

The 10th EVI-GTI International Gas Turbine Instrumentation Conference

25. – 27. April 2023

DANUBIUS HOTEL HELIA, BUDAPEST

Tuesday 25. April 2023

07:30am - 08:15am	Registration
8:30am - 9:30am	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>
09:30am	Morning Refreshments and Registration Elevator Pitches
10:00am - 10:15am	Conference Chair Welcome Ralf Obertacke, President EVI-GTI Welcome to Budapest
10:15am - 10:30am	Elevator Pitches: 4 x 4 Minutes Company and Product Presentations Chair: Michael Henke
10:30am - 12:00pm	Session D - 04 Chair: Björn Karlsson New Sensors Developments - I
10:30am - 11:00am	4.1 E22 Advanced thermal mapping using Thermal History Technology: A review S Araguas Rodriguez <i>Sensor Coating Systems Ltd</i>
11:00am - 11:30am	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>
11:30am - 12:00pm	4.3 E12 Capacisense Technology Comparison between Triax and Pseudo Triax N Billiard <i>Gadcap</i>
12:00pm - 12:30pm	4.4 E31 Discussion of Novel Gradient Temperature Measurement Technique Anastasia Thomas <i>LG Tech Link</i>
12:30pm	Lunch

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Tuesday 25. April 2023, cont'd

02:00pm - 04:00pm	Session D - 05 Chair: Hanspeter Zinn New Sensors Developments - II
02:00pm - 02:30pm	5.1 E21 Scaling Temperature Recovery Factors: Moving from the Calibration to the Engine Environment <i>C Bonham Loughborough University, UK</i>
02:30pm - 03:00pm	5.2 E08 Thermocouple Kiels Mounted to Cooled Gas Turbine Components <i>C D Ellis, C Bonham Loughborough University, UK</i>
03:00pm - 03:30pm	5.3 E13 Optical combustion monitoring and protection systems – product validation and release for gas turbine systems <i>I Macafee Oxsensis</i>
03:30pm - 04:00pm	5.4 E14 Technology Trends in High temperature Pressure Sensors and Accelerometers <i>A Schricker PIEZOCRYST Advanced Sensorics Gmb</i>
04:00pm - 04:30pm	Afternoon Refreshments
04:30pm - 06:00pm	Session D - 06 Chair: Björn Karlsson New Sensors Developments - III
04:30pm - 05:00pm	6.1 E30 Verification of gage factor of a high-temperature strain gage for dynamic test of gas turbine <i>M Klymov, O Podobied High Precision Measurements LLC, Ukrain</i>
05:00pm - 05:30pm	6.2 E23 Latest Advances in a Non-Contact Optical Fibre-Based System for Tip Clearance and Time of Arrival Measurements <i>G Durana, J Amorebieta, G Aldabaldetrekue, D Bargiela, G Zubia, J Zubia 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>
05:30pm - 06:00pm	6.3 E28 Measurement of displacements in rotating objects with handheld cameras <i>P Sousa Inegi, UNIDADE DE MONITORIZAÇÃO AVANÇADA E INTEGRIDADE ESTRUTURAL / ADVANCED MONITORING AND STRUCTURAL INTEGRITY</i>
06:00pm - 07:00pm	EVI-GTI General Assembly meeting

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Wednesday 26. April 2023

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

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Wednesday 26. April 2023, cont'd

02:00pm -	Keynote Session #1: BECOVER - Compressor Test Facility Promoting Environment & Research
02:45pm	O Servais <i>BeCOVER</i>
02:45pm -	Elevator Pitches: 4 x 4 Minutes Company and Product Presentations
03:00pm	Chair: Hanspeter Zinn
03:00pm -	Session D - 08 Chair: Björn Karlsson
04:00pm	Optical Methods - I
03:00pm -	8.1
03:30pm	E02 Highly Dense Total Temperature Measurement of Fast Air Streams with a 15-Point RFBG Sensor Array
	A Stadler, A Zeisberger, A W. Koch, J Roths <i>Munich University of Applied Sciences, Photonics Laboratory, MTU Aero Engines AG, Technical University of Munich</i>
03:30pm -	8.2
04:00pm	E05 Image Processing Approach for Flame Dynamics Investigation in Gas Turbine Test Rig
	A. Ferrante – Y. Qin – X. Lv <i>Centro Combustione Ambiente Spa, Gioia del Colle, Italy, China United Gas Turbine Technology Corporate Ltd, Beijing, China</i>
04:00pm -	Afternoon Refreshments
04:30pm	
04:30pm -	Session D - 09 Chair: Björn Karlsson
06:00pm	Optical Methods - II
04:30pm -	9.1
05:00pm	E07 High-Temperature Profile Monitoring in the Exhaust Duct of a 57 MW Gas Turbine with Fiber-Optic Sensor Array
	F J. Dutz, B Karlsson, J Roths <i>Munich University of Applied Sciences, Photonics Laboratory, Siemens Energy AB</i>
05:00pm -	9.2
05:30pm	256 PIV feasibility for aerodynamics measurements of a rainbow rotor in a short-duration turbine rig
	M Okada, J Pinho, B Cernat, S Lavagnoli <i>von Karman Institute for Fluid Dynamics, Belgium</i>
05:30pm -	9.3
06:00pm	E20 Gas leaks detection in gas-plants: improving site reliability & safety using ultrasonic imaging
	W Umbricht <i>Distran AG Zürich</i>

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Thursday 27. April 2023

8:30am -	ETC Invite Lecture #4 Sustainable Aviation – A combustion perspective
9:30am	Dr Kenneth Young <i>FIMechE, Engineering Fellow on Combustion of Rolls Roce plc</i>
09:30am	Morning Refreshments Registration Elevator Pitches
10:00am -	Session D - 10 Chair: Ralf Obertacke Test Facilities
10:00am -	10.1
10:30am	E10 Measurement of SAF Emissions using the SCITEK Honeywell Engine S Mason, M Christodoulou <i>SCITEK Consultants Ltd</i>
10:30am -	10.2
11:00am	E11 Flexible jet engine test bed for engineering education S Mason, M Christodoulou <i>SCITEK Consultants Ltd</i>
11:00am -	10.3
11:30am	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>
11:30am -	10.4
12:00pm	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>
12:00pm -	10.5
12:30pm	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>
12:30pm	Lunch

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<i>Thursday 27. April 2023, cont'd</i>	
02:00pm - 04:00pm	Session D - 11 Chair: Michael Henke Test Facilities and Validation Measurement - I
02:00pm - 02:30pm	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>
02:30pm - 03:00pm	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>
03:00pm - 03:30pm	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>
03:30pm - 04:00pm	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>
04:00pm - 04:30pm	Afternoon Refreshments
04:30pm - 05:30pm	Session D - 12 Chair: Michael Henke Test Facilities and Validation Measurement - II
04:30pm - 05:00pm	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>
05:00pm - 05:30pm	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>
05:30pm - 05:40pm	Conference Chair Closing Remarks Ralf Obertacke, President EVI-GTI
05:40pm - 07:00pm	EVI-GTI Board meeting
07:30pm	ETC15 Gala Dinner