

## Preface

We are extremely pleased to present the Proceedings of the 7<sup>th</sup> International Symposium on Deformation Characteristics of Geomaterials, IS-Glasgow 2019, which took place in Glasgow, UK in June 2019. The Symposium was co-organised by the University of Strathclyde in Glasgow and the University of Bristol, two institutions with long-standing records of innovation in geotechnics, under the patronage of the Technical Committee *Laboratory Stress Strain Strength Testing of Geomaterials* (TC101) of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE). Building on the tradition and success of the previous Symposia organised in Sapporo (Japan, 1994), Torino (Italy, 1999), Lyon (France, 2003), Atlanta (USA, 2008), Seoul (Korea, 2011) and Buenos Aires (Argentina, 2015), IS-Glasgow 2019 equally brought together researchers and practitioners to explore new directions in geomaterial testing. We are extremely proud of the response from the Geotechnical community, with 200 technical papers submitted and accepted for publication in these Proceedings from participants from 40 countries world-wide.

The technical core themes of the Symposium include: (i) Advanced laboratory testing of geomaterials in saturated and unsaturated states and interpretation; (ii) From laboratory testing to constitutive and numerical modelling of geomaterials; (iii) Application of advanced laboratory testing to practical geotechnical engineering. In addition to these traditional topics, sub-themes include cutting-edge techniques and approaches, for example, experimental micro-mechanics, non-invasive monitoring systems and new sensing technologies, advanced geomaterial stabilisation techniques, Discrete Element Modelling, physical modelling, geophysical and field methods. The Symposium is also enriched by the inclusion of a special sub-theme on the Behaviour of Geotechnical Interfaces.

We are also particularly proud to introduce Prof. Junichi Koseki from the University of Tokyo who delivered the 5<sup>th</sup> Bishop Lecture, established in honour of Professor Alan W. Bishop, and the Keynote invited speakers: Emmanouil M Tentzeris (Georgia Institute of Technology, USA), Torsten Wichtmann (Bauhaus-Universität Weimar, Germany), Reiko Kuwano (University of Tokyo, Japan), Lyesse Laloui (École Polytechnique Fédérale de Lausanne, Switzerland), Giaochino Viggiani (Université Grenoble Alpes, France), Pierre Delage (École des Ponts ParisTech, France), Cristina Jommi (Delft University of Technology, the Netherlands & Politecnico di Milano, Italy), Jonathan Chambers (British Geological Survey, UK), Lidija Zdravkovic (Imperial College, UK) and Andrew Ridley (Geotechnical Observations, UK). The Bishop and Keynote Lecture papers are published in a special issue of the *Geomechanics for Energy and the Environment Journal*. A key goal of IS-Glasgow 2019 was to engage with the full spectrum of geotechnical specialists, from early career engineers and researchers through to world-leading experts. This aim was also reflected in the selection of the Theme Lecturers and the organisation of the technical sessions.

We would like to express our thanks to all the members of the local organising committee, especially Miss Katharine Houston, one of the most competent professionals we have ever worked with. We also thank the Technical Committee members for the animation of the technical parallel sessions, promotion of the symposium in their countries, and their terrific support in the undertaking of the paper review for which many of the authors wished to express their appreciation for the input and feedback. We thank Hans Henning Stutz and Alejandro Martinez for their efforts in organising the special session on the “*Behaviour of Geotechnical Interfaces*”. Our gratitude goes towards the Scientific Committee, including members of the ISSMGE TC101, for their continuous support and guidance throughout the past four years. We also acknowledge the tremendous support from Prof. Junichi Koseki, former TC101 Chair, and Prof. Lyesse Laloui, former TC101 Vice-Chair, as well as current TC101 Chair, Prof. Matthew Coop, and TC101 Secretary, Prof. Satoshi Nishimura.

Most of all, we want to thank all the authors and participants for their invaluable contribution to the success of this international symposium, IS-Glasgow 2019.

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