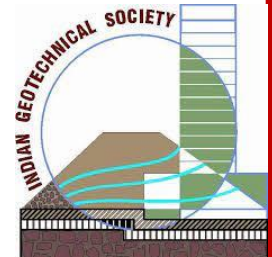




**International Society for Soil Mechanics and
Geotechnical Engineering (ISSMGE)
[TC106 Unsaturated Soils]**








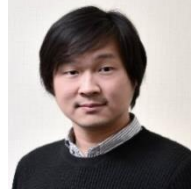

**Pre-Conference Workshop of
Indian Geotechnical Conference, 2021**

**“Relevance of Unsaturated Soil Mechanics in Practice”
15 Dec 2021 [Virtual mode] 9:00 – 18:30 [IST]**

Preamble:

Terzaghi (1936) effective stress equation not only provided a rational framework for explaining the mechanical behavior of saturated soils but also used as a tool in the design of various geotechnical infrastructure. Inspired by Terzaghi’s work, Bishop (1959) has put forward the effective stress equation for explaining the unsaturated soils behavior, which are more widely distributed over many regions in the world. Since then, there has been significant research interest all over the world towards better understanding the unsaturated soils behavior. However, the focus of most of these studies were directed towards understanding the hydraulic and mechanical properties of unsaturated soils. These studies and other recent innovations are used as tools in the design of several geotechnical and geo-environmental infrastructure which include pavements, foundations/ earth works, retaining walls, waste containment facilities to list a few. The concepts of unsaturated soils are also being extensively used in societal relevant projects like agriculture, forestry, ecological practices, bioengineering and reversing land degradation. This workshop on “Relevance of unsaturated soil mechanics in practice” presents a glimpse of implementing the mechanics of unsaturated soils concepts in various engineered projects. The key objective of this workshop is to provide the participants a platform to explore innovative solutions not only related to civil structure but also to the new realms of looming problems related to climate change, land degradation, arid land engineering and food security.

Speakers From Academia

	Osmotic effects on suction components and behaviour of compacted soils Dr. T. Thyagaraj, Professor, Indian Institute of Technology Madras		Bearing capacity of shallow foundations in unsaturated soils Dr. Sai K. Vanapalli, Professor, University of Ottawa, Canada
	Collapse behaviour of unsaturated soils Dr. Sudhakar M Rao, Professor, Indian Institute of Science Bangalore		Addressing rainfall-induced landslides – Beyond the realm of classical soil mechanics Dr. T. Venkata Bharat, Professor, Indian Institute of Technology Guwahati
	Constitutive modelling of unsaturated soils Dr. Jayantha Kodikara, Professor, Monash University, Australia		Root bio-hydro-mechanical reinforcement of unsaturated soils: experiments and modelling Dr. Anthony Leung, Associate Professor, HKUST, Hong Kong
	Coupled thermo-hydro-mechanical behaviour of unsaturated soils Dr. Snehasis Tripathy, Professor, Cardiff University, U.K.		Prediction of heave for Chennai soil using the Soil-Water Characteristics Curve Dr. K. Premalatha, Professor, College of Engineering Guindy, Anna University

Speakers From Industry

	<p>Evaluation of alternative methods of calculating volume change in unsaturated soils Ms. Krystel Robson, GDS Instruments</p>		<p>Improving the outcomes of geomaterial field monitoring campaigns Dr. Colin S. Campbell, METER Group, Inc., USA</p>
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Members of Panel Discussion

			
<p>Dr. S. Sreedeeep Professor, IIT Guwahati</p>	<p>Dr. Munwar Basha Associate Professor, IIT Hyderabad</p>	<p>Dr. Rajesh Sathiyamoorthy Associate Professor, IIT Kanpur</p>	<p>Dr. Ramakrishna Bag Assistant Professor, IIT Patna</p>
			
<p>Dr. B. Janaki Ramaiah Assistant Professor, IIT Tirupati</p>	<p>Dr. Venkata Uday Kala Assistant Professor, IIT Mandi</p>	<p>Dr. Lalit Borana Assistant Professor, IIT Indore</p>	

Registration: No separate registration is required for participants enrolled for IGC 2021.

For others, kindly register via [link](https://forms.gle/QuLohgDSc1WKwHrW8) <https://forms.gle/QuLohgDSc1WKwHrW8>

Limited registration available based on first come basis.

Organized by



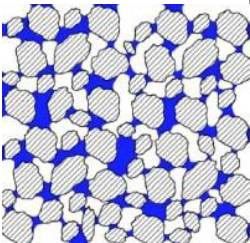

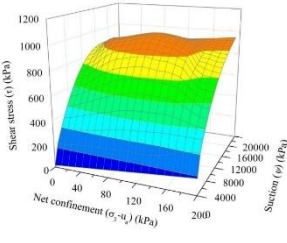

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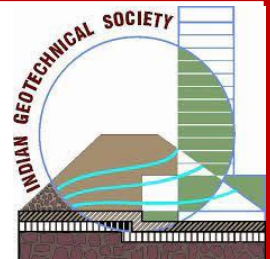


Dr. Sai K. Vanapalli
Professor
University of Ottawa,
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**International Society for Soil Mechanics and
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[TC106 Unsaturated Soils]**



**Pre-Conference Workshop of
Indian Geotechnical Conference, 2021**

**“Relevance of Unsaturated Soil Mechanics in Practice”
15 Dec 2021 [Virtual mode] 9:00 – 18:45 [IST]**

Inaugural Ceremony	
9.00-9.05 – Dr. Rajesh Sathiyamoorthy, Opening remarks 9.05-9.10 – Dr. K. Muthukumar, Organising Chairman, IGC 2021, Welcome Address 9.10-9.20 - Dr. N.K. Samadhiya –President, Indian Geotechnical Society, Chief Guest Address	
Technical Session I (9:20-13:05)	
Chair: Dr. G. Madhavi Latha, Professor, Indian Institute of Science Bangalore	
9:20 - 9:50 [25L+5D]	Osmotic effects on suction components and behaviour of compacted soils Dr. T. Thyagaraj, Professor, Indian Institute of Technology Madras
9:55 - 10:35 [35L+5D]	Bearing capacity of shallow foundations in unsaturated soils Dr. Sai K. Vanapalli, Professor, University of Ottawa, Canada
10:40 - 11:20 [35L+5D]	Collapse behaviour of unsaturated soils Dr. Sudhakar M Rao, Professor, Indian Institute of Science Bangalore
11:25 – 12:05 [35L+5D]	Addressing rainfall-induced landslides – Beyond the realm of classical soil mechanics Dr. T. Venkata Bharat, Professor, Indian Institute of Technology Guwahati
12:10 - 12:40 [25L+5D]	Prediction of heave for Chennai soil using the Soil-Water Characteristics Curve Dr. K. Premalatha, Professor, College of Engineering Guindy, Anna University
12:45 – 13:05 [15L+5D]	Evaluation of alternative methods of calculating volume change in unsaturated soils Ms. Krystel Robson, GDS Instruments
13:10 – 14:00 Lunch Break	
Technical Session II (14:00-17:15)	
Chair: Dr. B.V.S. Viswanadham, Professor, Indian Institute of Technology Bombay	
14:00-14:20 – Dr. David Toll, Professor, Durham University President, ISSMGE TC106 (Unsaturated soils)	
14:25 – 15:05 [35L+5D]	Constitutive modelling of unsaturated soils Dr. Jayantha Kodikara, Professor, Monash University, Australia
15:10 - 15:50 [35L+5D]	Root bio-hydro-mechanical reinforcement of unsaturated soils: experiments and modelling Dr. Anthony Leung, Associate Professor, HKUST, Hong Kong
15:55 - 16:35 [35L+5D]	Coupled thermo-hydro-mechanical behaviour of unsaturated soils Dr. Snehasis Tripathy, Professor, Cardiff University, U.K.
16:40 – 17:00 [15L+5D]	Improving the outcomes of geomaterial field monitoring campaigns Dr. Colin S. Campbell, METER Group, Inc., USA
17:15-18:45 Panel Discussion and Concluding Session	
Moderator: Dr. Sai K. Vanapalli, Professor, University of Ottawa	
Dr. S. Sreedeeep (IIT Guwahati), Dr. Munwar Basha (IIT Hyderabad), Dr. Rajesh Sathiyamoorthy (IIT Kanpur), Dr. Janaki Ramaiah (IIT Tirupati), Dr. Ramakrishna Bag (IIT Patna), Dr. Venkata Uday Kala (IIT Mandi), Dr. Lalit Borana (IIT Indore) [10L each]	

L-Lecture, D- Discussion

Organized by		
Dr. Rajesh Sathiyamoorthy Associate Professor IIT Kanpur	Dr. S. Sreedeeep Professor IIT Guwahati	Dr. Sai K. Vanapalli Professor University of Ottawa