



# 14<sup>th</sup> ISEMA Conference Down Under 2023

25-29 September, Brisbane, Australia



## Monday 25 September 2023

Time		Title
4pm – 7pm		Welcome Event at Falons Brewing Co

## Tuesday 26 September 2023

Time	Presenter	Title
9:00 – 9.40am		Registration
9.40 – 10.00 am		Greeting
10.00 – 10.45 am	Susanne Schmidt	Towards a sustainable future – shining the light on Australia's landscapes, food systems and culture
10.45 – 11.30 am		Coffee Break
11.30 – 11.50 am	Scott Jones	Evaluation of the Real Permittivity Output from a 69 MHz Admittance-Based Water Content Sensor: Teros 15
11.50 – 12.10 pm	Ebbe Nyfors	Non-Intrusive Microwave Cavity Resonator Sensor for Measuring Materials Flowing in Pipes
12.10 – 12.30 pm	Farizal Hakiki	Dielectric Spectroscopy: Combined Impedance Spectroscopy and Time Domain Reflectometry
12.30 – 1.30 pm		Lunch Break
1.30 – 2.30 pm	Paul Ben Ishai & Yuri Feldman	A Dielectric History of Water
2.30 – 2.50 pm	Amrit Zoad*	Novel Metamaterial-Inspired Waveguide Detector for Flow Measurements of Wood Pellets
2.50 – 3.20 pm		Afternoon Tea
3.20 – 3.40 pm	Theodore Brierre*	Broadband Dielectric Characterization with Flow Through Coaxial Cell
3.40 – 4.00 pm	Andrzej Wilczek*	Method for Determining the Sensitivity Zone of a Two-Rod TDR Soil Moisture Probe Based on the Module of the Reflection Coefficient Spectrum
4.00 – 4.20 pm	Wenyi Sheng*	Considerations on Measurement Frequency of Electromagnetic Sensors for Soil Moisture Determination
4.20 – 4.40 pm	Sofiane Ait Hamadouche*	On the Use of Molecular Dynamics to Compute the Dielectric Permittivity of C-S-H
4.40 – 5.00 pm	Juando Gonzalez-Teruel*	Conductive Fabric as a Shorting Calibration Standard for Dielectric Open-Ended Coaxial Probes

### Wednesday 27 September 2023

Time	Presenter	Title
9.30 – 10.30 am	Matthias Buecker	Numerical modelling of low-frequency dielectric properties
10.30 – 11.00 am		Coffee Break
11.00 – 11.20 am	Yu-Jen Shen	Ultra Broadband Electrical Properties of Rocks
11.20 – 11.40 am	Farizal Hakiki	Hydrocarbon Column Detection with Time Domain Reflectometry: Laboratory Study
11.40 – 12.00 pm	Alexander Wiendl	TDR-Measurement of Filtration Mechanisms of High-Density Bentonite Suspensions for the Application in Tunnel Engineering
12.00 – 1.00 pm		Lunch Break
1.00 – 1.20 pm	Ralf Wagner	Modelling of the Permittivity of Green Bricks
1.20 – 1.40 pm	Tae Jun Yoon*	Identification of Structural Inhomogeneities in the Surfactant-Free Microemulsion Composed of Water, n-Hexane and 2-Propanol Based on the Open-Ended Coaxial Probe Technique
1.40 – 2.00 pm	Kouji Shibata*	Dielectric Evaluation of Ionic Electrolyte Solutions Based on the Cut-Off Waveguide Reflection Method
2.00 – 3.00 pm		Afternoon Tea
3.00 – 4.00 pm	Olivier Francais*	Lab On a Chip for dielectric characterization of biological media
4.00 – 5.15 pm		Bridging Time at the Patina Bar
5.30 – 10.30 pm		Outback Spectacular



**Thursday 28 September 2023**

Time	Presenter	Title
9.00 – 10.00 am	J Carlos Santamarina*	Multiphysics Sediment Characterization and Process Monitoring
10.00 – 10.20 am	Partha Mishra	EM Methods for Assessing State Variables of Tailings
10.20 – 10.40 am	Ralf Wagner	High-Temperature Permittivity of Clay
10.40 – 11.00 am	Yangjun Zhang*	Analysis of electromagnetic coupling between two spiral resonators in air and water for wireless power transfer
11.00 – 11.30 am		Coffee Break
11.30 – 12.30 pm	Chih-Ping Lin	Transmission Line Modeling and Signal Processing for Pragmatic Dielectric
12.30 – 1.30 pm		Lunch Break
1.30 – 1.50 pm	Guanxi Yan	The Performance Improvement of Spatial TDR Inversion Technique for Measuring Moisture Distribution
1.50 – 2.10 pm	Sebastian Quintero Olaya	Broadband Dielectric Investigations of Compacted Soil-Organic Mixtures
2.10 – 2.30 pm	Zia Nadir*	Investigating the Effects of 2.4 GHz Microwave Radiation on Plant Growth and Moisture Content
2.30 – 3.00 pm		Afternoon Tea
3.00 – 3.20 pm	Benhui Fan*	Dielectric Measurement by Open-Ended Coaxial Line for Road Materials
3.20 – 3.40 pm	Martin Cesbron*	Broadband Dielectric Characterization of Bentonite Suspensions
3.40 – 4.00 pm	Budzeń Małgorzata*	The Complex Dielectric Permittivity Spectrum of Different Types of Soil After Compaction
4.00 – 4.20 pm	Thilo Bintz*	Investigation of Capillary Water Absorption of Clinker-Reduced Binders by NMR Relaxometry
4.30 – 4.40 pm	Tulio Honorio*	Quantifying the Processes at the Origin of the Dielectric Response of Cement-Based Materials with Molecular Dynamics Simulations

**Friday 29 September 2023**

Time	Presenter	Title
9.00 – 9.20 am	Samir Trabelsi*	A Microwave Method for Nondestructive Sensing of Bulk Density, Moisture Content, and Water Activity of Granular Agricultural Products
9.20 – 9.40 am	Sabine Kruschwitz & Renata Lorenzoni	Investigation of the Hydration of Clinker-Reduced Cementitious Binders by <sup>1</sup> H NMR
9.40 – 10.40 am	Konstanty Bialkowski	Dielectric properties and and biomedical applications
10.40 – 11.10 am		Coffee Break
11.10 – 11.30 am	Cheng Chen*	Biomedical Electromagnetic Sensing of Dynamic Processes
11.30 – 11.50 am	Pei Xu & Paul Ben Ishai	AC-Induced Electromagnetic Field for Fouling and Scaling Control During Reverse Osmosis Membrane Desalination
11.50 – 12.10 pm	Foad Brakhasi	Dual-Frequency Radiometry Techniques for Soil Moisture Profile Estimation
12.10 – 12.30 pm	Frank Wagner	Development of Porous Ceramic Sensor Elements for Monitoring the Drying Process of Calcium Sulfate Screeds
12.30 – 12.40 pm		Closing of Conference
12.40 – 1.40 pm		Lunch Break