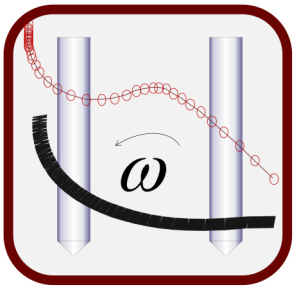

Program Book

International Workshop on Impedance Spectroscopy

IWIS 2026

September 22–25, 2026

Technische Universität Chemnitz
Germany

TECHNISCHE UNIVERSITÄT
CHEMNITZ

IWIS 2026 Organizers

General Chairs
Prof. Olfa Kanoun (DE) — TU Chemnitz
Prof. Pasquale Arpaia (IT) — Università di Napoli Federico II

Honorary Chairs
H.-R. Tränkler (DE) · J. Himmel (DE) · M. Min (EE)

Organizing Committee
A.Y. Kallel (DE), M. Jemal (DE), A. Trabelsi (DE), H. Cherif (DE), T. Keutel (DE), F. Viehweger (DE), K. Schütze (DE), N. Moccaldi (IT)

General Information

Getting Started in Chemnitz

A short checklist for your first hours in the city:

- **From the main station to the venue** — take tram 3, or city train C13/C14/C15, towards *Technopark Chemnitz* and get off at *TU Campus (Reichenhainer Straße)*. The ride takes about 12 minutes and the conference building is directly at the stop.
- **Buy a transport ticket** before or on boarding — a Tageskarte (day ticket) is the simplest option if you plan more than one trip in a day. See *Getting Around in Chemnitz*.
- **Register at the workshop desk** in the Weinholdbau foyer to collect your badge, the programme and the Wi-Fi details.
- **Lunch** is in the Mensa directly across Reichenhainer Straße.
- **Cash** — most restaurants and shops take cards, but some smaller cafés and bakeries in Chemnitz are still cash-only. There are ATMs in the city centre and at the main station.
- **Emergency numbers** — 112 for ambulance and fire, 110 for police. Pharmacies display the nearest out-of-hours service on the door.

The organising team wears IWIS badges throughout the workshop — please just ask if anything is unclear.

The City of Chemnitz

Chemnitz is the third-largest city in Saxony, at the northern edge of the Ore Mountains, and a centre of automotive engineering, mechanical and plant engineering, and information technology. Its industrial past — the thermos flask and the first mild detergent were both invented here — earned it the name "the Saxon Manchester", and that history is still visible across the city.

Chemnitz was **European Capital of Culture in 2025**. Much of what that year built remains open: the restored Kaßberg quarter, one of the

largest intact areas of Wilhelminian-era architecture in Europe; the *Purple Path* art and sculpture trail running through the city and the surrounding region; and a city centre rebuilt over the past twenty-five years by architects including Helmut Jahn, Hans Kollhoff and Christoph Ingenhoven.

Worth seeing

- Kunstsammlungen Chemnitz and the **Museum Gunzenhauser** — one of the most important collections of classical modern art in Germany.
- **Industriemuseum Chemnitz** — the region's industrial history, in a former foundry.
- The **Karl-Marx-Monument** ("Nischel"), the city's best-known landmark.
- The **Old Town Hall**, for Klinger's mural "Arbeit — Wohlstand — Schönheit" and Neo Rauch's "Die Abwägung" in the council chamber.
- The **Chemnitzer Gewölbegänge** — a three-level underground tunnel system begun in 1531.
- The castle pond (Schloßteich) and the historic city park, for a quiet walk.

Conference Venue

Weinholdbau, TU Chemnitz, Reichenhainer Straße 70, 09126 Chemnitz, Germany

Sessions, tutorials and the exhibition all take place in the Weinholdbau on the Reichenhainer Straße campus of Technische Universität Chemnitz. The tram and city-train stop directly in front of the campus is **TU Campus (Reichenhainer Straße)**. The Mensa, where lunch is served, is on the opposite side of the street, and parking is available beside it.

Travel to Chemnitz

By train

- Get off at **Chemnitz Hauptbahnhof**. Chemnitz has regional and long-distance connections via Leipzig, Dresden and Zwickau.
- Take tram 3, or city train C13, C14 or C15, towards *Technopark Chemnitz*.
- Get off at *TU Campus (Reichenhainer Straße)* — about 12 minutes.

By air

- The nearest airports are **Leipzig/Halle (LEJ)** and **Dresden (DRS)**, each roughly 1–1.5 hours away by car or train. Frankfurt (FRA), Munich (MUC) and Berlin (BER) all have direct rail connections onward to Chemnitz.
- From Dresden airport by car, join the A4 towards Chemnitz/Erfurt.
- From Leipzig/Halle airport by car, join the A14 towards Dresden, then the A4 towards Chemnitz/Erfurt at *Dreieck Nossen*.

By car from the A72

- Take the exit *15-Chemnitz Süd*.
- Follow the B173 / Neefestraße towards *Stadtzentrum*.
- After 1 km turn right onto the B169 / *Südring*.
- After 5.5 km take the exit *Reichenhainer Straße* towards *Technische Universität*.
- The campus follows after 1.5 km.

By car from the A4

- Take the exit *Chemnitz Mitte* towards the city centre.
- Follow the road for roughly 5 km, straight on through the large junctions.
- Turn right where signposted to *Reichenhainer Straße* and *Technische Universität*.
- After 1.5 km you reach the campus. Parking is available next to the Mensa.

Taxi — Chemnitz taxi service: +49 371 369 000

Getting Around in Chemnitz

Trams, city trains and buses are run by **CVAG** within the VMS regional network. Most lines meet at the *Zentralhaltestelle* in the city centre. The whole of Chemnitz lies in **fare zone 13**, so a single-zone ticket covers every journey inside the city, including the trip between the main station and the campus.

Fares (from 1 April 2026)

Einzelfahrt single trip, 1 zone	**€3.30**	valid 1 hour from validation
Tageskarte day ticket, 1 zone	**€6.60**	valid until 04:00 the next morning

A **Deutschlandticket** or a **Sachsen-Ticket** is also valid on all of the above.

Where to buy a ticket

- **On board** — machines are in the middle of every tram and city train; contactless cards are accepted. On **buses**, board through the front door and buy from the driver.
- **At the stop** — ticket machines stand at the larger stops, including the Hauptbahnhof and the Zentralhaltestelle.
- **By app** — *MOOVME* (the CVAG/VMS app), *DB Navigator*, the *MRB* app, or *Handyticket Deutschland*. Buying in the app avoids the validation step entirely.
- **In person** — the CVAG Service Centre at the Zentralhaltestelle, and sales points across the city, sell tickets in advance.

Validating — a ticket bought *at a stop* must be stamped in the orange validator immediately after boarding. A ticket bought *on board* or *in an app* is already valid and must not be stamped. Travelling without a validated ticket is treated as fare evasion.

Timetables — www.cvag.de · www.vms.de · www.bahn.de

Lunch, Food & Drink

Lunch is served in the Mensa of TU Chemnitz, directly across the street from the conference building, where a room is reserved for IWIS participants.

Where to eat — all checked in September 2026. Opening days are noted because several places close on weekdays:

Saxon & German

- Turm-Brauhaus - Neumarkt 2 (house brewery, Saxon cooking; open daily)
- Diebels Fasskeller - An der Markthalle 3 (Saxon and German; open daily from 11:00)

Mediterranean & European

- Poseidon - Straße der Nationen 120 (Greek, at Johannisplatz; open daily 11:00-23:00)
- Buono - Theaterstraße 7 (Italian)
- Brazil - Innere Klosterstraße 10 (grill, burgers and cocktails; open daily)

Middle East & Levant

- Safran - Promenadenstraße 5 (Persian/Iranian, in the centre; Tue-Fri lunch and dinner, closed Mon)
- El-Mina Bistro - Theaterstraße 38 (Lebanese and Arabic)
- Malula - Georgstraße 21 (Syrian; closed Tue)
- Yasmin - Straße der Nationen 35A (Syrian, small and informal)
- Gandoom - Zietenstraße 32 (Afghan, on the Sonnenberg; Thu-Sun 17:00-22:00 only)

Asia

- Moli Modo - Markt 19 (Vietnamese and Asian fusion, sushi; open daily)
- Delhi Palast - Zwickauer Straße 10 (Indian; lunch and dinner, closed Mon)

Eastern Europe

- Sachsenperle - Fürstenstraße 64 (Ukrainian and Russian home cooking; from 17:00, closed Mon)

Worth booking ahead

- alexxanders - Ludwig-Kirsch-Straße 9 (MICHELIN Guide; Wed-Sat only)
- Restaurant Villa Esche - Parkstraße 58 (MICHELIN Guide, in the Henry van de Velde villa; closed Mon)
- Janssen - Schloßstraße 12 (international, in a former hosiery factory; closed Sun and Mon)

Finding somewhere to eat — restaurants open and close between editions, so these live listings are the reliable guide:

- **Chemnitz City** — the city centre's own restaurant directory and the *Gastromeile* quarter: chemnitzcity.de/gastromeile
- **Chemnitz Tourism** — chemnitz.travel/gastro
- **TripAdvisor** — ratings, opening hours and booking: tripadvisor.com → Chemnitz → Restaurants

Dinner & Social Programme

Conference Dinner

Special Dinner: Turmbrauhaus Chemnitz
Thursday, September 24th, 2026 at 19:00

Address: Neumarkt 2, 09111 Chemnitz, Germany

For details, visit the Special Dinner page.

Social Programme
Social Event: Underground Mystery Adventure
Wednesday, September 23rd, 2026 at 16:00

If you are interested, please register at the registration desk.
Further information will be provided there.

For details, visit the Social Event page.

Internet Access

Wi-Fi covers the whole campus. There are two ways in:

1. eduroam — if your home institution takes part in eduroam, your usual university credentials work here with no further setup. This is the recommended route for academic participants and is what most attendees will use.

2. The *tu-chemnitz.de* network — the guest network for events, for anyone without eduroam.

Network	tu-chemnitz.de
WPA2 key	IWIS2026

If you have trouble connecting, please ask at the workshop desk.

Contact

Chair for Measurement and Sensor Technology
Technische Universität Chemnitz
Reichenhainer Straße 70
09126 Chemnitz
Germany

Tel: +49 (0)371 / 531 - 24480
Email: iwis@tu-chemnitz.de
URL: https://www.tu-chemnitz.de/etit/messtech/iwis/

Time Table

Day 1 · Tuesday, September 22, 2026

08:30	Registration · Foyer
09:00	The Beginner's Tutorial to Impedance Spectroscopy · Room C25.040
10:15	Coffee Break · C25.043
10:45	Distribution of Relaxation Times (DRT) for Impedance Spectroscopy (Prof. Francesco Ciucci) · Room C25.040
12:00	Lunch Break · Mensa
13:00	Electrical Characterization of Biological Matter in Time Domain (Prof. Dr. Uwe Pliquett) · Room C25.040
14:15	EIS 101 (Prof. Andrzej Lasia) · Room C25.040
15:30	Coffee Break · C25.043
16:00	Application of EIS in corrosion science and electrocatalysis (Prof. Juliusz Winiarski) · Room C25.040

Day 2 · Wednesday, September 23, 2026

08:30	Registration · Foyer
09:00	Tutorial Workshop: Introduction of Compensation Methods for Impedance Spectroscopy (Prof. Dr.-Ing. Konstantin Weise + Industrial Expert Martin Bulst) · Room C25.040
10:15	Coffee Break · C25.043
10:45	Tutorial Workshop: Introduction of Compensation Methods for Impedance Spectroscopy (Prof. Dr.-Ing. Konstantin Weise + Industrial Expert Martin Bulst) · Room C25.040
12:00	Lunch Break · Mensa
13:00	The integration of on-chip EIS in smart multimodal sensors (Prof. Dr.-Ing. Moustafa Nawito) · Room C25.040
15:00	Social event

Day 3 · Thursday, September 24, 2026

08:00	Registration · Foyer
08:30	Opening · Foyer
09:00	Plenary Talk: Toward Portable Multiplexed Electronic Nose Platforms Using Impedance Spectroscopy and Surface Acoustic Wave Technologies for Multiselective Gas Recognition · Room C25.012
09:45	Plenary Talk: A comparison of impedance based characterization and modeling of high and low temperature fuel cells and electrolyzers · Room C25.012
10:30	Coffee Break · C25.021
11:00	Fundamentals · Room C25.012 (3 papers)
12:00	Lunch Break · Mensa
13:00	Materials · Room C25.012 (5 papers) Modeling and Signal Processing · Room C25.017 (5 papers)
14:40	Coffee Break · C25.021
15:10	Biomedical · Room C25.012 (3 papers) Energy Storage, Batteries and Fuel Cells · Room C25.017 (3 papers)
16:10	Poster Session · Foyer (17 papers) Exhibition · Foyer Hackathon · Foyer
17:00	Circle of Experts in Impedance Spectroscopy (CEIS) · Room C25.017 SheIWIS · C25.012
19:00	Dinner · -

Day 4 · Friday, September 25, 2026

08:30	Registration · Foyer
09:00	Plenary Talk: Signal Analysis for Electrochemical Systems: Impedance, Noise and Ultrafast Spectroelectrochemistry · Room C25.012
09:45	Plenary Talk: Biomedical Engineering in Uruguay and the EU-Mercosur Partnership Agreement: the case of Bioimpedance and Ionizing Technologies · Room C25.012
10:30	Coffee Break · C25.021
11:00	Biological, Food and Environmental Applications · Room C25.012 (3

	papers)
12:00	Lunch Break · Mensa
13:00	Sensors · Room C25.012 (6 papers)
15:00	Closure · Room C25.012

Programme

Day 1 · Tuesday, September 22, 2026

08:30–09:00 Registration · Foyer

09:00–10:15 The Beginner's Tutorial to Impedance Spectroscopy · Room C25.040

Session chair: Amin Fischer

Dr.-Ing. Ahmed Yahia Kallel

Professorship of Measurement and Sensor Technology, Chemnitz University of Technology, Germany

Researcher at the Professorship of Measurement and Sensor Technology at Chemnitz University of Technology, where he earned his Dr.-Ing. His work centres on embedded impedance spectroscopy: measurement systems and signal processing that bring impedance measurement onto resource-constrained hardware. He serves on the IWIS Program and Organizing Committees and has taught previously at ASIS.

10:15–10:45 Coffee Break · C25.043

10:45–12:00 Distribution of Relaxation Times (DRT) for Impedance Spectroscopy (Prof. Francesco Ciucci) · Room C25.040

Session chair: Ayoub Trabelsi

Prof. Francesco Ciucci

Chair of Electrode Design for Electrochemical Energy Systems, University of Bayreuth, Germany

Holds the Chair of Electrode Design for Electrochemical Energy Systems at the University of Bayreuth. PhD from Caltech, postdoc in applied mathematics at Heidelberg, previously professor at HKUST. Internationally recognized for his work on the Distribution of Relaxation Times (DRT) method, including Bayesian and deep-learning-based DRT techniques.

12:00–13:00 Lunch Break · Mensa

13:00–14:15 Electrical Characterization of Biological Matter in Time Domain (Prof. Dr. Uwe Pliquett) · Room C25.040

Session chair: Tareq Almustafa

Prof. Dr. Uwe Pliquett

Institut für Bioprozess- und Analysemesstechnik (iba), Heilbad Heiligenstadt; Honorary Professorship in Biophysics, TU Ilmenau, Germany

Doctorate in engineering (1991). Has developed novel measurement systems and theoretical models for analyzing dielectric spectra of biological cell suspensions, advancing the understanding of electromagnetic field interaction with biological matter.

14:15–15:30 EIS 101 (Prof. Andrzej Lasia) · Room C25.040

Session chair: Milaine Jebali

Prof. Andrzej Lasia

Professor Emeritus, Chemistry Department, Université de Sherbrooke, Québec, Canada

PhD in Electrochemistry, University of Warsaw (1975); at Université de Sherbrooke since 1983. A leading expert in electrochemical impedance spectroscopy with over 14,600 citations, and author of the reference book "Electrochemical Impedance Spectroscopy and its Applications" (Springer, 2014).

15:30–16:00 Coffee Break · C25.043

16:00–17:15 Application of EIS in corrosion science and electrocatalysis (Prof. Juliusz Winiarski) · Room C25.040

Session chair: Naoures Ben-Fadhel

Prof. Juliusz Winiarski

Department of Advanced Material Technologies, Wrocław University of Science and Technology (WUST), Poland

Heads the Surface Technology Group at WUST. PhD (2012) on chrome-free conversion coatings on zinc and its alloys, habilitation (2020). Serves on the Scientific Council of "Ochrona Przed Korozją" and technical committees for international corrosion conferences.

Day 2 · Wednesday, September 23, 2026

08:30–09:00 Registration · Foyer

09:00–10:15 Tutorial Workshop: Introduction of Compensation Methods for Impedance Spectroscopy (Prof. Dr.-Ing. Konstantin Weise + Industrial Expert Martin Bulst) · Room C25.040

Session chair: Dr. Thomas Keutel

Prof. Dr.-Ing. Konstantin Weise + Martin Bulst

Leipzig University of Applied Sciences (HTWK Leipzig) & Sciospec Scientific Instruments GmbH, Germany

A joint 3-hour hands-on session: Prof. Weise introduces the theoretical and mathematical background of compensation methods for impedance spectroscopy, after which Martin Bulst (Sciospec) demonstrates their practical implementation, covering setup, calibration, and common pitfalls.

10:15–10:45 Coffee Break · C25.043

10:45–12:00 Tutorial Workshop: Introduction of Compensation Methods for Impedance Spectroscopy (Prof. Dr.-Ing. Konstantin Weise + Industrial Expert Martin Bulst) · Room C25.040

Session chair: Dr. Thomas Keutel

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12:00–13:00 Lunch Break · Mensa

13:00–14:15 The integration of on-chip EIS in smart multimodal sensors (Prof. Dr.-Ing. Moustafa Nawito) · Room C25.040

Session chair: Cherif Ouni

Prof. Dr.-Ing. Moustafa Nawito

Professor of Electrical Engineering, Dean of the Faculty of IT & Technology, IU International University of Applied Sciences, Germany

Founder and CEO of Polymath Analog, Stuttgart. Internationally recognized for pioneering work on on-chip electrochemical impedance spectroscopy systems, with a focus on implantable biosensors and biomedical integrated circuits.

15:00–18:00 Social event

Day 3 · Thursday, September 24, 2026

08:00–08:30 Registration · Foyer

08:30–09:00 Opening · Foyer

09:00–09:45 Plenary Talk: Toward Portable Multiplexed Electronic Nose Platforms Using Impedance Spectroscopy and Surface Acoustic Wave Technologies for Multiselective Gas Recognition · Room C25.012

Session chair: Prof. Olfa Kanoun

Prof. Bilel Hafsi

Institute of Electronics, Microelectronics and Nanotechnology (IEMN) & ICAM school of engineering, Lille, France

Associate Professor at ICAM Lille and member of the NCM group. PhD in micro/nanoelectronics (Lille, 2016). Now works on portable, low-cost AD5933-based impedance spectroscopy platforms for gas sensing (electronic nose) and skin bioimpedance.

09:45–10:30 Plenary Talk: A comparison of impedance based characterization and modeling of high and low temperature fuel cells and electrolyzers · Room C25.012

Session chair: Prof. Pasquale Arpaia

PD Dr.-Ing. André Weber

Institute for Applied Materials — Electrochemical Technologies (IAM-ET), Karlsruhe Institute of Technology (KIT), Germany

Leads the Batteries, Fuel Cells and Electrolysis group at KIT/IAM-ET. Research spans impedance-based characterization and modeling of electrochemical energy converters and storage devices, from porous-electrode microstructure to full-system dynamics.

10:30–11:00 Coffee Break · C25.021

11:00–12:00 Fundamentals · Room C25.012

Session chair: PD Dr.-Ing. André Weber

IWIS26-002 Turning Drift into Information: Time-Resolved Impedance Spectroscopy of Transient States
Jaroslav Herman, Peter Kúš, Tomáš Hrbek, Iva Matolínová

IWIS26-020 Temperature-dependent thresholds for Lin-KK through average error analysis across large-scale dataset
Marco De Gregorio, Antonello Avella, Walter Zamboni

IWIS26-011 Multidimensional Limit of Detection for Quartz Crystal Microbalance Impedance Spectroscopy: Implications of Linear and Nonlinear Dimensionality Reduction
Elcim Kirimli, Ceyhun E. Kirimli

12:00–13:00 Lunch Break · Mensa

13:00–14:40 Materials · Room C25.012

Session chair: Prof. Bilel Hafsi

IWIS26-007 Assessment of Second-Generation Quantum Sensors for Inline Monitoring of Steel Microstructural Transformations
Marc Simoneit, Thomas Thuilot, Dominik Thiem, Andreas Hennig

IWIS26-041 Baseline Calibration for Piezoelectric Ultrasonic Guided Waves Using Electromechanical Impedance
Zheng Hu, Mingyuan Li, Yanxun Xiang

IWIS26-014 A Quasi-Newton Approach to Gas-Hydrate-Oriented Circuit Fitting Problems
Mateus Yamada Müller, Everton Trento Junior, Jean P. Nakatu Longo, Igor Centurião dos Santos, Moises Marcelino Neto, Rigoberto E. M. Morales, Thiago Alberto Rigo Passarin, Eduardo Nunes dos Santos

IWIS26-012 Impedance Spectroscopy of Forward-Biased La2/3Sr1/3MnO3/Nb:SrTiO3 Heterojunction
Jérémy Blond, Raphaël Coccalotto, Fallou Gning, Soumaya Latrach, Victor Pierron, Laurence Méchin, Bruno Guillet

IWIS26-025 Comparative Study of Four Anti-fouling Coating Strategies on Gold SPEs for Antibiotic Detection in Milk
Jiadi Mao, Longzhang Xu, Aseel Alnaimi

13:00–14:40 Modeling and Signal Processing · Room C25.017

Session chair: Prof. Burak Ülgüt

IWIS26-035 A Physics-Informed Dual-Branch Neural Network Combining Raw EIS and DRT for Battery SoC Estimation

Mohamed Jemal, Salwa Sahnoun, Ahmed Fakhfakh, Olfa Kanoun

IWIS26-045 Challenges and Perspectives of the Distribution of Relaxation Times Method for Impedance Spectra Containing Resistive-Inductive Contributions

Christian Plank, Michael A. Danzer

IWIS26-036 Embedded Computation of the Distribution of Relaxation Times: A Multi-Basis Discretization Benchmark for Impedance Spectroscopy

Ayoub Trabelsi, Ahmed Yahia Kallel, Olfa Kanoun, Brahim Mezghani

IWIS26-001 Evaluating Mixing Models for Soil Dielectric Properties via Impedance Spectroscopy

Camille Herlent, Benhui Fan, Cyrille Fauchard, Alain Sylvestre

IWIS26-027 Modeling and Characterization of Soft Faults in Electrical Cables for Synthetic Dataset Generation

Mariem SLIMANI, Yosra GARGOURI, Mickael CARTRON, Nicolas RAVOT, Celine HUANG, Florent SOUVESTRE

14:40–15:10 Coffee Break · C25.021

15:10–16:10 Biomedical · Room C25.012

Session chair: Prof. Dr. Uwe Pliquett

IWIS26-033 Development of a Sensor Concept for continuous adesive free transculant Vital Sign Monitoring in Neonates with reduced Wiring

Anika Nietert, Thomas Thuilot, Pascal Vetter, Martin Oehler, Andreas Hennig

IWIS26-028 Joint Temporal and Frequency Correlation for Multi-Frequency Electrical Impedance Tomography

Alberto Battistel, Massimo Kubon, Thomas Schiepp, Martin Pichotka

IWIS26-032 An LSTM-Based Deep Learning Framework for Accurate Cardiac Status Prediction

Yosra Ben Fadhel, Achraf Derbel, Hedi Trabelsi, Carlo Trigona, Nabil Derbel, Olfa Kanoun

15:10–16:10 Energy Storage, Batteries and Fuel Cells · Room C25.017

Session chair: Dr. Thomas Keutel

IWIS26-005 Impedance and Harmonic Analysis of Lithium Metal Cells with Intrinsic Voltage Noise Gözde Ataç and Burak Ulgut Bilkent University Ankara, Türkiye

Gozde Atac, Burak Ulgut

IWIS26-034 Electrochemical Impedance Spectroscopy Analysis of Cathode Air Contamination and Degradation in PEM Fuel Cell Stacks

Hamza Boughanmi, Thomas Keutel, Michael Schrank, Thomas von Unwerth, Olfa Kanoun

IWIS26-046 Engineering High-Voltage Aqueous Supercapacitors through a

Hierarchical LIG-MnO2-MoS2 Electrode Architecture
Hossameldin K. A. Hussein, Galal Sherif, Mohamed Khamies, Hesham H. Amin, Olfa Kanoun, Ahmed S. G. Khalil

16:10–17:00 Poster Session · Foyer

IWIS26-003 Electrochemical impedance spectroscopy (EIS) analysis, diagnostic, and modeling of Li-ion batteries using distribution of relaxation times (DRT)
Alaa Egbaria, Yoed Tsur

IWIS26-009 Approach for Reducing Thermally Induced Hysteresis in MEMS Accelerometers
Dominik Thiem, Marc Simoneit, Thomas Thuilot, Andreas Hennig, Gregor Schiele

IWIS26-010 Decoupling Format and Chemistry Effects in the Impedance Spectra of Pristine Lithium-Ion Cells
Omar Elattar, Ivana Mladenovic

IWIS26-022 Screen-Printed Carbon Nanotube/Epoxy Composites for Impact Sensing in Electric Vehicle Batteries
Ga-Hyeon Eom, Yu-Jin Jung, Sung-Hwan Jang

IWIS26-023 Finite Element Simulation and Optimization of a Flexible Shear Strain and Force Sensing Device
Guozheng Wu, Wanpeng Zhao, Heng Bi, Bowei Dai, Olfa Kanoun

IWIS26-024 Laser Induced Graphene Based All Solid State Ion Selective Electrodes for Sodium and Ammonium Detection in Water Quality Monitoring
Tianqi Lu, Yurun Wu, Zheyuan Wu, Ge Shi, Aseel Alnaimi, Jiadi Mao, Hussamaldeen Jaradat, Zhenyu Wu, Olfa Kanoun

IWIS26-026 Numerical Comparison of Electrical Impedance Tomography and Lorentz Force Electrical Impedance Tomography
Alberto Battistel, Mohammad Mehdi Farzaneh, Adian Al-Mozan, Dolgan Kanaev, Massimo Kubon, Martin Pichotka, Thomas Schiepp

IWIS26-039 Camera-Free WiFi CSI Human Movement Detection and Real-Time Security Alerting Using a Single ESP32 Microcontroller
Abdallah Boubaker, Ch´eour Rym, Ktari Jalel, Olfa Kanoun

IWIS26-040 Learning from the Waveform: Robust RF Classification for Green Wireless Sensor Networks
Abeidi waed, Ch´eour Rym, Abdallah Boubaker, Ktari Jalel, Olfa Kanoun

IWIS26-042 Comparative Electrochemical Characterization of Screen-Printed Carbon Ink Electrodes for Point-of-Care Sensing
Aseel Alnaimi, Ammar Al-Hamry, Liangzhen Song, Björn Engler, Olfa Kanoun

IWIS26-044 A Bin-Based method for Analysing Frequency Combinations in Bio impedance Spectroscopy

Tawonga Tsokodayi, Cherif Ouni, Nour Ammar

IWIS26-013 PRBS-Based, Fast Electrochemical Impedance Spectroscopy for Lithium-Ion Battery Modules Using a DC Battery Tester
Dilane Dongmo Tadoum, Sehriban Celik, Morian Sonnet, Dirk Uwe Sauer

IWIS26-047 When Morphology Matters: A Critical Perspective on Globular and Nanotubular Polypyrrole
Wilson Aparecido de Oliveira, Hussamaldeen Jaradat, Tianqi Lu, Marcio Eduardo Vidotti Miyata, Olfa Kanoun

IWIS26-037 Parameter Estimation in Electromagnetic Inverse Problems: A Practical Comparison of Quantum Particle Swarm Optimization with Particle Filtering
Hajer Cherif, Frank Wendler, Ahmed Yahia Kallel, Brahim Mezghani, Olfa Kanoun

IWIS26-048 Optimization of Electrocoagulation Pretreatment for Vat Dye Effluents: Effects of pH, Intensity, and Treatment Time toward an Integrated Textile Media–Membrane Filtration System
Amadou Aboubacar MAIGA, Milaine Jebali, Tianqi Lu, Malak Talbi, Awa S. DOUMBIA, Abdoulaye DOUCOURE, Mamadou TOGOLA, Zoumana TRAORE, Olfa Kanoun

IWIS26-049 Treatment of Artisanal Textile Dyeing Wastewater by Electrocoagulation Using Iron Electrodes
Fatoumata Ba, Naoures Ben Fadhel, Tianqi Lu, Malak Talbi, Adama Tolofoudye, Sidy Ba, Arouna Dolo, Abdoulaye DOUCOURE, Olfa Kanoun

IWIS26-050 Wet-Spun Fibers for Biosensing and Supercapacitors Applications
Hassan A. Rahma, A.M. Hassan, Ahmed S. G. Khalil

16:10–17:00 Exhibition · Foyer

16:10–17:00 Hackathon · Foyer

17:00–18:00 Circle of Experts in Impedance Spectroscopy (CEIS) · Room C25.017

17:00–18:00 SheIWIS · C25.012

19:00–23:00 Dinner · -

Day 4 · Friday, September 25, 2026

08:30–09:00 Registration · Foyer

09:00–09:45 Plenary Talk: Signal Analysis for Electrochemical Systems: Impedance, Noise and Ultrafast Spectroelectrochemistry · Room C25.012
Session chair: TBA

Prof. Burak Ülgüt

Department of Chemistry, Bilkent University, Ankara, Turkey

Leads the Electrochemical Measurement and Modeling Group at Bilkent. PhD from Cornell (2007), postdoc at Cambridge, industry experience at Gamry Instruments and İnci Akü. Research centers on impedance-based models of energy systems and electrochemical noise measurements.

09:45–10:30 Plenary Talk: Biomedical Engineering in Uruguay and the EU-Mercosur Partnership Agreement: the case of Bioimpedance and Ionizing Technologies · Room C25.012

Session chair: TBA

Prof. Franco Simini

Universidad de la República, Montevideo, Uruguay

Founded the Núcleo de Ingeniería Biomédica (NIB) in 1985. Research centers on low-cost clinical solutions including electrical impedance tomography for pulmonary oedema (IMPETOM). Named Outstanding Engineer in Uruguay (2022); IEEE Life Senior Member.

10:30–11:00 Coffee Break · C25.021

11:00–12:00 Biological, Food and Environmental Applications · Room C25.012

Session chair: Prof. Franco Simini

IWIS26-004 Simulation-Based Evaluation of a Miniaturized Four-Electrode Impedance Probe for Layered Tissue Characterization

Marianne Petersen, Jacob Thöïnes, Lam Vien Che, Sascha Spors, Thiusius Savarimuthu, Zhuoqi Cheng

IWIS26-021 Potential of Impedance Spectroscopy in Poultry Freshness Assessment

Mahdi Guermazi, Ahmed Yahia Kallel, Olfa Kanoun

IWIS26-030 Electrochemical detection of phosphate ions in drinking water using derivated Cu(II)Pc-PAA/AgNPs modified CSPE

Naoures Ben Fadhel, Milaine Jebali, Mounir Ben Ali, Olfa Kanoun, Mohamed Hassen

12:00–13:00 Lunch Break · Mensa

13:00–15:00 Sensors · Room C25.012

Session chair: TBA

IWIS26-015 Thickness and Conductivity Estimation of Thin Conductive Layer Using a Multi-Frequency Eddy Current Sensor

Mayssa Gammoudi, Lilia Sidhom, Manar Salem, Ghada Bouattour

IWIS26-043 Material identification for automated disassembly processes using inductive spectroscopy

Hajer Cherif, Thomas Keutel, Frank Wendler, Martin Dix, Brahim Mezghani, Olfa Kanoun

IWIS26-016 Design Methodology for Multiturn Coils in Electromagnetic Energy Harvesters

Fatma Benbrahim, Sebastian Bader, Olfa Kanoun

IWIS26-008 Frequency-Resolved Impedance Analysis of an Additively Manufactured Capacitive Spherical-Joint Sensor: Decoupling Position from Lubricant State

Andi Schnebel, Thomas M. Wendt, Olfa Kanoun

IWIS26-019 Sparse Pressure Distribution Reconstruction from Reduced Electrical Measurements Using a Two-Stage CNN for Flexible Sensors

Xiaohu Ma, Guozheng Wu, Jawhar Aloulou, Olfa Kanoun, Alice Fischerauer, Gerhard Fischerauer

IWIS26-031 Hemin-Functionalized LIG for Sensitive Electrochemical Detection of L-Tyrosine

Milaine Jebali, Yili Zhu, Run Zhang, Tianqi Lu, Mounir Ben Ali, Mohamed Hassen, Olfa Kanoun

15:00–15:30 Closure · Room C25.012

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