

The 10th EVI-GTI
International Gas Turbine Instrumentation Conference
25. – 27. April 2023
DANUBIUS HOTEL HELIA, BUDAPEST

Agenda

| Tuesday 25. April 2023 | |
|-------------------------------|--|
| 07:30 - 08:15 | Registration |
| 8:30 - 9:30 | ETC Invite Lecture #2 Energy of Tomorrow – solving the Energy trilemma Dr Verena Klapdor <i>Senior Vice President Gas Services Europe & Africa at Siemens Energy</i> |
| 09:30 | Morning Refreshments and Registration Elevator Pitches |
| 10:00 - 10:15 | Conference Chair Welcome Ralf Obertacke, President EVI-GTI Welcome to Budapest |
| 10:15 - 10:30 | Elevator Pitches: 4 x 4 Minutes Company and Product Presentations Chair: Michael Henke |
| 10:30 - 12:00 | Session D - 04 Chair: Björn Karlsson New Sensors Developments - I |
| 30 min. 10:30-11:00 | 4.1 E22 Advanced thermal mapping using Thermal History Technology: A review S Araguas Rodriguez <i>Sensor Coating Systems Ltd</i> |
| 30 min 11:00-11:30 | 4.2 E24 Direct touchless sensing of torsional vibration stresses in power plant shaft I Balkowski, R S Schittenhelm <i>Siemens Energy Global GmbH & Co. KG, Gas Services, Muelheim/Ruhr, Germany</i> |
| 30 min. 11:30-12:00 | 4.3 E12 Capacisense Technology Comparison between Triax and Pseudo Triax N Billiard <i>Gadcap</i> |
| 30 min. 12:00-12:30 | 4.4 E28 Discussion of Novel Gradient Temperature Measurement Technique Anastasia Thomas <i>LG Tech Link</i> |
| 12:30 | Lunch |
| 14:00 - 16:00 | Session D - 05 Chair: Hanspeter Zinn New Sensors Developments - II |

The 10th EVI-GTI

International Gas Turbine Instrumentation Conference

25. – 27. April 2023

DANUBIUS HOTEL HELIA, BUDAPEST

| | |
|--|---|
| <p style="color: red; font-size: small;">30 min. 14:00-14:30</p> | <p>5.1 E21 Scaling Temperature Recovery Factors: Moving from the Calibration to the Engine Environment C Bonham <i>Loughborough University, UK</i></p> |
| <p style="color: red; font-size: small;">30 min. 14:30-15:00</p> | <p>5.2 E08 Thermocouple Kiels Mounted to Cooled Gas Turbine Components C D Ellis, C Bonham <i>Loughborough University, UK</i></p> |
| <p style="color: red; font-size: small;">30 min. 15:00-15:30</p> | <p>5.3 E13 Optical combustion monitoring and protection systems – product validation and release for gas turbine systems I Macafee <i>Oxsensis</i></p> |
| <p style="color: red; font-size: small;">30 min. 15:30-16:00</p> | <p>5.4 E14 Technology Trends in High temperature Pressure Sensors and Accelerometers A Schricker <i>PIEZOCRYST Advanced Sensorics Gmb</i></p> |
| <p>16:00 – 16:30</p> | <p>Afternoon Refreshments</p> |
| <p>16:30 - 18:00</p> | <p>Session D - 06 Chair: Björn Karlsson New Sensors Developments - III</p> |
| <p style="color: red; font-size: small;">30 min. 16:30-17:00</p> | <p>6.1 E30 Verification of gage factor of a high-temperature strain gage for dynamic test of gas turbine M Klymov, O Podobied <i>High Precision Measurements LLC, Ukrain</i></p> |
| <p style="color: red; font-size: small;">30 min 17:00-17:30</p> | <p>6.2 E23 Latest Advances in a Non-Contact Optical Fibre-Based System for Tip Clearance and Time of Arrival Measurements G Durana, J Amorebieta, G Aldabaldetrek, D Bargiela, G Zubia, J Zubia <i>Communications Engineering Department, University of the Basque Country UPV/EHU, Applied Mathematics Department, University of the Basque Country UPV/EHU, AOTECH (Advanced Optical Technologies S.L.), Bilbao, Basque Country (Spain)</i></p> |
| <p style="color: red; font-size: small;">30 min. 17:30-18:00</p> | <p>6.3 E28 Measurement of displacements in rotating objects with handheld cameras P Sousa Inegi, <i>UNIDADE DE MONITORIZAÇÃO AVANÇADA E INTEGRIDADE ESTRUTURAL / ADVANCED MONITORING AND STRUCTURAL INTEGRITY</i></p> |
| <p>18:00 - 19:00</p> | <p>EVI-GTI General Assembly meeting</p> |
| | |

The 10th EVI-GTI International Gas Turbine Instrumentation Conference

25. – 27. April 2023

DANUBIUS HOTEL HELIA, BUDAPEST

Wednesday 26. April 2023

| | |
|------------------------|--|
| | |
| 8:30 - 9:30 | ETC Invite Lecture #3 Exploring Ways to Reduce the True Climate Impact of Aviation Prof Rob Miller <i>FREng Professor of Aerothermal Technology, University of Cambridge</i> |
| 09:30 | Morning Refreshments Registration Elevator Pitches |
| 10:00 - 12:30 | Session D - 07 Chair: Michael Henke Engine Validation Instrumentation and Testing |
| 30 min. 10:00-10:30 | 7.1 E03 Aerodynamic Design and Experimental Validation of an In-Flow Settling Chamber for Turbomachinery Test Rigs M Henke, H Raetz, J R. Seume, L Junge, H Fleige <i>Leibnitz University Hannover, Institute of Turbomachinery and Fluid-Dynamics, Germany</i> |
| 30 min. 10:30-11:00 | 7.2 E04 Time-Resolved Temperature Measurement Inside the Primary Zone of a Combustion Chamber of a Turbomachine J-L Champion-Réaud, P-A Lambert, C Mendes, S Prat, P Bouyer <i>Safran-Tech, Safran Helicopter Engines</i> |
| 30 min. 11:00-11:30 | 7.3 E06 Digitized and Traceable Testing for Gas Turbine Components and Materials T Kluge, S Reh <i>Institute of Test and Simulation for Gas Turbines German Aerospace Center (DLR)</i> |
| 30 min. 11:30-12:00 | 7.4 E09 Experimental Studies on the Deterioration Characteristics and Transient Performance of the IAE V2500-A1 Research Turbofan Engine J Göing, S Lück, B Schulten, T Spuhler, N Budziszewski, J Städing, J Friedrichs <i>Institute of Jet Propulsion and Turbomachinery Technische Universität Braunschweig MTU Maintenance Hannover GmbH</i> |
| 30 min. 12:00-12:30 | 7.5 227 How to Measure the Functionality of Sewage Pumps D Beck, M Steffen, P U Thamsen <i>Technische Universität Berlin, Germany</i> |
| 12:30 | Lunch |

The 10th EVI-GTI

International Gas Turbine Instrumentation Conference

25. – 27. April 2023

DANUBIUS HOTEL HELIA, BUDAPEST

| | |
|------------------------|--|
| 14:00 - 14:45 | Keynote Session #1: BECOVER - Compressor Test Facility Promoting Environment & Research O Servais <i>BeCOVER</i> |
| 14:45 – 15:00 | Elevator Pitches: 4 x 4 Minutes Company and Product Presentations Chair: Hanspeter Zinn |
| 15:00 – 16:00 | Session D - 08 Chair: Björn Karlsson Optical Methods - I |
| 30 min. 15:00-15:30 | 8.1 E02 Highly Dense Total Temperature Measurement of Fast Air Streams with a 15-Point RFBG Sensor Array <i>A Stadler, A Zeisberger, A W. Koch, J Roths Munich University of Applied Sciences, Photonics Laboratory, MTU Aero Engines AG, Technical University of Munich</i> |
| 30 min. 15:30-16:00 | 8.2 E05 Image Processing Approach for Flame Dynamics Investigation in Gas Turbine Test Rig <i>A. Ferrante – Y. Qin – X. Lv Centro Combustione Ambiente Spa, Gioia del Colle, Italy, China United Gas Turbine Technology Corporate Ltd, Beijing, China</i> |
| 16:00 – 16:30 | Afternoon Refreshments |
| 16:30 – 18:00 | Session D - 09 Chair: Björn Karlsson Optical Methods - II |
| 30 min. 16:30-17:00 | 9.1 E07 High-Temperature Profile Monitoring in the Exhaust Duct of a 57 MW Gas Turbine with Fiber-Optic Sensor Array <i>F J. Dutz, B Karlsson, J Roths Munich University of Applied Sciences, Photonics Laboratory, Siemens Energy AB</i> |
| 30 min 17:00-17:30 | 9.2 256 PIV feasibility for aerodynamics measurements of a rainbow rotor in a short-duration turbine rig <i>M Okada, J Pinho, B Cernat, S Lavagnoli von Karman Institute for Fluid Dynamics, Belgium</i> |
| 30 min. 17:30-18:00 | 9.3 E20 Gas leaks detection in gas-plants: improving site reliability & safety using ultrasonic imaging <i>W Umbricht Distran AG Zürich</i> |
| | |

The 10th EVI-GTI International Gas Turbine Instrumentation Conference

25. – 27. April 2023

DANUBIUS HOTEL HELIA, BUDAPEST

Thursday 27. April 2023

| | |
|------------------------|--|
| | |
| 8:30 - 9:30 | ETC Invite Lecture #4 Sustainable Aviation – A combustion perspective Dr Kenneth Young <i>FIMechE, Engineering Fellow on Combustion of Rolls Roce plc</i> |
| 09:30 | Morning Refreshments Registration Elevator Pitches |
| 10:00 - 12:30 | Session D - 10 Chair: Ralf Obertacke Test Facilities |
| 30 min. 10:00-10:30 | 10.1 E10 Measurement of SAF Emissions using the SCITEK Honeywell Engine S Mason, M Christodoulou <i>SCITEK Consultants Ltd</i> |
| 30 min. 10:30-11:00 | 10.2 E11 Flexible jet engine test bed for engineering education S Mason, M Christodoulou <i>SCITEK Consultants Ltd</i> |
| 30 min. 11:00-11:30 | 10.3 172 A large-scale high pressure and temperature compressed air feed system for two gas turbine test facilities to enable heat transfer studies J Goodenough, A Messenger, P Beard <i>Department Engineering Science, University of Oxford, UK</i> |
| 30 min. 11:30-12:00 | 10.4 263 Commissioning of a Newly Designed Experimental Facility for Hot Gas Ingestion Investigation L Orsini, A Picchi, B Facchini, A Bonini, S Brocchi, L Innocenti <i>University of Florence, Baker Hughes</i> |
| 30 min. 12:00-12:30 | 10.5 E19 LIFT Laboratory: ITP Aero High Speed Compressor Rig Testing Facility J Parra, D García, E Arias, V Pinilla <i>Aerodynamic Testing Department, ITP Aero S.A.U.</i> |
| 12:30 | Lunch |
| 14:00 - 16:00 | Session D - 11 Chair: Michael Henke Test Facilities and Validation Measurement - I |
| 30 min. 14:00-14:30 | 11.1 E26 Design of a Test Bench for the Gas-Dynamic Investigation of the Anode Circuit of fuel Cells N Dohme, H Rätz, J Seume <i>Institute of Turbomaschinery and Fluid-Dynamics, Leibniz University of Hannover</i> |

The 10th EVI-GTI

International Gas Turbine Instrumentation Conference

25. – 27. April 2023

DANUBIUS HOTEL HELIA, BUDAPEST

| | |
|--|---|
| <p style="color: red; font-size: small;">30 min. 14:30-15:00</p> | <p>11.2 E27 Heat Load Measurement and Heat Map Sensitivity Analysis For Civil Aero-Engines S Jafari, A Ebrahimi, T Nikolaidis <i>Centre of Propulsion and Thermal Power Engineering, Cranfield University, UK</i></p> |
| <p style="color: red; font-size: small;">30 min. 15:00-15:30</p> | <p>11.3 E29 A Data Acquisition and Modern Interactive Visualisation System for Aeronautical Education Facility M Christodoulou, T Worle, S Mason <i>SCITEK Consultants Ltd</i></p> |
| <p style="color: red; font-size: small;">30 min. 15:30-16:00</p> | <p>11.4 E25 Hardware in the Loop Simulation of Gas Turbines: How Control System Design Tools Can be Exploited Also to Generate Fault Cases to Tune Data Based Diagnostic Systems A Brighenti, C Brighenti <i>S.A.T.E. Systems and Advanced Technologies Engineering S.r.l. Italy</i></p> |
| <p>16:00 – 16:30</p> | <p>Afternoon Refreshments</p> |
| <p>16:30 - 18:00</p> | <p>Session D - 12 Chair: Michael Henke Test Facilities and Validation Measurement - II</p> |
| <p style="color: red; font-size: small;">30 min. 16:30-17:00</p> | <p>12.1 160 Systematic Comparison of Sensor Signals for Pump Operating Points Estimation using Convolutional Neural Network H. Ma, O. Kirschner, S. Riedelbauch <i>University of Stuttgart, Institute of Fluid Mechanics and Hydraulic Machinery, Stuttgart, Germany</i></p> |
| <p style="color: red; font-size: small;">30 min. 17:00-17:30</p> | <p>12.2 165 New supersonic nozzle test-rig used to generate condensing flow test data according to Barschdorff M E Maqueo Martinez, S Schippling, M Schatz, D M Vogt <i>University of Stuttgart, ITSM-Institute of Thermal Turbomachinery and Machinery Laboratory, Stuttgart, Germany, Helmut-Schmidt-University, Hamburg, Germany</i></p> |
| <p>17:30 - 17:40</p> | <p>Conference Chair Closing Remarks Ralf Obertacke, President EVI-GTI</p> |
| <p>17:40 - 19:00</p> | <p>EVI-GTI Board meeting</p> |
| | |