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Editorial

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Editorial

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The Editorial Board of *Geotechnical Research* extends a warm invitation for article submissions to a themed issue centred around ‘Recent advances in biogeoscience applications in geotechnical and geoenvironmental engineering’. Biogeoscience techniques, such as bioprecipitation (microbial-induced and enzyme-induced calcite precipitation), biomineralisation, biocementation, bioremediation and bio-geopolymerisation, have gained considerable popularity in the fields of geotechnical and geoenvironmental engineering.

These eco-friendly techniques offer a cost-effective approach to ground improvement while also contributing to waste valorisation, supporting a circular economy and striving for a net-zero impact. The primary objective of this themed issue is to showcase the latest research and developments in the realm of biogeoscience applications within geotechnical and geoenvironmental engineering.

The themed issue will concentrate on the development of green biogeomaterials for geotechnical and geoenvironmental engineering applications through, but not limited to, the following areas:

- state-of-the-art literature and/or bibliometric reviews
- fundamental, theoretical and applied experiments on chemical and physical properties
- laboratory experiments, field observational methods and numerical modelling
- machine learning techniques, statistical and parametric analyses
- physicochemical, mineralogical and microstructural investigations
- practical engineering investigation, design and construction
- case studies.

Editor-in-Chief Ong is the champion of this themed issue and welcomes the immediate submission of abstracts for initial evaluation. Both Editors-in-Chief, Ong and Rahman, have agreed to offer a number of waivers for article publication charges (APC) for this themed issue.

The third issue of volume 10 (2023) includes three articles on practical applications in geotechnical engineering.

Dean (2023a) leverages recent theoretical advancements to address the stiffnesses of rigid circular footings placed on transversely isotropic linear elastic soil, including scenarios with interface friction. The study presents closed-form solutions for the vertical load and overturning moment on a frictionless interface, as well as for the vertical load and torsion on a frictional interface. The research can be applied to enhance foundation design and geotechnical engineering practices and optimise the fixity of offshore structures, considering cyclic wave loading and interface conditions.

Yang *et al.* (2023) prepared five sewage sludge samples with reduced organic content without significantly changing particle composition. Oedometer tests were conducted, revealing inverse S-shaped compression curves due to suction pressure resistance, which decreased exponentially with organic content. A regression equation was developed for the relation between suction pressure and organic content. The intrinsic compression parameters were found to be correlated with the organic content. The research findings can be applied to assess and understand the compressibility behaviour of sewage sludge with varying organic contents, enabling engineers and researchers to predict settlement and deformation under different stress conditions.

Khasib *et al.* (2023) investigated the use of palm-oil-fuel-ash (POFA)-based geopolymers to stabilise soft soil. Geopolymer was created by combining POFA with an alkaline activator solution. The study examined the mechanical and microstructural behaviours of two clayey soil types stabilised with different doses of the POFA-based geopolymer. POFA-based geopolymer significantly enhanced California bearing ratio values and reduced void ratios. Microstructural analysis indicated that the geopolymer gel-binding effect positively influenced the mechanical properties of the stabilised soils, making them suitable for soil stabilisation applications.

Geotechnical Research always encourages quick dissemination of research articles. Therefore, a number of research articles are published ahead of print, particularly the work on biogeotechnology (Omeregie *et al.*, 2023a, 2023b). The journal’s earlier issues also include a wide range of topics in geotechnical engineering applications (Azin and Roudsari, 2023; Daag *et al.*, 2023; Dean, 2023b; Troncone *et al.*, 2023; Xu *et al.*, 2023; Zada *et al.*, 2023).

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