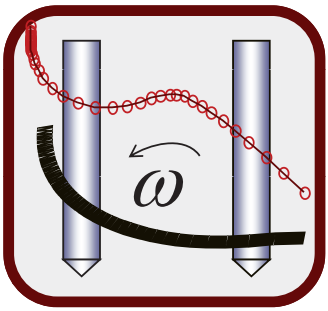
Program Book

18th International Workshop on Impedance Spectroscopy

IWIS 2025



September 23-26, 2025
Technische Universität Chemnitz
Germany

Chairman's Welcome Message

The exchange of ideas and concepts between different scientific fields is an essential first step to find innovative solutions for future and current problems of mankind. The goal of the International Workshop on Impedance Spectroscopy (IWIS) is to bring together innovative and experienced scientists from different countries to discuss methods, instrumentation, and results of recent research in electrochemistry, materials science, biology and medicine, electronics and sensors. The Advanced School on Impedance Spectroscopy (ASIS), now in its fourth year, provides a good overview of the basics of the method and makes it more accessible to young scientists. An exhibition will provide information on the latest developments in instrumentation and equipment. These are the main components of this annual international workshop at the Chemnitz University of Technology.

In its 17^{th} edition, the IWIS includes 37 contributions from 12 countries in 6 sessions, 4 plenary talks, 2 Hands-on tutorials and 8 tutorials. The peer-reviewed contributions highlight new advances and present different approaches to impedance spectroscopy, including modeling, measurement, and applications.

This year's IWIS is a continuation of the brilliance of the IEEE Technical Committee IM-TC 2 on Impedance Spectroscopy. In its fourth year, TC2 promotes Impedance Spectroscopy and standards within the IEEE community worldwide.

The workshop organization has requested a considerable effort from the organizing team of the chair for measurement and sensor technology, which makes it possible to organize this international event this year online within Technische Universität Chemnitz.

We thank the IEEE Instrumentation and Measurement Society for supporting the Advanced School on Impedance Spectroscopy and the IEEE Instrumentation and Measurement Chapter Portugal for the assistance of the event. The workshop is co-organized by the Chemnitz School of Metrology (CSM e.V.), whose support for the event is highly acknowledged.

We would like to thank you for choosing IWIS 2024.

Prof. Olfa Kanoun & Prof. Pasquale Arpaia
General Chairs

IWIS 2026 Organizers

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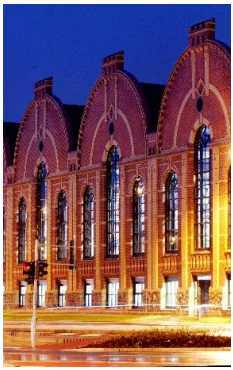
General Information

The City of Chemnitz

Chemnitz has its unique story - of groundbreaking inventions in automotive engineering, mechanical engineering or the textile industry as well as of courageous companies like Richard Hartmann, Carl Gottlieb Haubold or Louis Schönherr. As a modern industrial city, Chemnitz has continued to write its history and is today one of the fastest-growing cities in Germany. The city is a center of technology focusing on the automotive and supplier industries, information technology and mechanical and plant engineering.



Industry Museum,
(©www.chemnitz2025.de)

Rathaus, Neumarkt (©CWE - Chemnitz)

Going down their own path, experiencing new adventures and inventions - this recipe makes the city Chemnitz and its people successful: thousands of patented ideas like the thermos flask or the first mild detergent were conceived

here. Today, as an essential link in the global manufacturing chain, Chemnitz produces excellent machines and production facilities for the whole world.

A European selection jury has named the German city of Chemnitz the European Capital of Culture for 2025. The Saxonian city beat four other German cities on the shortlist: Hannover, Hildesheim, Magdeburg and Nuremberg.

Logo of Chemnitz as European capital of culture (©www.chemnitz2025.de)

Residents of Chemnitz celebrate the nomination of Chemnitz as the European Capital of Culture 2025. (©Jan Woitas/dpa)

Tradition and modernity are also reflected in exciting urban contrasts. Unique evidence like “das Bauhaus” and “die neue Sachlichkeit” or the Kaßberg, some of the largest intact areas of Wilhelminian style architecture in Europe, are deeply loved by the architecture fans. Just like Chemnitz city center, which has been redesigned over the past 20 years by internationally renowned architects such as Helmut Jahn, Hans Kollhoff and Christoph Ingenhoven.
For lovers of the fine arts there is a lot to discover in Chemnitz: For example, the Chemnitz Art Collections or the Gunzenhauser Museum, which houses one of the most impressive collections of classical modern art. Meanwhile, the Saxon

Buildings in Jugendstyle in the famous Chemnitz-Kaßberg (4.5 km^2 protected area as a historic monument), (©www.chemnitz.de)

Industrial Museum traces its history and present. The Municipal Theatres with the Robert-Schumann-Philharmonie attract visitors from all over Germany.

A side trip to the more than 100-year-old town hall is also worthwhile: the monumental Klinger-mural "Arbeit - Wohlstand - Schönheit" can be admired in the town council hall. The council hall is adorned with the work "Die Abwäng" by Neo Rauch, one of the most important contemporary artists.

Those who simply want to relax will also find a place in Chemnitz: recreation islands such as the castle pond with the adjoining kitchen forest invite you to stroll and linger as well as the historic city park along Chemnitz.

Let Chemnitz surprise you, go to discover the city by yourself - it's worth it!

Conference Venue

The International Workshop on Impedance Spectroscopy will take place in a **hybrid** form: **online** using the Zoom platform and **On-site** at TU Chemnitz:

Technische Universität Chemnitz
Neues Hörsaal und Seminargebäude (Orangerie)
Reichenhainer Straße 90
09126 Chemnitz

TU Chemnitz, Zentrales Hörsaal- und Seminargebäude (©www.chemnitz.de)

Bars & Restaurants

If you want to spend an evening in the modern city center of Chemnitz, there are some nice bars and restaurants. You may want to try the following:

Brazil – Innere Klosterstraße 10, www.restaurant-brazil.de

Buono – Theaterstraße 7, www.bouno-chemnitz.de www.buschfunk-chemnitz.de

City Pub – Brückenstraße 17, www.tower-pub.de

Diebels Fasskeller – An der Markthalle 3, www.fasskeller.de

Janssen – Schloßstraße 12, www.janssen-restaurant.de

Tillmanns – Brückenstraße 17, www.tillmanns-chemnitz.de

Turmbrauhaus – Neumarkt 2, www.turmbrauhaus.de

Gastromeile

New in the city of Chemnitz is Gastromeile, where there is something for everyone. Have a look at the website:

Chemnitzer Gasttromeile – chemnitzcity.de/gastromeile/

Lunch
The lunches will be provided by the Mensa of TU Chemnitz, where a special room is reserved for IWIS participants:

Building of the Mensa on the other side of the street as the conference building

IWIS Special Dinner - Pelzmühle

We invite you to a special dinner at Pelzmühle Restaurant · Bistro · Café Tradition neu erleben on **September 25th 2025 at 19:00**

Pelzmühle is a restaurant located in Chemnitz, Germany. It offers a unique dining experience for scientific conference participants.

Here are some details about Pelzmühle:

Address: Pelzmühlenstraße 17, 09117 Chemnitz

Getting there by: local trains "C13/C14" or tram "3" from the front of the university, and get off at the "Chemnitz, Zentralhaltestelle" stop, then transfer to bus "32 (Reichenbrand) " to "An den Alten Lehden" stop and walk 1 minute to Pelzmühlenstraße 17 (47 mins total ride).

Phone: 0371-52 35 67

Cuisine: The restaurant specializes in serving authentic regional Saxony specialties and international cuisine.

Menu: The restaurant offers a diverse menu with various options for conference participants.

Hours: Pelzmühle closes at 11 PM.

IWIS Social Program – Visit to Chemnitzer Gewölbegänge

Underground Mystery Adventure: Explore Chemnitz's historical underground tunnel system.

Event Details

Date: September 24, 2025

Time: 06:30 PM - 9:00 PM

Location: Chemnitzer Gewölbegänge, Fabrikstraße 6

Getting there by: local trains "C13/C14" or tram "3" from the front of the university, and get off at the "Chemnitz, Roter Turm" stop, then transfer to bus "72 (Rottluff) " to "Chemnitz, Kaßbergauffahrt" stop and walk 2 minutes to Fabrikstraße 6 (33 mins total ride).

About the Underground Tour

Join our detailed historical tour through all three levels of the underground tunnel system. Learn about the construction from 1531, how the passages served as natural refrigeration for centuries, and their crucial role during wartime. Includes beer tasting in the Great Hall.

Travel to Chemnitz

You can reach *Technische Universität Chemnitz* via car or train.

By car from Autobahn A72:

- Take the motorway exit '15-Chemnitz Süd'
- Use B173 / Neefestraße direction 'Stadtzentrum'
- After 1 km turn right on the B169 / 'Südring'
- After 5.5 km use exit 'Reichenhainer Straße' direction 'Technische Universität'
- You'll reach campus after 1.5 km. The conference venue is on the left

By car from Autobahn A4:

- Take the motorway exit 'Chemnitz Mitte' toward the city centre.
- Follow the road for about 5 km. There are several big crossings.
- Always go straight until there are signs to turn right to the 'Reichenhainer Straße' and to 'Technische Universität'.
- After 1.5 km you'll reach the campus, the conference venue is on the left side. Next to the Mensa is a -car park- where 30 places are reserved.

By train:

- Get off at Chemnitz central station and use tram 3 in direction 'Technopark Chemnitz', alternatively local trains C13, C14 or C15 in direction 'Technopark Chemnitz'
- Get off at 'TU Campus (Reichenhainer Straße)'

Airport:

- The next nearby Airports are Dresden and Leipzig
- From airport Dresden go into A4 direction Chemnitz/Erfurt.
- From airport Leipzig-Halle go into A14 direction Dresden, at 'Dreieck Nossen.'
- Go on A4 direction Chemnitz/Erfurt. Proceed as described above.

Taxi: If you need a taxi in Chemnitz, please call: +49 371 369 000

Getting Around in Chemnitz

Most of the buses and trams in Chemnitz meet at the Central Bus Station ('Zentralhaltestelle').
Information about public transport and timetables you can find here:

www.cvag.de
www.öpnvkarte.de
www.bahn.de

The tickets for the local train (C13, C14 and C15), Trams (1, 2, 3, 4, and 5), and Buses could be obtained either from the ticket distribution machines in the stations or directly from inside the mean of transport.

The tickets obtained from the distribution machines in the stations should be stamped after boarding the bus/tram/train. The stamp machine is typically orange.

Meanwhile, the tickets obtained from public transport do not require further stamping. The distribution machines are found in the middle of the means of transport for trams and trains. The bus, however, must always be boarded from the front door. The ticket could be obtained from the driver.

A 1-day ticket "Tageskarte" could get you around Chemnitz. It costs 6€ and is valid until 4:00 AM the following day with reference to the date stated on the ticket.

A one-drive ticket, "Einzelfahrtkarte," is valid for 1 hour from the stamp time. It costs 3€.

Please note that, in case you have booked a Sachsen-Ticket, the ticket would also be valid for all the means of transport indicated above.

It is possible to use Android/iPhone app DB Navigator from the app store. (https://www.bahn.com/en/view/booking-information/booking/db-navigator-app.shtml)

Getting from the Hotel Seaside Residenz to the workshop venue:

By feet:
15 minutes of walk.

By Tram/Train:
In front of the hotel, you will find 'Bernsbachplatz' train/tram station. Take Tram 3, alternatively Train C13, C14 or C15 to the direction 'Technopark Chemnitz'. The station at university is named 'TU Campus' and is just in front of the workshop venue.

Getting from the Hotel Dorint Kongresshotel to the workshop venue:

By Tram/Train:
Nearby the hotel, you will find 'Roter Turm' train/tram station. Take Tram 3, alternatively Train C13, C14 or C15 to the direction 'Technopark Chemnitz'. The station at university is named 'TU Campus' and is just in front of the workshop venue.

Internet Access

During the event, Wi-Fi access is available at the campus site. Please use the following registration information to log in:

Network name	`tu-chemnitz.de`
WPA2 key	`IWIS2025`

If you have problems connecting to the network, please ask organizers for help at the workshop desk.

Sponsors

The workshop is supported mainly by:

- Sciospec

- ZAHNER-elektrik GmbH & Co. KG logo

- RHD Instruments

and by:

- School of Metrology CSM e.V.

- IEEE SSCS Germany Chapter

- IEEE Student Branch TUC

- IEEE Women in Engineering

- IEEE EMB Chapter Germany Section

- IEEE Technical committee IM-TC 2 on Impedance Spectroscopy

- IEEE Education Society Germany Section

First Aid
Your safety is our priority; if you or anyone else is injured, contact Mr. Frank Wendler immediately.

ASIS Program

Tuesday, September 23th, 2025 : ASIS Day 1

09:00 - 10:00	**Tutorial 1** Where does the signal processing begin in Impedance Spectroscopy Prof. Olfa Kanoun, Professorship of Measurements and Sensor Technology, Chemnitz University of Technology, Germany
10:00 - 10:30	**Coffee Break**
10:30 - 12:30	**Tutorial 2** On-chip EIS: Methods, Design and Applications Prof. Dr.-Ing. Moustafa Nawito, Professor of Electrical Engineering, Managing Director, IU International University of Applied Sciences, Germany
12:30 -13:30	**Lunch Break**
13:30 -14:30	**Tutorial 3** Bioimpedance in Biomedical Applications and Research Prof. Pedro Bertemes-Filho, Department of Electrical Engineering, Santa Catarina State University (UDESC), Joinville, Brazil
14:30 - 15:30	**Tutorial 4** Stationary and potential sweep voltammetry Prof. Andrzej Lasia, Professor Emeritus, Chemistry Department, Université de Sherbrooke, Québec, Canada
15:30 -16:00	**Coffee Break**
16:00 - 17:00	**Tutorial 5** Overcoming Resource Constraints in Embedded Impedance Spectroscopy Dr.-Ing. Ahmed Yahia Kallel, Chair for Measurement and Sensor Technology, Chemnitz University of Technology, Germany

Wednesday, September 24th, 2025 : ASIS Day 2

08:15 - 10:00	**Tutorial 6** Practical EIS: Theory, Examples, and Instrumentation Dipl.-Ing. Martin Bulst + Dr.-Ing. Konstantin Weise + M. Sc. Moritz Gerber, Sciospec Scientific Instruments GmbH, Germany + Leipzig University of Applied Sciences (HTWK Leipzig), Germany
10:00 - 10:30	**Coffee Break**
10:30 - 12:30	**Tutorial 7** Introduction to Instrumentation Setup Dipl.-Ing. Martin Bulst, Sciospec Scientific Instruments GmbH, Germany
12:30 -13:30	**Lunch break**
13:30 - 14:30	**Tutorial 8** Dielectric material characterization in the GHz range Prof. Uwe Pliquett, DInstitut für Bioprozess- und Analysemeesstechnik e.V. Heilbad Heiligenstadt, Germany
13:45 - 14:30	**Tutorial 9** Bridging Molecular Recognition and Electrochemical Readout: The Synergy of MIPs and EIS Prof. Najla Fourati, SATIE Laboratory, UMR CNRS 8029, Conservatoire National des Arts et Métiers (CNAM), Paris, France
18:30 - 21:00	**Social Event: Visit to Chemnitz Catacombs**

IWIS Program

Thursday, September 25th, 2025 : IWIS day 1

08:30 - 08:45 **Opening: Welcome & Conference Overview**

08:45 - 09:30 **Plenary Talk 1**
Chair: Prof. Olfa Kanoun
Integration of Advanced Tools into a Point-of-Care System for Saliva Analysis: Application to Heart Failure; *Prof. Abdelhamid Errachid*

Session 1 - Signal Processing Fundamentals
Chair: Prof. Pasquale Arpaia

09:30 - 10:30
- Enhanced Linear Kramers-Kronig Validation Method for Battery EIS Data; *Marco De Gregorio et al.*

- Estimation of Distribution of Relaxation Times Using Neural Network ; *Žan Gorenc et al.*

Mitigating the Regularization Challenge in DRT: A New Perspective; *Žiga Gradišar et al.*

10:30 - 11:00 **Coffee Break**

Session 2 - Biomedical Application
Chair: Dr. Konstantin Weise

11:00 - 12:20
- Comparison of compensation methods for Impedance Spectroscopy of Brain Tissue; *Moritz Gerber et al.*

- Machine Learning-Based Electrical Impedance Spectroscopy Classification for Oral Cancer; *Zhicheng Lin et al.*

- EIT based on time-domain measurements; *Dura Miroslav et al.*

- Optimized Context-Aware Physiological State Recognition Framework for Breath Analysis Applications; *Farah Abdelhedi et al.*

Session 3 - Energy Materials
Chair: Prof. Pavel Ctibor

11:00 - 12:20
- Co-Sputtered Transition Metal Nitride Thin Film: Structural and Electrochemical performance analysis for Supercapacitor ; *Kumari Diksha et al.*

- Optical characterization of nanotextured GaAs by metal-assisted chemical etching; *Sameh Daboussi et al.*

- Investigating the Impact of the Impedance of a Gold-Wire Micro-Reference Electrode on Three-Electrode Impedance Measurements in Lithium-Ion Batteries; *Moritz Paul Rosar et al.*

- Dielectric Properties of Plasma Sprayed Ytterbium Disilicate Yb2Si2O7 ; *Pavel Ctibor et al.*

12:20 - 13:30 **Lunch Break**

Session 4 - Electrochemical & Energy Systems

Chair: Prof. Juan David Bastidas-Rodiguez

13:30 - 14:50 - Probabilistic EIS-Based Diagnosis of Solid Oxide Electrolysis Cell Systems under Non-Stationary Operating Conditions ; *Luka Žnidarič et al.*

- Electrochemical Impedance Spectroscopy for operando and multi-modal characterization of cycling batteries ; *Rebeca Fortes-Martń et al.*

- Analysis of a Hopf Bifurcation in a Neural System by Impedance Spectroscopy; *Roberto Fenollosa et al.*

- Measurement of the Impedance Spectroscopy on a PV Module Connected to a Power Converter ; *Juan D. Bastidas-Rodriguez et al.*

Session 5 - Sensors (I)

Chair: Prof. Najla Fourati

13:30 - 14:50 -Acoustically Regenerated Sensor Electrodes: A SAW-Driven Self-Cleaning Strategy ; *Zhenyu Wu et al.*

- Electrochemical Characterization of Graphene Oxide- Functionalized Silicon Nanowires for Sensing Applications ; *Naoures Ben Fadhel et al.*

- Laser-Induced Synthesis of ZnO-Functionalized Graphene Electrodes from Imidazolate-Based MOFs for Electrochemical Applications; *Amir Mrayeh et al.*

- Nanostructured Silver-Chitosan Interfaces for Advanced Electrochemical Sensing Applications ; *Milaine Jebali et al.*

14:50 - 15:10 **Coffee Break**

Session 6 - Measurement Systems

Chair: Prof. Pedro Bertemes-Fliho

15:10 - 16:10 - High-Speed-Hyper-Wideband Dielectric Spectrometer for Liquid Sensing; *Jürgen Sachs et al.*

- An Embedded Multi-Channel Electrochemical Platform for Hybrid Electronic Tongue Applications ; *Tianqi Lu et al.*

- Detection of Water Adulteration in Cow Milk Using Neural Networks and Bioimpedance; *Edson Lopes et al.*

16:10 - 17:00 **Poster Session & Exhibition & Hackathon Presentations**

- Improving Measurement Quality by Optimizing Excitation Amplitude in Galvanostatic Electrochemical Impedance Spectroscopy ; *Dominika Parasińska et al.*

- Performance and degradation analysis of sputter deposited thin-film platinum cathodes in PEM water electrolyzers analyzed by electrochemical impedance spectroscopy ; *Jaroslav Herman et al.*

- Multimodal EMG, FMG and IMU Signal Synchronization for Reliable Hand Gesture Recognition using Direct Memory Access ; *Hela Ben Abdelhafidh et al.*

- Application Constraints of Linear Multivariate Regression Models for Dielectric Spectroscopy in Inline Bioreactor Viable Cell Analysis; *Selina Uhlendorff et al.*

- Proton conduction in imidazole-loaded porous materials: effect of porosity and imidazole content; *Agata Tabero et al.*

- Enhanced Pseudocapacitive Performance of MnOâ-Based Laser-Induced Graphene Electrodes via Dual Transition Metal Oxide Co-Modification; *Tianqi Lu et al.*

- Automated In-Situ Liquid Sampling Platform for Electronic Tongue Systems with Switchable Modular Architecture; *Tianqi Lu et al.*

- A Parametric Study of Energy Efficiency in Embedded BIS: Effects of Sample Size and Number of Measurement Frequencies; *Nour Ammar et al.*

- Impedance Measurement for the Structural Characterization of Wood in a Continuous Process; *Peter Neumeister et al.*

- Investigation of microstructural, optical and electrical properties of SZO films fabricated using Air-Pneumatic Spray Pyrolysis method ; *Faouzi Ghribi et al.*

- Flexible Supercapacitors Based on Electrodeposited Polypyrrole/Laser-Induced Graphene Composite Electrodes ; *Yinting Li et al.*

16:10 - 17:00 **Exhibition & Hackathon Presentations**

17:00 - 18:00 **CEIS TC 2 Meeting & ShelWIS**

19:00 - 22:00 **Conference Dinner**

Friday, September 26th, 2025 : IWIS Day 2

08:30 - 09:15 **Plenary Talk 2**
Chair: Prof. Uwe Pliquett
Bioimpedance instrumentation advances: towards wearable biosensing; *Prof. Pedro Bertemes-Filho*

09:15- 10:00 **Plenary Talk 3**
Chair: Prof. Dr-Ing. Moustafa Nawito
Optimized Excitation Signals for Next-Generation Impedance Spectroscopy: From Theory to Embedded Implementation; *Dr.-Ing. Ahmed Yahia Kallel*

10:00 - 10:30 **Coffee Break**

Session 7 - Advanced Signal Processing
Chair: Prof. Zi-Qiang Lang

10:30 - 11:30 -Electrochemical Impedance Spectroscopy : a powerful tool to study the microstructure of ionic conducting ceramic ; *Fabrice Mauvy et al.*

- Force Level Classification Using sEMG Signals During Grasping Exercises ; *Sawsan Njeh et al.*

- Enhancing Electrical Impedance Tomography Image Reconstruction Using Prior Knowledge and Grid-Optimized Parameters: Experimental Validation on Water Tank Data; *Mejda Bouchhima et al.*

Session 8 - Sensors (II)
Chair: Dr. Saddam Weheabby

11:30 - 12:30 - Flexible LIG-Based Chemoresistive Sensor with ZIF-8/MWCNT Composite for Selective Acetone Detection at Room Temperature; *Ge Shi et al.*

- Sensitivity Evaluation of an IDT Structure-Based ZIF-8 Metal-Organic Frameworks for VOC Detection ; *Fatma Khayat et al.*

- Fractal geometry-inspired microstrip patch sensor for enhanced electromagnetic sensing of dielectric material ; *Swaranpreet Kaur et al.*

12:30 - 13:30 **Lunch Break**

Session 9 - Insights & Emerging Applications

Chair: Prof. Anouar Njeh

13:30 - 14:30 - Kernel-Based Analysis of Impedance Spectroscopy in a Quartz Crystal Microbalance Biosensor; *Ceyhun E. Kirimli et al.*

- Tunable Hydrodynamic Focusing in a 3D-Printed Microchannel for Impedance Spectroscopy ; *Fatemeh Dadkhah Tehrani et al.*

- Predictive Tools of Coatings Damage Using Electrochemical Impedance Spectroscopy and Artificial Neural Networks ; *Homero Castaneda et al.*

14:30 - 15:00 **Closing Ceremony: Final remarks**

Notes:

Notes:

Publications series

O. Kanoun (Ed.)

Impedance Spectroscopy: Advanced Applications: Battery Research, Bioimpedance, System Design

Vol. 1, ISBN 978-3-11-055892-0, 2018

Progress Reports on Impedance Spectroscopy

Vol. 1, ISBN 978-3-11-044756-9, 2016

Lecture Notes on Impedance Spectroscopy: Measurement, Modeling and Applications

Vol. 5, ISBN 978-1-138-02754-1 (Hbk), 2015
Vol. 4, ISBN 978-1-138-00140-4 (Hbk), 2014
Vol. 3, ISBN 978-0-415-64430-3 (Hbk), 2012
Vol. 2, ISBN 978-0-415-69838-2 (Hbk), 2012
Vol. 1, ISBN 978-0-415-68405-7 (Hbk), 2011

Tuesday	Wednesday	Thursday	Friday
23 September	**24** September	**25** September	**26** September
ASIS Day 1	ASIS Day 2	IWIS Day 1	IWIS Day 2
Registration 08:30 - 09:00	**Tutorial 6** 08:15 - 10:00 **(Room N012)**	**Opening 08:30 - 08:45**	**Plenary 2** 08:30 - 09:15 **(Room N012)**
Tutorial 1 09:00 - 10:00 **(Room N012)**		**Plenary 1** 08:45 - 09:30 **(Room N012)**	**Plenary 3** 09:15 - 10:00 **(Room N012)**
		Session 1 Signal Processing Fundamentals 09:30 - 10:30 **(Room N012)**	
Coffee Break 10:00 - 10:30	**Coffee Break** 10:00 - 10:30	**Coffee Break** 10:30 - 11:00	**Coffee Break** 10:00 - 10:30
Tutorial 2 10:30 - 12:30 **(Room N012)**	**Tutorial 7** 10:30 - 12:30 **(Room N012)**	**Session 2** Biomedical Application **(Room N012)** **Session 3** Energy Material **(Room N010)** 11:00 - 12:20	**Session 7** Advanced Signal Processing 10:30 - 11:30 **(Room N012)** **Session 8** Sensors (II) 11:30 - 12:30 **(Room N012)**
Lunch Break 12:30 - 13:30	**Lunch Break** 12:30 - 13:30	**Lunch Break** 12:20 - 13:30	**Lunch Break** 12:30 - 13:30
Tutorial 3 13:30 - 14:30 **(Room N012)**	**Tutorial 8** 13:30 - 14:30 **(Room N012)**	**Session 4** Electrochemical Systems **(Room N012)** **Session 5** Sensors (I) **(Room N010)** 13:30 - 14:50	**Session 9** Insights & Emerging Applications 13:30 - 14:30 **(Room N012)**
Tutorial 4 14:30 - 15:30 **(Room N012)**	**Tutorial 9** 14:30 - 15:30 **(Room N012)**	**Coffee Break** 14:50 - 15:10	**Closing Ceremony**
Coffee Break 15:30 - 16:00		**Session 6** **Measurement Systems** 15:10 - 16:10 (Room N012)	
Tutorial 5 16:00 - 17:00 **(Room N012)**		**Poster Session** / **Exhibition** / **Hacka-thon** 16:10 - 17:00	
		CEIS-TC2 Meeting / **WIE** 17:00 - 18:00	
	Social Event 18:30 - 21:00	Dinner 19:00 - 21:00	