

Conference Schedule (rev. 2.5)

21st International Conference on Biomedical Applications of Electrical Impedance Tomography

Sessions comprise of two forms of oral presentations on the same topic:

- Oral Presentations: Are pre-recorded, 10 minutes long, and with 4 per session. Following the recordings, there is a live panel discussion at the end of every oral session for 10 - 15 minutes.
- Rapid Fire Oral Presentations: Are pre-recorded, 3 minutes long, and with 3-4 per session. Following the recordings, there is a live panel discussion at the end of every oral session for 10 - 15 minutes.

All scheduling times relate to Ireland/ United Kingdom time.

Day 1: Monday June 14th

Welcome and Conference Opening 08:00 - 09:00

Day 1: Monday June 14th

Session 1: Thorax I

Session Chairs: Zhanqi Zhao and Sebastian Wegner.

Oral Presentations (09:00 -10:00):

Patient Specific Adaptation in Neonatal Chest EIT
Seifnaraghi et al.

Mechanical Ventilation Control System Guided by Electrical Impedance Tomography
Zhang et al.

Respiration Monitoring in PACU using EIT: A Feasibility Study
Kang et al.

Early individualized PEEP guided by EIT in ARDS: a randomized controlled clinical trial
He et al.

Rapid Fire Oral Presentations (10:00 – 10:30):

Exploring Respiratory Motion Tracking through EIT
Wang et al.

Changes in Tidal Volume of Respiratory Events from OSA Patients during Overnight Polysomnography
Chang et al.

Assessment of the Anti-Gravity Straining Manoeuvre using electrical impedance tomography
Yang et al.

Detection of Different COVID-19 Pneumonia Phenotypes with Bedside Electrical Impedance Tomography
Chen et al.

Sponsors Virtual Booth (10:00 – 10:30):



Day 1: Monday June 14th

Session 2: Algorithms I

Session Chairs: Bill Lionheart and Adnan Elahi.

Oral Presentations (10:45 -11:45):

A systematic analysis of an a priori D-Bar EIT algorithm using the GREIT figures of merit

Rixen et al.

Region of Interest Guided Stimulation Pattern Selection Strategy for Electrical Impedance Tomography

Aggrawal et al.

Generating forward models from CT images for ventilation monitoring in ARDS patients

Stowe et al.

An equilibrium finite element method for the forward problem of electrical impedance tomography with the shunt model

Ma

Rapid Fire Oral Presentations (11:45 – 12:15):

Modular Expandable Programming Architecture for Interactive Web-Based EIT Data Exploration

Gagnon et al.

EIT parameter configuration selection framework

Corona-Lopez et al.

Using esophageal electrodes for increased sensitivity to cardiac-frequency impedance changes

Stowe et al.

Sponsors Virtual Booth (11:45 – 12:15):



Day 1: Monday June 14th

Interim

13:00 – 14:00 **EIDORS Workshop** with Prof Andy Adler

14:00 – 15:00 **Cultural Event** – Traditional Irish Music

15:00 – 18:00 **Repeat streaming** of Sessions 1 and 2

Day 1: Monday June 14th

Session 3: Brain & Nerve

Session Chairs: David Holder and Ros Sadlier.

Oral Presentations (21:00 -22:00):

Feasibility of EIT in the Brain with an Extremely Compact Intracortical Array

Fitchett et al.

EIT-Based Stroke Detection: Skip Impact on Classification Accuracy

Culpepper et al.

Bioimpedance-based Focal and Global Secondary Injury Differentiation in a Pig Model

Everitt et al.

Combined hdEEG and EIT for Stroke Applications

Murphy et al.

Rapid Fire Oral Presentations (22:00 – 22:30):

Feasibility of Imaging Fast Neural Activity Using Magnetic Detection Electrical Impedance Tomography

Mason et al.

The impact of 2D assumptions in 3D brain imaging

Avery et al.

Electromagnetic field distribution imaging during deep brain stimulation (DBS) using MRI: a biological tissue phantom study

Chauhan et al.

Stroke Diagnosis Using Multi-Frequency Symmetry Difference EIT (MFSD-EIT) with SVM Classification

McDermott et al

Sponsors Virtual Booth (22:00 – 22:30):





Day 1: Monday June 14th

Session 4: Thorax II

Session Chairs: Ryan Halter and Kirill Aristovich.

Oral Presentations (22:45 -23:45):

Feasibility of EIT for Hemodynamic Monitoring: Animal Study

Jang et al.

A New Method for Simultaneous EIT/ECG Data Acquisition

Abdelwahab et al.

Detection of Motion Artifacts for Robust Cardiopulmonary Monitoring using EIT

Dang et al.

Signal separation in raw EIT measurements

Richter et al.

Rapid Fire Oral Presentations (23:45 – 00:15):

Information and measurement system of electrical impedance tomography of laboratory mice's lungs

Aleksanyan et al.

Separation of respiration and cardiac activity in EIT through harmonic analysis

Battistel et al.

Prior-Based Unsupervised Separation of Cardiac-Related Signals

Silva et al.

Monitoring of upper airway obstruction using two-plane EIT images

Zhang et al.

Sponsors Virtual Booth (23:45 – 00:15):



Interim

03:00 – 06:00 **Repeat streaming** of Sessions 3 and 4



Day 2: Tuesday June 15th

Session 5: Applications I

Session Chairs: Tong In Oh and Jiabin Jia.

Oral Presentations (09:00 -10:00):

Multimodal mfEIT for in vitro applications

Lehti-Polojärvi et al.

MR-based low-frequency electrical conductivity tensor imaging using DTMREIT and CTI: a comparison study

Sajib et al.

Simulation Study of a New EIT-based Surgical Margin Probe

Kossmann et al.

Electrical Impedance Tomography Nanoparticle Localisation

Bayford et al.

Rapid Fire Oral Presentations (10:00 – 10:30):

Rotational mfEIT constrained by optical image segmentation

Räsänen et al.

Deep learning based EIT image reconstruction for tissue engineering

Yin et al.

Imaging Revision Total Hip Replacements by Electrical Impedance Tomography and Deep Learning based Reconstruction

Spors et al.

Sponsors Virtual Booth (10:00 – 10:30):



Day 2: Tuesday June 15th

Session 6: Hardware

Session Chairs: Qi Wang and Gary Saulnier.

Oral Presentations (10:45 -11:45):

Reducing the hardware requirements for fast neural EIT
Ravagli et al.

Design, Manufacturing & Testing of a Cuff Electrode Array for EIT and Vagus Nerve Stimulation
Alperovich et al.

A Miniaturized Active Electrode Analog Front End for Impedance-Based Surgical Margin Assessment in Minimally Invasive Surgeries
Doussan et al.

ACT5 EIT System.
Shishvan et al.

Rapid Fire Oral Presentations (11:45 – 12:15):

Passive sensing of thermal changes using a fabric sensor with EIT
Abdulsalam et al.

Evaluation of 3D Thoracic Equivalent Circuit Models using Co-simulation with EIT Hardware
Dimas et al.

Flexible and Scalable Multifrequency EIT System
Krasny et al

Influence of skin surface charge/discharge effects in real EIT systems
Tuykin et al

Sponsors Virtual Booth (11:45 – 12:15):



Day 2: Tuesday June 15th

Interim

- 13:00 – 14:00 **Sciospec Workshop** - Useful use cases of Sciospec EIT data and its applications: simultaneous EIT image reconstruction using user-defined channel groups, use of Sciospec EIT data in EIDORS
- 13:00 – 14:00 **Dräger Workshop** - Clinical benefits provided by Regional Ventilation Monitoring with EIT – learn more about how EIT supports the respiratory therapy in the daily clinical routine in an acute care environment
- 14:00 – 15:00 **Cultural Event** – Virtual Tour of Galway
- 15:00 – 18:00 **Repeat streaming** of Sessions 5 and 6

Day 2: Tuesday June 15th

Session 7: Thorax III

Session Chairs: Andy Adler and Sarah Hamilton.

Oral Presentations (21:00 -22:00):

Cardiopulmonary Monitoring of Tidal Volume and Stroke Volume using EIT: An Animal Study

Oh et al.

Quantification of recruitable alveolar collapse and hyperdistension during laparoscopic gynecological surgery and mechanical ventilation

Dargvainis et al.

Spatial sensitivity of regional EIT perfusion assessment in presence of inhomogeneous pulmonary background conductivity

Kircher et al.

EIT for assessing ventilation distribution pre and post airway clearance in SMA-I patients

Vieira Pigatto et al.

Rapid Fire Oral Presentations (22:00 – 22:30):

Pulmonary Image Reconstruction for Multifrequency EIT System for COVID-19

Busarello Wolff et al.

Shape acquisition of the chest boundary to improve lung monitoring in infants

de Gelidi et al.

Three broad classifications of acute respiratory failure etiologies based on regional ventilation and perfusion by EIT

He et al.

Feasibility of Thoracic Impedance Measurements in Seawater

Adler et al.

Sponsors Virtual Booth (22:00 – 22:30):



Day 2: Tuesday June 15th

Session 8: Algorithms II

Session Chairs: Jennifer Mueller and Malena Español.

Oral Presentations (22:45 – 23:45):

D-bar reconstructions of human ventilation EIT data with a statistical prior applied through a Schur complement property

Batista Rattis Santos *et al.*

The SVD of the linearized EIT problem on a disk

Adler *et al.*

Fast 3D Deep CGO-based Reconstruction for Absolute EIT

Hamilton *et al.*

Graph Convolutional Networks for Model-Based EIT Reconstruction

Herzberg *et al.*

Rapid Fire Oral Presentations (23:45 – 00:15):

Direct Regularized Reconstruction for 3D EIT in Stroke Detection

Knudsen *et al.*

Modelling Instrument Admittances with EIDORS

Adler *et al.*

EIT Electrode Quality Assessment and Data Rejection

Campbell *et al.*

3D Direct CGO-based EIT Reconstructions on Ellipsoidal Domains

Muller *et al.*

Sponsors Virtual Booth (23:45 – 00:15):



Interim

03:00 – 06:00 **Repeat streaming** of Sessions 7 and 8.





Day 3: Wednesday June 16th

Session 9: Impedance Spectroscopy and Bioimpedance

Session Chairs: Martin O'Halloran and Barry McDermott.

Oral Presentations (09:00 -10:00):

in-vivo Conductivity Tensor Images of Human Brain

Katoch *et al.*

Imaging of Conductivity and Anisotropy in Muscle Tissues

Choi *et al.*

EIT as a non-destructive method for evaluating cell viability

Cortesi *et al.*

Optimisation of the temporal dispersion model in unmyelinated nerves based on experimental study in subdiaphragmatic nerve of the pig

Tarotin *et al.*

Rapid Fire Oral Presentations (10:00 – 10:30):

Electrodeless Conductivity Tensor Imaging and its Validation using Giant Vesicle Suspension

Katoch *et al.*

Measurement of the Left Atrium Appendage Electrical Conductivity with a Tetrapolar Probe over 0.1 Hz to 100 kHz

Benchakroun *et al.*

Impedance-optical Dual-modal Imaging for 3D Cell Culture

Liu *et al.*

Pressure Dependency of Conductivity Measurements: The Specific Case of the Lung

Ištuk *et al.*

Sponsors Virtual Booth (10:00 – 10:30):



Day 3: Wednesday June 16th

Session 10: Applications II

Session Chairs: Richard Bayford and Eung Je Woo.

Oral Presentations (10:45 -11:45):

Improving Aortic Stent Sizing Through Integrated Impedance Measurements

Fiani et al.

Magnitude and Regional Distribution of VQ Ratios in Anaesthetized Horses

Campbell et al.

Enhancing Ultrasound Imaging in Space with EIT

Farnham et al.

Intradialytic Monitoring of Stroke Volume using EIT

Mok et al.

Rapid Fire Oral Presentations (11:45 – 12:15):

Electrical conductivity of trabecular bone: a preliminary simulation study

Basiuk et al

Technology of pre- and postoperative monitoring of human lung function based on multi-frequency electrical impedance tomography

Aleksanyan

Sponsors Virtual Booth (11:45 – 12:15):



Conference Close 12:15 -12:45

15:00 – 18:00 **Repeat streaming** of Sessions 9 and 10.

Sponsors



Dräger

BiLab

