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Ground Improvement

Editorial

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I am delighted to introduce this September issue of *Ground Improvement* to you on behalf of the editorial panel. Recently, soil mechanism problems have held researchers' attention worldwide, and as such, there are a total of six papers in this issue on the study of soil mechanisms and characteristics. Following are synopses of these papers.

The first paper by Mandal and Paramkusam (2023) investigates the impact of highly concentrated sodium hydroxide alkali on the heaving behaviour of low-plasticity clay. The effect of ground-granulated blast-furnace slag (GGBFS) as a stabiliser for alkali-interacted soil was also investigated. And the effectiveness of GGBFS utilisation to reduce heaving due to alkali interaction in soil was analysed. The results showed that percentage change in GGBFS had a significant effect on alkali-interacted soil while curing period was significant for the compressive strength of GGBFS-stabilised soil.

In the second paper, Chowdepalli *et al.* (2023) examine the utilization of waste foundry sand (WFS) as a foundation material for earthwork practice. This paper evaluated the viability of using WFS as a foundation material, focusing primarily on the leaching potential and load-carrying capacity of WFS samples. In a large test chamber, load–settlement response experiments of unreinforced and geogrid-reinforced WFS beds were conducted. Based on the results obtained in the study, WFS can be a viable foundation material in low-to-medium performance constructions with proper reinforcement.

In the third paper by Muthukkumaran *et al.* (2023), the synergic effects of alkaline activation (AA) and fibre inclusions on the mechanical behaviour of flyash-stabilised black cotton soil were investigated. An assessment of the engineering behaviour of AA-treated soil reinforced with surface-coated sisal fibres was carried out by conducting various laboratory tests. The study demonstrates that the addition of fibre-reinforced alkaline activation AA-fly ash could effectively increase the soil stiffness and toughness, as well as mitigate the anticipated negative effects that dynamic loading could cause.

The next paper by Ye Htun *et al.* (2023) investigates the behaviour of lateritic soil mixed with bottom ash (BA) and evaluates the effectiveness of using BA in pavement subbases. Lateritic soil, a conventional subbase soil, was mixed with 0–60% BA, and the resulting mixture's properties were analyzed. Grade B and grade D soils were separated from the lateritic soil by sieving. Each soil grade was evaluated for bearing capacity and permeability while being mixed with BA at various concentrations.

In the study by Hosseinzade *et al.* (2023), the strength behaviour of sandy soil containing kaolinite under both non-contaminated and heavy lead metal-contaminated conditions is investigated. The behaviour of two distinct varieties of adsorbents, zeolite and bentonite, is compared, and the adsorption changes of various soil and adsorbent compounds are studied. The results indicate that the composition of the base soil containing 10 wt% zeolite is geotechnically and ecologically suitable. Although the composition of the non-contaminated base soil containing 10% bentonite is geotechnically feeble, it possesses the necessary environmental efficiency.

The sixth paper by Dewar *et al.* (2023) provides bound limits of stiffness improvement observed from the treatment of infilled solution features in chalk, where rapid impact compaction proved a rapid and effective method of increasing the stiffness of granular infill of solution features in chalk. Typical lower- and upper-bound improvement curves are presented based on the observed minimum and maximum post-treatment stiffness. The results indicate that the degree of stiffness improvement was observed to generally reduce at depths greater than 5 m.

The authors' contributions to this issue aid in our understanding of the properties and dynamics of soil, providing exciting prospects for building foundations and the field of ground engineering. I hope you will find their work interesting and helpful. In addition, I'd like to extend an invitation for any who may have comments or questions to reach out to support@emerald.com so that we may explore these topics together.

REFERENCES

Chowdepalli B, Karnamprabhakara BK and Balunaini U (2023) Mechanical and environmental characteristics of geogrid-reinforced waste foundry sand beds. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **176(4)**: 222–232, https://doi.org/10.1680/jgrim.21.00022.

Dewar A, Wong C and Chitambira B (2023) Improvement of chalk solution feature infill by rapid impact compaction. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **176(4)**: 273–278, https://doi.org/10.1680/jgrim.21.00062.

Hosseinzade M, Hassanlourad M and Naeini SA (2023) Investigating the zeolite and bentonite adsorbent effect on different parameters of soil. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **176(4)**: 261–272, https://doi.org/10.1680/jgrim.21.00061.

Mandal MK and Paramkusam BR (2023) Assessment of alkali-induced heave in soil and its stabilisation using slag. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **176(4)**: 210–221, https://doi.org/10.1680/jgrim.21.00019.

Muthukkumaran K, Sindhujha R and Anusudha V (2023) Effect of alkali-treated sisal fibres on expansive clay. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **176(4)**: 233–248, https://doi.org/10.1680/jgrim.21.00033.

Ye Htun TH, Julnipitawong P, Chimoye W and Tangtermsirikul S (2023) Investigation of bottom ash as a partial replacement to conventional subbase soils. *Proceedings of the Institution of Civil Engineers – Ground Improvement* **176(4)**: 249–260, https://doi.org/10.1680/jgrim.21.00038.