



AWARDS PROGRAM

ASME International Gas Turbine Institute

THE AWARDS

2022

ASME R. Tom Sawyer Award

2020

ASME Gas Turbine Award

2020

John P. Davis Award

2022

Dedicated Service Award

2022

ASME IGTI Aircraft Engine Technology Award

2022

ASME IGTI Industrial Gas Turbine Technology Award

2022

ASME IGTI Dilip R. Ballal Early Career Engineer Award

2022

ASME Turbo Expo Early Career Engineer Travel Award

2022

ASME IGTI Student Advisory Committee Travel Award

AWARD COMMITTEES



Honors & Awards Committee

William T. Cousins
CHAIR



Aircraft Engine Technology Award Committee

Wilfried Visser
CHAIR



Industrial Gas Turbine Technology Award Committee

John Gülen
CHAIR

2022

ASME R. Tom Sawyer Award

Awarded to an individual who has made important contributions to advance the purpose of the gas turbine industry and the ASME International Gas Turbine Institute over a substantial period of time. The contribution may be in any area of Institute activity but must be marked by sustained forthright efforts.



Dr. Tim Lieuwen

Regents Professor
Georgia Institute of Technology

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Dr. Tim Lieuwen is a Regents' Professor, the David S. Lewis, Jr. Professor, and the Executive Director of the Strategic Energy Institute at Georgia Tech. In this capacity, he manages Georgia Tech's overall strategy and external relations for its \$120M/year energy portfolio.

He is also founder and CTO of TurbineLogic, an analytics firm working in the energy industry. Prof. Lieuwen is an international authority on clean energy, and his work has contributed to numerous commercialized innovations in the energy and aerospace sectors. He has authored 4 books and over 400 other publications.

Current and past board positions include governing/advisory boards for *Oak Ridge National Lab*, *Pacific Northwest National Lab*, and the *National Renewable Energy Lab*, appointment by the DOE Secretary to the *National Petroleum Counsel*, and board member of the *ASME International Gas Turbine Institute*.

2020

ASME Gas Turbine Award

The Gas Turbine Award was established in 1963 to be given in recognition of an outstanding contribution to the literature of combustion gas turbines or gas turbines thermally combined with nuclear or steam power plants.

RECEIVING THE 2020 GAS TURBINE AWARD FOR THEIR PAPER:

"Some Observations on the Computational Sensitivity of Rotating Cavity Flows"



Tom Hickling
University of Oxford

Tom Hickling is a final year DPhil candidate in the University of Oxford Department of Engineering Science. He is also a stipendiary lecturer at Somerville College. He completed his MEng degree at Durham University in 2018. Tom's DPhil research, supervised by Prof. Li He, focusses on the assessment of turbulence modelling in rotating cavity flows, and the development of multi-scale approaches to enable the use of conjugate heat transfer with large eddy simulation.



Li He
University of Oxford

Li He is Statutory Professor of Computational Aerothermal Engineering at Oxford University. He had been the head of Osney Laboratory (2008-2011), overseeing a major 18-month lab relocation, selecting/acquiring the 2nd generation Oxford Turbine Rotor Facility, and doubling the number of academics during his headship. After Ph.D. and a college research fellowship at Cambridge, he had been at Durham University as Lecturer, Reader and Professor before taking up Royal Academy of Engineering/Rolls-Royce

Research Chair at Oxford (2008-2013). He currently serves as the Oxford co-director of the EPSRC Doctoral Training Centre in Gas Turbine Aerodynamics.

2020

John P. Davis Award

Awarded to a paper that focuses on new or continuing gas turbine applications, identifies planning, installation, operating and/or maintenance problems and their solutions, and exemplifies candid exposure of real-world problems and solutions.



Dr. David John Rajendran

Research Fellow, Rolls-Royce
University Technology Centre

Dr David John Rajendran is a Research Fellow within the Rolls-Royce University Technology Centre for Aero Systems Design, Integration and Performance at Cranfield University, United Kingdom. He specialises in aero systems design and analysis for future propulsion architectures. David graduated with distinction in his bachelor's degree in Aeronautical Engineering from Madras Institute of Technology, India.

Thereafter, he enrolled in the Gas Turbine Technology Master's degree at Cranfield University. In his Master's programme, his research looked into the turbine aerodynamic behaviour in overspeed conditions for which he was awarded the Royal Aeronautical Society NE Rowe Award. He also received the Roy Fedden Memorial Prize for excellence in his graduate studies. Subsequently, he did his doctoral research within the Rolls-Royce University Technology Centre at Cranfield University where he explored the design space of using Variable Pitch Fans for reverse thrust in future efficient, environment friendly, civil gas turbines. The research resulted in several observations and insights that can be used in the engineering design process of future variable pitch fan reverse thrust systems. Design schematics to improve various aspects of the reverse thrust system from the work are in the process of being filed as 6 patents. He has co-authored 4 journal articles and 16 conference publications on variable pitch fans, turbine overspeed aerodynamics and turbine aerodynamic design.

David's research interests include development of robust high fidelity methods for numerical flow solutions in complete integrated systems and system level interdependency explorations to develop optimum aerodynamic designs for future propulsion architectures. He is also involved in integrated modelling of experimental facilities, exploration of unconventional flows, design code development for quick concept studies and multi-disciplinary optimization.



Dr. Vassilios Pachidis

MEng, MSc, PhD, CEng, FIMechE

Vassilios Pachidis is a Professor of Propulsion Integration Engineering and Head of 'Centre for Propulsion' at Cranfield University in the UK. He is also the Director of the 'Rolls-Royce University Technology Centre (UTC) in Aero Systems Design, Integration & Performance' at Cranfield (Deputy Director 2008-2014) and the Head of the new 'Cranfield Institute of Technology for Air & Space Propulsion' (since Jan 2021). Prior to this, Vassilios acted as the Head of the Gas Turbine Engineering Group within the Centre for Propulsion from 2010 to August 2021.

Vassilios was educated at The University of Liverpool where he obtained a 1st Class Hons MEng degree Aerospace Engineering (graduated in 2000). Subsequently he joined Cranfield University and enrolled in the Aerospace Propulsion option of the Thermal Power MSc (graduated in 2001). He then became a member of staff at Cranfield whilst pursuing a part-time PhD in Gas Turbine Advanced Performance Simulation which he completed in 4 years.

Vassilios has taught more than 700 postgraduates since 2002 and more than 150 Short Course delegates since 2006. He has supervised more than 165 MSc and 32 Doctoral Candidates to completion. He has published widely (more than 69 peer-reviewed papers in 4* and 3* journals, more than 98 fully peer-reviewed conference papers) and holds 17 joint patents filed with Rolls-Royce plc. He won the Rolls-Royce Howse-Raffles Award in 2015 and the prestigious ASME/IGTI John P. Davis Award two years in a row in 2019 and 2020. He also holds 7 ASME Turbo Expo Committee 'Best Paper' Awards among other distinctions.

2022

ASME Dedicated Service Award

The ASME Dedicated Service Award honors unusual dedicated voluntary service to the Society marked by outstanding performance, demonstrated effective leadership, prolonged and committed service, devotion, enthusiasm and faithfulness.



David G. Bogard

Professor, University of Texas at Austin

David Bogard has served with the faculty in the Walker Department of Mechanical Engineering at the University of Texas at Austin since 1982. He is currently the Associate Chair for Administration and Research for the department, and holds the Baker Hughes Incorporated Centennial Professorship in Mechanical Engineering.

Prof. Bogard is a Fellow of the ASME, and has served the Society as conference session organizer/chair, vanguard chair, and tutorial chair for multiple conferences. He has also served

the Society as an Associate Editor, and is currently Editor-in-Chief for the ASME Journal of Turbomachinery.

Prof. Bogard has conducted research in gas turbine cooling for more than 35 years, and has more than 200 refereed publications in this area. He and his coauthors have been awarded three ASME Heat Transfer Committee Outstanding Paper awards. His research studies have focused on cooling of turbine components using sophisticated experimental models and computational simulations. He is particularly noted for the development of many designs for improving turbine film cooling, and the development of many new techniques for evaluating and quantifying film cooling performance.

2022

Aircraft Engine Technology Award

For outstanding contribution to air breathing propulsion through inspiring leadership, education, and research having major impacts on aircraft engine operational capability, performance, and design.



Luis San Andrés

Mast-Childs Chair Professor of Mechanical Engineering at Texas A & M University

Luis San Andrés is the Mast-Childs Chair Professor of Mechanical Engineering at Texas A & M University (TAMU). He earned a Suma Cum Laude BS in Mechanical Engineering from the Escuela Politecnica in Ecuador, and awarded a Fulbright scholarship to pursue a MS at the University of Pittsburgh. Luis earned a PhD from TAMU and joined the university to educate students on vibrations, rotordynamics and lubrication.

Through 30 plus years conducting funded research at the TAMU Turbomachinery Laboratory, professor San Andrés and students have produced experimentally verified models of squeeze film dampers for aircraft engines, hybrid bearings for cryogenic turbopumps, nonlinear dynamics of turbochargers, gas foil bearings for oil-free machinery, lubricated bearings for high performance turbomachinery, and multiple-phase flow seals for wet gas compressors.

Luis is a Fellow of ASME, the Society of Tribologists and Lubrication Engineers, and the Global Power Propulsion Society. The Organization of American States recognized him with a Latin-American Applied Science Award. He is also a member of the Industrial Advisory Committees for the TAMU Turbomachinery and Pump Symposia in Houston and Asia. Dr. San Andrés and students have authored over 200 papers in refereed journals, with over a dozen recognized as best at various conferences.

2022

Industrial Gas Turbine Technology Award

For outstanding contributions to the electric power and mechanical drive industries through his leadership, research and development, and advocacy on behalf of industrial gas turbines.



Richard Tuthill

Principal, RST Associates, LLC

Richard Tuthill, of Bolton, CT, [USA] will be awarded the IGTI Industrial Gas Turbine Technology Award at ASME Turbo Expo in Rotterdam in June.

Tuthill's career in gas turbines has spanned more than fifty years, primarily in the areas of combustion research and development, advocacy on behalf of the gas turbine industry, and technical advising. He is being honored for his contributions to clean air through ground power emissions reductions, developing the ability to burn abundant alternate

fuels cleanly, his early support for engineering profession diversity, and for leadership of the Gas Turbine Association.

Tuthill holds a B.S. in Mathematics from Clarkson University and an M.S. in Mechanical Engineering from Rensselaer Polytechnic Institute. He is the holder of thirteen combustion related patents. His corporate affiliations have been Pratt & Whitney and General Electric, and he is currently the Principal of RST Associates. Tuthill performed national service in the US Peace Corps as a mathematics teacher at Mbabane Central High School, Eswatini, Africa, during which he met his future wife Dorothy. He has been active in local civic affairs.

2022

Dilip R. Ballal Early Career Award

Awarded to an individual who has made significant contributions in the gas turbine industry within the first five years of their career.



Natalie R. Smith

Senior Research Engineer,
Southwest Research Institute

Dr. Natalie Smith is a Senior Research Engineer in the Machinery Department at Southwest Research Institute. Her research experience includes aerodynamic design and testing of turbomachinery and advanced system analysis for programs related to power generation, aviation, oil & gas and energy storage both in academia and industry. She is a demonstrated leader in energy storage in which she has designed and operated first-of-kind laboratory-scale facilities. Her contributions in turbomachinery have resulted in 18 journal publications, three book chapters, 30 conference papers, and three best paper awards. Dr. Smith serves on the ASME Global Gas Turbine News editorial committee, has served on the ASME PTC-10 update committee, and has held leadership positions in Turbo Expo at the technical committee and organizing committee levels. She served as the Review Chair for Turbo Expo 2022. Finally, she teaches thermodynamics at a local university, coaches a high school mountain bike team, and holds two national titles in mountain biking.

OUTGOING CHAIRS

The core of IGTI is its committees, and the members of those committees drive our excellence. We greatly appreciate those individuals who commit to leading these committees as chair and recognize their time, expertise and effort required to do the job. Thank you for your service from July 1, 2020 to June 30, 2022 and especially during two years of the unknown with the Covid-19 Pandemic.

Konstantinos Kyprianidis

Aircraft Engine

Marc D. Polanka

Heat Transfer

Pierre Q. Gauthier

Coal, Biomass & Alternative Fuels

William David Day

Manufacturing Materials
& Metallurgy

Liang Tang

Controls, Diagnostics &
Instrumentation

Jeffrey S. Patterson

Marine

Subith Vasu

Education

Michael Gorelik

Structures & Dynamics

John Gülen

Electric Power

Mavroudis Kavvalos

Student Advisory

(JULY 1, 2021 - JUNE 30, 2022)

Dr. Giovanni Delibra

Fans and Blowers

BEST PAPERS

Aircraft Engine

GT2021-58829: Fan-Intake Coupling With Conventional and Short Intakes

E. J. Gunn, T. Brandvik, M. J. Wilson

Ceramics

GT2021-60277: Life Limiting Aspects of an MI SiC/SiC Ceramic Matrix Composite (CMC) in Interlaminar Shear at Elevated Temperature

S. Kane, A. Stanley, L. Sanchez, D. C. Faucett, S. R. Choi

Coal, Biomass & Alternative Fuels

GT2021-60093: Reaction Model Development of Selected Aromatics as Relevant Molecules of a Kerosene Surrogate – The Importance of M-Xylene Within the Combustion of 1,3,5-Trimethylbenzene

Astrid Ramirez Hernandez, Trupti Kathrotia, Torsten Methling, Marina Braun-Unkhoff, Uwe Riedel

Combustion, Fuels, and Emissions

GT2021-60074: Predicting the Amplitude of Thermoacoustic Instability Using Universal Scaling Behaviour

Induja Pavithran, Vishnu R. Unni, Abhishek Saha, Alan J. Varghese, R. I. Sujith, Norbert Marwan, Jürgen Kurths

GT2021-60058: Acoustic-Convective Interference In Transfer Functions of Methane/Hydrogen and Pure Hydrogen Flames

Eirik Aesøy, José G. Aguilar, Mirko R. Bothien, Nicholas A. Worth, James R. Dawson

Controls, Diagnostics, and Instrumentation

GT2021-58998: Turbine Inlet Temperature Measurements in a T 8200 kW Gas Turbine Using Water Vapor Emission

Dale Tree, Dustin Badger, Darell Zeltner, Mohsen Rezasoltani

Cycle Innovations

GT2021-59487: A Novel Energy Storage System Based on Carbon Dioxide Unique Thermodynamic Properties

Marco Astolfi, Ennio Macchi, Dario Rizzi, Claudio Spadacini

Education

GT2021-58697: Online (Remote) Teaching for Laboratory Based Courses Using “Digital Twins” of the Experiments

Sabri Deniz, Ulf Christian Müller, Ivo Steiner, Thomas Sergi

Electric Power

GT2021-59082: Prediction Enhancement of Machine Learning Using Time Series Modeling in Gas Turbines

Vipul Goyal, Mengyu Xu, Jayanta Kapat, Ladislav Vesely

Fans & Blowers

GT2021-59465: Optimization of a Tip Appendage for the Control of Tip Leakage Vortices in Axial Flow Fans

Thomas Meyer, Sybrand J. Van Der Spuy, Christiaan J. Meyer, Alessandro Corsini

Heat Transfer: Film Cooling

GT2021-59312: Effect Of Spanwise Hole to Hole Spacing On Overall Cooling Effectiveness Of Effusion Cooled Combustor Liners For A Swirl Stabilized Can Combustor

Shoaib Ahmed, Benjamin H. Wahls, Srinath Ekka, Hanjie Lee, Yin-Hsiang Ho

Heat Transfer: General Interest

GT2021-59588: Impact Of Ceramic Matrix Composite Topology on Friction Factor And Heat Transfer

Trevor M. Cory, Ryan D. Edelson, Karen A. Thole, Tyler Vincent, San Quach, Dominic Mongillo

Industrial and Cogeneration

GT2021-59180: A Comparison Between ORC and Supercritical CO₂ Bottoming Cycles For Energy Recovery From Industrial Gas Turbines Exhaust Gas

M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto, N. Torricelli

Manufacturing Materials & Metallurgy

GT2021-59172: Influence of the Tool Wear on the Quality and Service Life of Gears for the Geared Turbofan Technology Machined by Five-Axis Milling

Thomas Lakner, Christoph Zachert, René Greschert, Daniel Schraknepper, Thomas Bergs

Mircoturbines, Turbochargers, and Small Turbomachinery

GT2021-58869: Proof-Of-Concept of a Thermal Barrier Coated Titanium Cooling Layer for an Inside-Out Ceramic Turbine

Antoine Gauvin-Verville, Patrick K. Dubois, Benoit Picard, Alexandre Landry-Blais, Jean-Sébastien Plante, Mathieu Picard

Oil & Gas Applications

GT2021-59458: A Stochastic Model for Nanoparticle Deposits Growth

Alessio Suman, Alessandro Vulpio, Nicola Casari, Michele Pinelli

Steam Turbine

GT2021-59135: Experimental and Numerical Study for Improved Understanding of Mixed-Convection Type of Flows in Turbine Casing Cavities During Shut-Down Regimes

Oguzhan Murat, Budimir Rosic, Koichi Tanimoto, Ryo Egami

Structures & Dynamics

GT2021-60007: Frequency Dependency of Dynamic Force Coefficients for Hermetic Squeeze Film Dampers Utilizing Fluid-Bounding Flexible Structures

Bugra Ertas, Keith Gary

GT2021-58771: Measurements to Quantify the Effect of a Reduced Flow Rate on the Performance of a Tilting Pad Journal Bearing (LBP) With Flooded Ends

Luis San Andrés, Jonathan Toner, Andy Alcantar

GT2021-58842: A Probabilistic Machine Learning Framework for Explicit Inverse Design of Industrial Gas Turbine Blades

Sayan Ghosh, Valeria Andreoli, Govinda A. Padmanabha, Cheng Peng, Steven Atkinson, Piyush Pandita, Thomas Vandeputte, Nicholas Zabaraz, Liping Wang

Supercritical CO₂ Power Cycle

GT2021-59527: Challenges With Measuring Supercritical CO₂ Compressor Performance When Approaching the Liquid-Vapor Dome

Jason Mortzheim, Douglas Hofer, Stephan Priebe, J. Jeffrey Moore, Stefan Cich, Aaron McClung

Turbomachinery

GT2021-58678: Effects of Surface Waviness on Fan Blade Boundary Layer Transition and Profile Loss – Part II: Experimental Assessments and Applications

Jinwook Lee, Vaishnavi Ramaswamy, Zoltán S. Spakovszky, Edward M. Greitzer, Mark Drela, Jérôme Talbotec

GT2021-58676: Effects of Surface Waviness on Fan Blade Boundary Layer Transition and Profile Loss – Part I: Methodology and Computational Results

Jinwook Lee, Zoltán S. Spakovszky, Edward M. Greitzer, Mark Drela, Jérôme Talbotec

GT2021-59701: Vortex Tracking of Purge-Mainstream Interactions in a Rotating Turbine Stage

Alex W. Mesny, Mark A. Glozier, Oliver J. Pountney, James A. Scobie, Yan Sheng Li, David J. Cleaver, Carl M. Sangan

GT2021-60204: Experimental and Numerical Similitude Study Using a Novel Turbocompressor Test Facility Operating With Helium-Neon Gas Mixtures

Maxime Podeur, Damian M. Vogt

Wind Energy

GT2021-59102: A Robust Procedure to Implement Dynamic Stall Models Into Actuator Line Methods for the Simulation of Vertical-Axis Wind Turbines

Pier Francesco Melani, Francesco Balduzzi, Alessandro Bianchini

2022

Turbo Expo Early Career Engineer Travel Award

Elissavet Boufidi

von Karman Institute for Fluid Dynamics

Bogdan Cernat

von Karman Institute for Fluid Dynamics

Ivan Monge-Concepcion

Honeywell Aerospace of Puerto Rico

Brian Connolly

Southwest Research Institute

Francesco Crespi

University of Seville

Eric DeShong

Pennsylvania State University

Penghao Duan

Univresity of Oxford

Shreyas Hegde

Pratt & Whitney

Richard Hollenbach III

Duke University

Thomas Kerr

Southwest Research Institute

Jeong-Won Kim

Georgia Institute of Technology

Brian Knisely

Carrier Corporation

Amit Kumar

Indian Institute of Technology Bombay

Manas Madasseri Payyappalli

von Karman Institute for Fluid Dynamics

Owen Pryor

Southwest Research Institute

Hui Tang

University of Bath

Loris Simonassi

von Karman Institute for Fluid Dynamics

Spencer Sperling

Honeywell Aerospace

Ladislav Vesely

University of Central Florida

Stavros Vourus

Malardalen University

2022

Student Advisory Committee Travel Award

Dimitrios Bermperis

Malardalen University

Gonçalo Granjal Cruz

von Karman Institute

Nicola Detomaso

Institut national polytechnique
de Toulouse (INP)

Molly Donovan

University of Dayton

Ritesh Ghorpade

University of Central Florida

Nathaniel Gibbons

University of Virginia

Andrea Notaristefano

Politecnico di Milano

Antonio Escamilla Perejón

University of Seville

Wu Hangkong

Northwestern Polytechnical University

Ashwini Karmarkar

Penn State University

Omar Sherif Mohamed

The University of Florence

Noraiz Mushtaq

Politecnico di Milano

Mizuki Okada

von Karman Institute for Fluid Dynamics

Hien Minh Phan

University of Oxford

Michael Pierro

University of Central Florida

Avinash Renuke

University of Genova, Italy

Smruti Sahoo

Mälardalen University

Antonino Federico Maria Torre

Univesité de Liège

Dimitra Tsakmakidou

Loughborough University,
Loughborough, Leicestershire, UK

Ryan Wardell

The University of Central Florida

Peter Warren

University of Central Florida

Alexander Wildgoose

Pennsylvania State University

Sen Zhang

Northwestern Polytechnical
University

Jessica Baker

University of Central Florida

Maria Rozman

The Pennsylvania
State University

Md Abir Hossain

The University of Texas at El Paso

Erhan Ferhatoglu

Politecnico di Torino

Matthew Meier

Purdue University

Emmanuel Gabriel-Ohanu

University of Central Florida

Peter Wilkins

Pennsylvania State University

Nandhini Raju

University of Central Florida

Majid Asli

Technical University of Berlin

Aggelos Gaitanis

Université catholique de Louvain

Mohammed Ibrahim Kittur

University of Malaya

Oguzhan Murat

University of Oxford

Anjali Dwivedi

Indian Institute of Technology Kanpur

Gauthier Fieux

University of Bath

Gustavo Lopes


von Karman Institute for Fluid Dynamics (Be) / Université de Liège (Be)

Thomas Michael Corbett

The Pennsylvania State University

Emma Michelle Veley

Penn State University



Congratulations to all award recipients and thank you to all ASME IGTI committee award representatives whose work assists the honors and awards chair and the honors and awards committee.

