possible factors for this decrease. In the case of shear strength tests, mixed results were obtained with increased cohesion intercept and a decrease in friction angle with the treatment.

The final paper by Pongsivasathit *et al.* (2013) describes the laboratory test results and analyses to address interaction behaviour between a floating column and the surrounding soil, with or without a surface cement stabilised slab. Numerical finite-element analysis was also performed using an axisymmetric unit cell model. A method to calculate consolidation settlement–time curve of floating-column-improved soft clayey subsoil has been developed. This method was validated by checking its predictions with the laboratory model test results and four field case histories in Japan.

I have enjoyed reading all these papers that described chemical treatment, grouting, deep mixing and geosynthetic reinforcement to improve soil properties. I hope you will also enjoy reading these papers.

REFERENCES

- Ahmad KB, Raihan Taha M and Kassim KA (2011) Treatment on a tropical residual soil. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **164**(1): 3–13, <http://dx.doi.org/10.1680/grim.164.1.3>.
- Cristelo N, Glendinning S and Teixeira Pinto A (2011) Deep soft soil improvement by alkaline activation. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **164**(2): 73–82, <http://dx.doi.org/10.1680/grim.164.2.73>.
- Fattah MY, Al-Ani MM and Al-Lamy MTA (2013) Treatment of collapse of gypseous soils by grouting. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **166**(1): 32–43, <http://dx.doi.org/10.1680/grim.11.00020>.
- Kumar STG, Abraham BM, Sridharan A and Jose BT (2013) Improvement of shear strength of loose sandy soils by grouting. *Proceedings of the Institution of Civil Engineers –*

Ground Improvement **166(1)**: 3–8, <http://dx.doi.org/10.1680/grim.10.00015>.

Mitrani H and Madabhushi SPG (2013) Geomembrane containment walls for liquefaction remediation. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **166(1)**: 9–20, <http://dx.doi.org/10.1680/grim.10.00035>.

Pongsivasathit S, Chai J and Ding W (2013) Consolidation settlement of floating-column-improved soft clayey deposit.

Proceedings of the Institution of Civil Engineers – Ground Improvement **166(1)**: 44–58, <http://dx.doi.org/10.1680/grim.11.00028>.

Spagnoli G, Feinendegen M and Rubinos D (2013) Modification of clay adhesion to improve tunnelling excavation. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **166(1)**: 21–31, <http://dx.doi.org/10.1680/grim.11.00017>.