



GT India

Gas Turbine India Conference

7th - 8th December, 2023

Infosys, Electronic City,
Bengaluru

Power and Propulsion – A Sustainable Future

FINAL PROGRAM

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Message from the Conference Chair

The ASME is proud to present the eighth biennial ASME Gas Turbine (GT) India Conference being held at the Infosys Campus, Bengaluru this year from December 7-8, 2023. This two-day event attracts the industry's leading professionals, key decision makers and scholars from academia whose innovation and expertise are shaping the next generation technologies related to power and propulsion.



Post COVID-19 pandemic, there has been an increasing demand for better power and air traffic management worldwide in growing economies including India. At the same time, there is a strong commitment from OEMs and policy makers for decarbonization and net zero carbon emissions. Hence, technologies driving power and propulsion are undergoing a transformation and hence there is a need for technologies to go beyond higher output and efficiency for a sustainable future. Appropriately, the theme of ASME GT India Conference 2023 is **'Power and Propulsion – A Sustainable Future.'** We are hosting this conference to focus on stimulating topics such as alternate fuels and efficient combustion designs, novel materials and manufacturing techniques, innovative thermodynamic cycles, predictive maintenance through digital solutions, hybrid-electric propulsion, advances in renewables and multi-disciplinary design optimization.

We sincerely thank all the authors and speakers who devoted valuable time to present their papers and perspectives to the turbomachinery community in the region. We appreciate the dedicated efforts of all the turbomachinery professionals across academia, industry and national labs who have extended their support as review chairs, vanguard chairs and session organizers. I would like to truly recognize the diligent efforts of the conference core team members - Ms. Harmeet Kaur from Boeing, Prof. A.M. Pradeep of IIT Bombay, and Ms. Hiral Shah from Siemens. I would also like to express my gratitude to the ASME staff and ASME GT India Executive Committee for their dedicated support and guidance in making this conference a reality. We sincerely acknowledge all sponsoring organizations for their generous contributions. ASME GT India is indebted to Infosys for hosting this conference at their prestigious Bengaluru campus with excellent infrastructure facilities to make this conference a success.

While the last edition of ASME GT India Conference 2021 was held virtually, this is our first conference post pandemic in an in-person mode. On behalf of the entire team, I would like to welcome you all to the conference and hope that it will provide a platform for all the participants to network and help build collaborative partnerships to continue to push the boundaries of technologies in power and propulsion.

Best wishes for an insightful and enriching conference experience to help embark towards sustainable future!

Mr. Hiteshkumar Mistry

Conference Chair, ASME

Engineering Development & Learning Leader

GE Aerospace, Bengaluru

Sponsors and Exhibitors

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Exhibitors



Schedule at a Glance

Thursday, 7 December, 2023





Inauguration & Opening Plenary	09:30 AM - 10:00 AM
Keynote Session	10:00 AM - 10:45 AM
Tea/Coffee break & Expo Visit	10:45 AM - 11:15 AM
Leadership Panel Discussion : Power & Propulsion - A Sustainable Future	11:15 AM - 12:45 PM
Lunch & Expo visit	12:45 PM - 1:35 PM
Invited Talks and Technical Sessions	1:45 PM - 3:45 PM
Tea/Coffee Break	3:45 PM - 4:00 PM
Tutorial and Technical Session	4:00 PM - 6:00 PM

Friday, 8 December, 2023

Keynote Session	9:00 AM - 9:45 AM
Tea/Coffee break & Expo Visit	9:45 AM - 10:00 AM
Panel Discussion : Contribution of Women Engineers in Power & Propulsion Industry	10:05 AM - 11:20 AM
Tutorials, Invited Talk and Technical Session	11:30 AM - 1:00 PM
Lunch & Expo visit	1:00 PM - 1:45 PM
Invited Talk, Tutorial and Technical Sessions	2:00 PM - 4:00 PM
Closing Plenary & Vote of Thanks	4:15 PM - 5:00 PM
Hi Tea & Networking	5:00 PM - 5:30 PM

Conference Leadership

Organizing Committee

Conference Chair	Technical Program Chair	Review Chair	Review Vice Chair
			

Hiteshkumar Mistry
EEDP & Learning Leader,
GE Aerospace, Bengaluru

Harmeet Kaur
Senior Manager
Production Engineering
Boeing India

A M Pradeep
Professor
IIT Mumbai

Hiral Shah
Siemens

Executive Committee

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Dr. Shraman Goswami
Honeywell

Vice Chair

Dr. Kali Charan Nayak
Infosys

Past Chair

Mr. Hitesh Kumar Mistry
EEDP & Learning Leader,
GE Aerospace, Bengaluru

Chair, Professional Seminar

Mr. Abdul Nassar
DESIM Innovations (OPC)
Private Limited

Vice Chair, Professional Seminar

Ms. Harmeet Kaur
Boeing India

Chair, Student Seminar

Dr. Chetan Mistry
IIT Kharagpur

Vice Chair Student Seminar

Dr. Nagabhushana Rao Vadlamani
IIT Madras

Keynote Speaker

Thursday, 7th December 2023, 10:00 - 10:45 am

* Convention Centre Auditorium 1st floor BLDG #50



Mr. Nandan Nilekani
Co-Founder and Chairman
Infosys Limited

Mr. Nandan Nilekani is the Co-Founder and Chairman of the tech giant Infosys Limited.

Mr. Nilekani served as the Chairman of the Unique Identification Authority of India (UIDAI), a cabinet ranking position that he joined upon the invitation of the former Prime Minister of India, Dr. Manmohan Singh. As the chairman of UIDAI, he was responsible for implementing a multi-purpose National Identity Card or Unique Identity Card (UID) project in India.

He is currently the chairman of EkStep Foundation, a not-for-profit literacy and numeracy platform. EkStep looks at solving the learning problem by creating a technology-led platform to help children improve their learning outcomes, early in their life.

Mr. Nilekani is also the Chairman of the Governing Body of the New Delhi-based National Council of Applied Economic Research (NCAER), India's largest and oldest non-profit economic research think tank. He has also invested in many tech start-ups. In 2006, he was awarded the Padma Bhushan and was named Businessman of the Year by Forbes Asia. In 2006 and 2009, Time Magazine placed Nilekani in the Time 100 list of World's Most Influential People. India Today ranked him 12th in India's 50 Most Powerful People of 2017 list.

Keynote Speaker

Friday, 8th December 2023, 09:00 – 09:45 am

* Convention Centre Auditorium 1st floor BLDG #50



Mr. John Intile

Vice President, Engineering
GE Gas Power

John Intile is the Vice President of Engineering for Gas Power, leading the engineering teams responsible for the life-cycle design execution of heavy-duty gas turbines, steam turbines, generators, and all associated plant systems. John oversees approximately 4,000 of the most talented, innovative professionals in the industry, focused on a relentless pursuit of innovation for a better tomorrow with cleaner, more flexible power.

John is a 23-year veteran of GE who has served in multiple leadership roles within combustion, systems engineering, conceptual design, and Global Research Center. In his previous role as a Global Gas Turbine Engineering Leader, he has been responsible for designing and supporting gas turbines, including both the 7HA and 9HA. He has focused on executing product development for our new units and services businesses, supporting our manufacturing and product management teams, and resolving technical challenges for our fleet of gas turbines.

Prior to joining GE, John worked at CD-adapco where he led design teams with Computational Fluid Dynamics specialty performing services and consultant work with to Power Generation and Automotive industry.

John is a graduate of the State University of New York - Stony Brook, with bachelor's and master's degree in mechanical engineering.

Invited Speaker

Advanced Computational Methods

Thursday, 7th December 2023, 01:45-2:45 pm
Rosabeth Moss Kanter Room, 2nd floor, Right Wing BLDG #11

Prof. Joseph Mathew (IISc)

Professor and Chair, Department of Aerospace
Engineering, Indian Institute of Science Bangalore

Contribution of Propulsion to Sustainable Aviation

Thursday, 7th December 2023, 02:45-3:45 pm
Rosabeth Moss Kanter Room, 2nd floor, Right Wing BLDG #11

Andrew Gwynne

Engineering Executive,
Hot End CoE, Rolls-Royce PLC

Engine Structural Integrity: Requirements & Challenges

Friday, 8th December 2023, 11:30 am -12:30 pm
* Isabel Myers Room, 1st floor, Left Wing BLDG #11

Venkat Ganji

Director Engineering,
Honeywell Technology Solutions, Bangalore

Engine Nacelle Structures for Commercial Airplanes

Friday, 8th December 2023, 02:00-3:00 pm
Rosabeth Moss Kanter Room, 2nd floor, Right Wing BLDG #11

Jaspreet Singh

Engineering Manager,
Propulsion Structures- Design Team, Boeing India,
Bangalore

Tutorial

Compressor Design

Thursday, 7th December 2023, 04:30 pm – 06:00 pm
Rosabeth Moss Kanter Room, 2nd floor, Right Wing BLDG #11

Chetan Mistry

Professor, Department of Aerospace Engineering,
IIT Kharagpur

Combustor Design

Friday, 8th December 2023, 11:30 am – 01:00 pm
Rosabeth Moss Kanter Room, 2nd floor, Right Wing BLDG #11

Dalton Maurya

Scientist F, Combustion, Gas Turbine Research
Establishment, DRDO, Bengaluru

Turbine Design

Friday, 8th December 2023, 02:30 pm – 04:00 pm
Katherine Briggs Room, 1st floor, Left Wing BLDG #11

Debasish Biswas

Chief Research Scientist, Toshiba Research and Development Center,
Mechanical Systems Laboratory, Kawasaki, Japan

Multi-disciplinary Multi-Point Optimization of a Turbocharger Compressor Wheel

Friday, 8th December 2023, 03:00 pm – 04:00 pm
Rosabeth Moss Kanter Room, 2nd floor, Right Wing BLDG #11

Mr. Vinayak Rajan

Principal Engineer,
Cadence Design Systems

Panel Session

Leadership Panel Discussion : Power & Propulsion – A Sustainable Future

Thursday, 7th December 2023, 11:15 am – 12:45 pm

* Convention Centre Auditorium 1st floor BLDG #50

Panelists



John Intile
Vice President,
Engineering @GE
Vernova Gas Power



Andrew Gwynne
Engineering Executive
for Hot End Centre of
Excellence, Rolls-Royce,
UK



Kallappa Pattada
Director, Boeing
Research and
Technology, Boeing,
India



Sasikumar Muthusamy
Engineering Director,
Adv. Structures, Collins
Aerospace, India

Panelists



Maximilian Meimerstorf
Head Product
Engineering, Siemens
Energy, Germany



Ramakrishnan Parasuraman
Senior Director, Engines &
Power System, Honeywell
Technology Solutions



Rakesh Gollapalli
Vice President -
Automotive, Aerospace,
& Defense, Infosys



Nagaraj Joshi
Vice President,
Aerospace & Defense,
Infosys Ltd

Moderator

Panel Session

Contribution of Women Engineers in "Power & Propulsion" Industry

Friday, 8th December 2023, 10:05 am – 11:20 am

* Convention Centre Auditorium 1st floor BLDG #50

Panelists



Padmini Ramesh
GE Aerospace
Engineering
Operations Leader,
Bengaluru



Shobhavathy MT
Principal Scientist,
Propulsion Division,
CSIR-NAL Bengaluru



Padmaja Tiwari
Transformation Head,
Industry and Sustainable
Energy Systems,
Siemens Energy India



Seema Chopra
Technical Fellow-AI-ML,
Chief Data Scientist,
Boeing India

Moderator



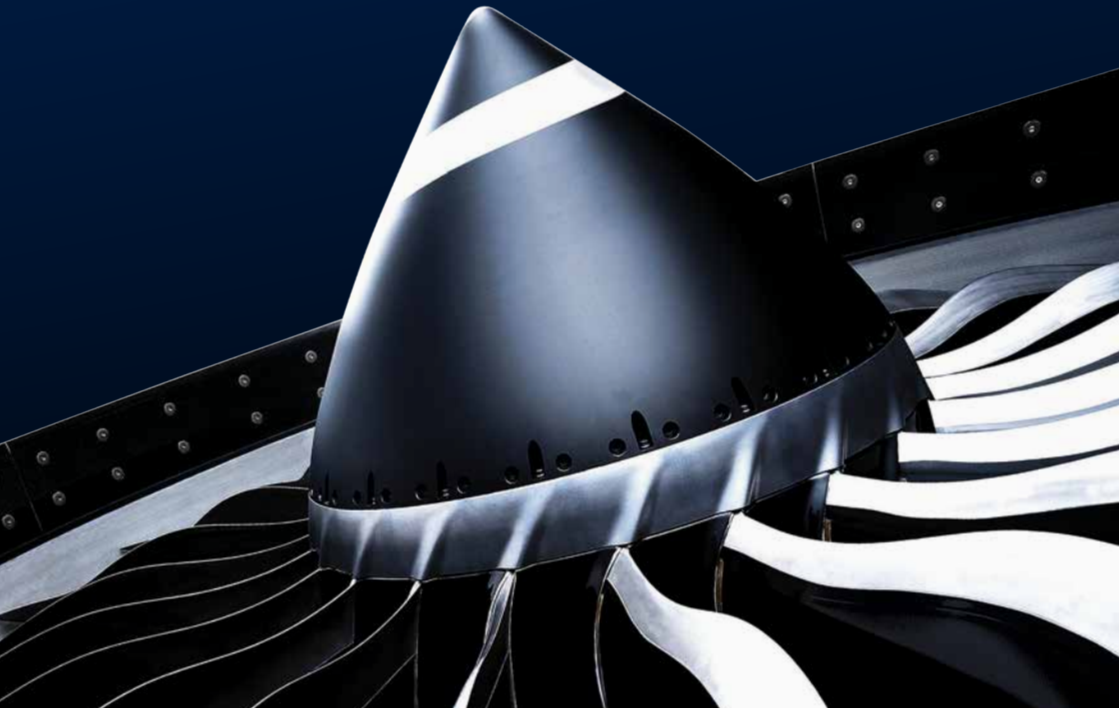
Harmeet Kaur
Senior Manager,
Production Engineering,
Boeing, India



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THURSDAY, 7 DECEMBER, 2023

Track 01-01 Compressors, Fans and Pumps

1:45 PM to 3:45 PM

Katherine Briggs Room, 1st floor, Left Wing BLDG #11

Presentations:

The Variational Principle of a Rotor Passage Shock in the Circumferential Average Through Flow Inverse Problem of the Axial Compressors and Applications

Technical Paper Publication #117883

- **Tianyi Luo** - School of Energy and Power Engineering, Beihang University
- **Peng Shan** - School of Energy and Power Engineering, Beihang University
- **Xiaohe Yang** - AECC Commercial Aircraft Engine Co., Ltd.

Improving the Stage Efficiency of Axial Compressors by Vane Rotation

Technical Paper Publication #118396

- **Akhila Ajith Pisharam** - Kumaraguru College of Technology
- **Vijayanandh Raja** - Kumaraguru College of Technology

• **Arul Prakash R** - Kumaraguru College of Technology

• **Senthil Kumar Madasamy** - Kumaraguru College of Technology

Study of Tandem Rotor Dual Wake Interaction with Downstream Stator Under Unsteady Numerical Approach

Technical Paper Publication #118399

- **Ajey Singh** - IIT Kharagpur
- **Chetankumar Mistry** - Indian Institute of Technology Kharagpur

Aerodynamic Design Aspects for Small-Size Transonic Contra-Rotating Fan Stage

Technical Paper Publication #118442

- **Manideep Pasupula** - IIT Kharagpur
- **Chetankumar Mistry** - Indian Institute of Technology Kharagpur

Track 02-01 Turbines

1:45 PM to 3:45 PM

Charles Handy Room, 2nd floor, Left Wing BLDG #11

Presentations:

Gas Turbine Instrumented Exhaust System Structural Assessment

Technical Paper Publication #118361

- **Manoharan Sambandam** - Baker Hughes
- **Marco Simoncini** - Baker Hughes Company
- **Zielaskowski Michal** - Baker Hughes
- **Michal Michonski** - BakerHughes

Effects of Vane Trailing Edge Deterioration on Flow Phenomena: A CFD Simulation of Broken Scenarios

Technical Paper Publication #117532

• **Benyapa Thammachote** - King Mongkut's Institute of Technology Ladkrabang

• **Jitlada Premyothin** - King Mongkut's Institute of Technology Ladkrabang

• **Ditthaphat Tanpradit** - Rajamangala University of Technology Krungthep

• **Atikorn Wongsatanawarid** - King Mongkut's University of Technology Thonburi

• **Daniele Dipasquale** - King Mongkut's Institute of Technology Ladkrabang

• **Prasert Prapamonthon** - King Mongkut's Institute of Technology Ladkrabang

Effect of Variable Tip Clearance at the Inlet and Exit of a Radial In-Flow Turbine

Technical Paper Publication #118424

- **D Harish** - Gas Turbine Research Establishment
- **R D Bharathan** - Gas Turbine Research Establishment
- **C Kishore Kumar** - Gas Turbine Research Establishment
- **Sharad Kapil** - Gas Turbine Research Establishment
- **Jatin Kumar Jehoash** - Jain University

• **D Kishore Prasad** - Gas Turbine Research Establishment

• **S V Ramana Murty** - Gas Turbine Research Establishment

Turbo-Rotor Balancing and Optimization Using Groove-Geometry Simulation Approach

Technical Paper Publication #118681

• **Nitin Pagar** - MIT Art, Design & Technology University

Track 04-01 Combustion, Fuels and Emissions

1:45 PM to 3:45 PM

Joseph Luft Room, 1st floor, Left Wing BLDG #11

Presentations:

Accuracy Improvement of Flamelet Generated Manifold (FGM) Model in Modeling Partially Premixed Combustion Systems by Combining Machine Learning

Technical Paper Publication #117326

- **Sourabh Shrivastava** - Ansys Inc.
- **Shitanshu Gohel** - Ansys Inc
- **Mohan Srinivasa** - Ansys Inc
- **Hemesh Patil** - Ansys Inc.
- **Pravin Nakod** - Ansys Inc.

Stability and Combustion Characteristics of Stratified Oxy-Methane Flames in a Dual Swirl Burner: Effect of Swirl, {}

Technical Paper Publication #117620

- **Medhat Nemitallah** - King Fahd University Petroleum and Minerals
- **ANAS Alhazmi** - King Fahd University of Petroleum and Minerals

Reactor Network Analysis of a Novel Rich-Quench-Lean Combustion Concept for Hydrocarbon Fuels

Technical Paper Publication #118362

- **Fernando Biagioli** - Infosys
- **Holger Luebcke** - Infosys
- **Khawar Syed** - Infosys

Spray Combustion Study of Biofuel-Blended Aviation-Grade Fuel in an Annular Air-Swirl Burner

Technical Paper Publication #118425

Manikandan Balasubramaniyan - Indian Institute of Technology Madras

- **Nandhakumar Pandurangan** - Indian Institute of Technology Madras
- **Srikrishna Sahu** - Indian Institute of Technology Madras

Track 05-01 Structures and Dynamics

1:45 PM to 3:45 PM

Harold Ingham Room, 1st floor, Left Wing BLDG #11

Presentations:

Creep Behaviour of the Gas Turbine Parts With the Dissimilar Materials

Technical Paper Publication #118307

- **Manoharan Sambandam** - Baker Hughes Company
- **Simone Colantoni** - Baker Hughes Company

Turning Vane FE Model Validation Using Ping Test

Technical Paper Publication #118346

- **Aparna Satheesh** - Baker Hughes
- **Babu Santhana Gopalakrishnan** - Baker Hughes
- **Anil Chippa** - Baker Hughes

Performance Enhancement Kit for Frame 51 Machine With DLN Combustor

Technical Paper Publication #118365

- **Abhimanyu Soman** - Baker Hughes
- **Lorenzo Cocchi** - Baker Hughes
- **Mallikarjuna P** - Baker Hughes
- **Nikunj Avaiya** - Baker Hughes
- **Ravindra Devi** - Baker Hughes
- **Babu Santhana Gopalakrishnan** - Baker Hughes

Structural Validation of Portable Compressor Trailer Under Dynamic Conditions

Technical Paper Publication #118377

- **Mehul Bhirud** - Ingersoll Rand India Ltd
- **Bharatkumar Valand** - Ingersoll Rand India Ltd
- **Ankit Rathod** - Ingersoll Rand India Ltd

Track 06-01 Renewable Energy (Solar, Wind)

1:45 PM to 3:45 PM

Isabel Myers Room, 1st floor, Left Wing BLDG #11

Presentations:

Influence of Concentrated Augmenter on the Performance of a Two-Bladed Savonius Wind Rotor Composed of Arc-Elliptical Profile

Technical Paper Publication #118292

- **Nur Alom** - National Institute of Technology Meghalaya, India
- **Parag K. Talukdar** - Jorhat Engineering College
- **Bikash Kumar Sarkar** - National Institute of Technology Meghalaya
- **Ujjwal K. Saha** - Indian Institute of Technology Guwahati

Diameter-to-Chord Ratio Effect on the Aerodynamic Performance of Small-Scale Darrieus-Type Straight-Bladed Vertical Axis Wind Turbine

Technical Paper Publication #118458

• **Kabita Naik** - Indian Institute of Technology Guwahati

• **Niranjan Sahoo** - Indian Institute of Technology Guwahati

Numerical Simulation of an S-Shaped Hydrofoil to Study the Influence of Turbulence Over Cavitation in the Flow

Technical Paper Publication #118494

• **Micha Premkumar Thomai** - Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam

• **Divya Zindani** - Sri Sivasubramaniya Nadar College of Engineering

• **Seralathan Sivamani** - Hindustan Institute Of Technology And Science

Wind Tunnel Assisted Analysis on the Effect of Span-Wise Separation of Small Wind Turbines: A Near Wake Region Study

Technical Paper Publication #118499

- Ravi Kumar - Indian Institute of Technology-Guwahati

- Ojing Siram - Indian Institute of Technology-Guwahati
- Ujjwal K. Saha - Indian Institute of Technology-Guwahati
- Niranjana Sahoo - Indian Institute of Technology- Guwahati

Track 11-02 Analytics & Digital Solutions (incl. AI/ML) for Gas Turbines/ Rotating Machinery

1:45 PM to 3:45 PM

Brahmaputra Audi, Ground floor, BLDG #12

Presentations:

Development of Machine Learning Model for Maximum Creep Strain Prediction in Gas Turbine Blades, {}

Technical Paper Publication #118331

- Rishabh Shrivastava - Siemens Limited
- Vidit Mehrotra - Siemens Limited
- Amit Singh - Siemens Limited
- Amit Yadav - Siemens Limited
- Debdulal Das - Siemens Limited

- Rishi Relan - Siemens India Ltd
- Gurdev Singh - Siemens Energy

Application of Machine Learning Based Meta Models for Predicting Film Cooling Effectiveness in Gas Turbine Blades

Technical Paper Publication #118380

- Amit Grover - Siemens Limited
- Rishabh Shrivastava - Siemens Limited

Enhancing Turbine Inlet Temperature Prediction in Single Shaft Combined Cycle Power Plants Using Soft Sensor: A Grey-Box Modelling Approach

Technical Paper Publication #118372

- Pugalenth Nandagopal - Siemens Energy
- Manjunath More - Siemens India Ltd

Development of Machine Learning Model to Predict Mechanical Failure of Gas Turbine Disc

Technical Paper Publication #118382

- Alok Kumar Seth - Siemens Limited
- Rishabh Shrivastava - Siemens Limited
- Amit Rai - Siemens Limited

Track 03-01 Heat Transfer

4:00 PM to 6:00 PM

Harold Ingham Room, 1st floor, Left Wing BLDG #11

Presentations:

Conjugate Heat Transfer Approach to Gas Turbine Engine Modeling

Technical Paper Publication #117608

- Jaasim Mulla - Defence Institute of Advanced Technology

- R K Satpathy - Defence Institute of Advanced Technology, Pune
- Fiyanshu Kaka - Defence Institute of Advanced Technology, Pune

Design of Cooling Air Flow and Thermal Analysis for an Afterburner V-Gutter

Technical Paper Publication #118371

- **Azith Aadhithya** - IIAEM, Jain (Deemed-to-be University)
- **Kvl Narayana Rao** - Hindustan Aeronautics Ltd
- **Antonio Davis** - IIAEM, Jain (Deemed-to-be University)
- **Girish K Degaonkar** - Hindustan Aeronautics Ltd

Improving Film Cooling Effectiveness Using Sister Holes With Primary Hole Through Adverse Compound Angle Orientations

Technical Paper Publication #118457

- **Seralathan Sivamani** - Hindustan Institute of

Technology and Science

- **Sri Vamsi Krishna P** - Hindustan Institute of Technology and Science
- **Micha Premkumar T** - Sri Sivasubramaniya Nadar College of Engineering

Vortex Characterization of Rotor-Stator Cavities Dominated With Radial Flows

Technical Paper Publication #118670

- **Dileep Bushan Reddy S N** - Infosys Limited
- **Praveen Kumar Singh** - Infosys Limited
- **Kali Charan Nayak** - Infosys Limited
- **Tim Scanlon** - Rolls-Royce plc

Track 11-01 Analytics & Digital Solutions (incl. AI/ML) for Gas Turbines/ Rotating Machinery

4:00 PM to 6:00 PM

Brahmaputra Audi, Ground floor, BLDG #12

Presentations:

Towards Use of Structural Equation Modelling in Enumerating Correlation of Qualitative and Quantitative Factors With Manufacturing Part Deviation

Technical Paper Publication #118037

- **Karthik Srinivasan** - Infosys
- **Ravi Kumar Gvv** - Infosys

Method to Backout Load From Strain Gauges Using Machine Learning

Technical Paper Publication #118279

- **Srinivas Chinthapally** - HoneywellTechnology solutions lab pvt ltd
- **Sidhardha Nuli** - Honeywell Technology Solutions Lab Pvt ltd
- **Arnab Das** - Honeywell Technology Solutions Lab Pvt ltd
- **Akshay Hedao** - Honeywell Technology Solutions Lab pvt ltd

Data Synthesis Through Deep Generative Models and its Effectiveness in Improving Defect Inspection Models

Technical Paper Publication #118325

- **Ninad Kulkarni** - Infosys Ltd.
- **Rahul Gupta** - Infosys Ltd.
- **Vijayasri Kalyan** - Infosys Ltd.
- **Ujwal Bhate** - Infosys Ltd.

A Deep Learning Approach to Build Surrogate Model for Steady State and Transient Metal Temperature Prediction in Gas Turbine

Technical Paper Publication #118326

- **Raj Kumar Soni** - Siemens Limited
- **Avyakt Ojha** - Siemens Ltd
- **Vishal Verma** - Siemens Ltd
- **Yi Niu** - Siemens Energy

Track 01-02 Compressors, Fans and Pumps

4:00 PM to 6:00 PM

Katherine Briggs Room, 1st floor, Left Wing BLDG #11

Presentations:

Inlet Distortion Studies on a Centrifugal Compressor

Technical Paper Publication #118322

- **Sujeet Kumar Jaiswal** - Indian Institute of Technology Dharwad
- **Sadashiv Bubanale** - Indian Institute of Technology Dharwad
- **M. C. Keerthi** - Indian Institute of Technology Dharwad

High Speed Centrifugal Compressor Performance Evaluation With Leaning Diffuser Vane Configurations

Technical Paper Publication #118405

- **Porika Niveditha** - IIT Madras
- **Shyama Prasad Das** - Indian Institute of Technology Madras

Design of a Facility for Testing Centrifugal Compressors

Technical Paper Publication #118456

- **Kishore Kumar C** - Gas Turbine Research Establishment

- **Jaiprakash Anand** - Indian Institute of Science Bangalore

- **Ganesan S** - Gas Turbine Research Establishment

- **Raghuraman N Govardhan** - Indian Institute of Science, Bangalore

Aerodynamic Design Improvement of Centrifugal Compressor for Turbocharger Application

Technical Paper Publication #118476

- **Kirubakaran Purushothaman** - Gas Turbine Research Establishment

- **David Varghese** - Gas Turbine Research Establishment

- **Kishore Kumar Chandramohan** - Gas Turbine Research Establishment

- **Vidyadheesh Pandurangi** - Gas Turbine Research Establishment

- **Ajay Pratap** - Gas Turbine Research Establishment

- **Kishore Prasad D** - Gas Turbine Research Establishment

Track 02-02 Turbines

4:00 PM to 6:00 PM

Charles Handy Room, 2nd floor, Left Wing BLDG #11

Presentations:

Implementation of Flow Control Methods for Design of Connecting Duct of Annular Sector Cascade Tunnel

Technical Paper Publication #118407

- **Hardikkumar Bhavasar** - Indian Institute of Technology Kharagpur
- **Chetankumar Mistry** - Indian Institute of Technology Kharagpur

- **Priyanka S** - IIT Kharagpur

- **Chetan Mistry** - IIT Kharagpur

- **Arnab Roy** - IIT Kharagpur

Studies on Unsteady Turbulence Flow Characteristics Associated With Stator-Rotor Interaction Originated Thermal Flow Phenomena Using a High Order LES Model

Technical Paper Publication #118641

- **Debasish Biswas** - Toshiba Corporation

- **Tomohiko Jimbo** - Toshiba Corporation

Non-Axisymmetric Stator Hub Endwall Contouring for Tandem Bladed Axial Compressor Stage

Technical Paper Publication #118437

Computational Investigations of Effect of Reynolds Number on Secondary Losses and Flow Behavior in Linear Turbine Cascade

Technical Paper Publication #118451

- **Anand Darji** - Sardar Vallabhbhai National Institute Of Technology, Surat

- **Beena Baloni** - Sardar Vallabhbhai National Institute of Technology, Surat
- **Chetan Mistry** - Indian Institute of Technology, Kharagpur

Track 04-02 Combustion, Fuels and Emissions

4:00 PM to 6:00 PM

Joseph Luft Room, 1st floor, Left Wing BLDG #11

Presentations:

Experimental and Numerical Investigation of Velocity Flow Field in a Novel 3D Printed Triple Swirler Burner

Technical Paper Publication #118421

- **Mahesh R Thombare** - Indian Institute of Technology Hyderabad
- **Sidharth K Pillai** - Indian Institute of Technology Hyderabad
- **Raju Murugan** - Indian Institute of Technology Hyderabad
- **Madhushankar Pillai** - Indian Institute of Technology India
- **Saravanan Balusamy** - Indian Institute of Technology Hyderabad

Experimental Analysis and Reduced Order Modelling of Merging Flames

Technical Paper Publication #118340

- **Subrata Dutta** - National Institute of Technology Durgapur
- **Arnab Chakraborty** - IIT Madras

- **Auronil Mukherjee** - IIT Madras

- **Sirshendu Mondal** - National Institute of Technology Durgapur

Investigation of High Thermal Intensity Porous Media Combustion in a Reverse Flow Combustor

Technical Paper Publication #118360

- **Vinay Karad** - IIT Kanpur
- **Dr. Vaibhav K. Arghode** - IIT Kanpur

Numerical Investigation on the Optimization of Angled Effusion Holes of Liner Assembly of Micro Gas Turbine Engine Combustor

Technical Paper Publication #118466

- **Nivedita Shahi** - Indian Institute of Technology
- **Ayush Divyansh** - Indian Institute of Technology Jammu
- **Vatsal Tyagi** - Indian Institute of Technology Jammu
- **Shanmugadas K.P.** - Indian Institute of Technology

Track 04-05 Combustion, Fuels and Emissions

4:00 PM to 6:00 PM

Isabel Myers Room, 1st floor, Left Wing BLDG #11

Presentations:

Combustion of Hydrogen and Natural Gas at Elevated Air Temperature Using 3D Printed Burner

Technical Paper Publication #118324

- **Raju Murugan** - SBES Technologies Private Limited
- **Suresh Mvr** - SBES Technologies Private Limited
- **Rahul Singh Chauhan** - SBES Technologies Private Limited
- **Reddy Alemela** - SBES Technologies Private Limited

Combined Cycle Power Plant Economic Evaluation With Hydrogen and Ammonia As Alternate Fuel

Technical Paper Publication #117904

- **Muruganandam Pichandi** - Siemens India Ltd

- **Pugalenth Nandagopal** - Siemens India Ltd
- **Matthias Duerr** - Siemens Energy
- **Surendra Singh** - Siemens India Ltd

Design and Numerical Analysis of a Lean Burn Combustor Liner Inlet for Micro-Gas Turbine Engine Applications

Technical Paper Publication #118472

- **Vatsal Tyagi** - Indian Institute of Technology Jammu
- **Ayush Divyansh** - Indian Institute of Technology Jammu
- **Preetam Jamod** - Indian Institute of Technology Jammu
- **Shanmugas K. P.** - IIT JAMMU



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FRIDAY, 8 DECEMBER, 2023

Track 02-03 Turbines

11:30 AM to 1:00 PM

Charles Handy Room, 2nd floor, Left Wing BLDG #11

Presentations:

Effect of Pivot-Shape Modification on Part Clearance Flow Field in Variable Area Turbine Nozzle Vane

Technical Paper Publication #118444

- Goutam Mandal - IIT Kharagpur
- Hardikkumar Bhavsar - Name: Indian Institute of Technology Kharagpur
- Chetankumar Mistry - Indian Institute of Technology Kharagpur

Secondary Losses Mitigation using End-Wall Contouring for LPT Nozzle Vane Cascade

Technical Paper Publication #118408

- Shivkumar Koiri Shivkumar Koiri - Aerostrovilos Energy Pvt. Ltd.
- Chetan Mistry - IIT Kharagpur

Characteristics of Laminar Separation Bubble With Varying Leading-Edge Shapes and Deflections of the Trailing-Edge Flap

Technical Paper Publication #118416

- Sumit Sarvankar - Indian Institute of Technology Madras
- Drik Sarkar - Indian Institute of Technology Kharagpur
- Chetankumar Sureshbhai Mistry - Indian Institute of Technology Kharagpur
- Nagabhushana Rao Vadlamani - Indian Institute of Technology Madras

Track 04-03 Combustion, Fuels & Emissions

11:30 AM to 1:00 PM

Joseph Luft Room, 1st floor, Left Wing BLDG #11

Presentations:

Internal and External Flow Characteristics on Variation of Swirl Strength for a Fuel Flexible Injector for Micro Gas Turbine Engines

Technical Paper Publication #118470

- Abhishek Verma - IIT Jammu
- Preetam Jamod - IIT Jammu
- Shivam Uniyal - IIT Jammu
- Ayush Divyansh - IIT Jammu
- Shanmugadas k.p - IIT Jammu

The Effect of H₂ Addition on CNG/H₂-Air Flame Shape Topology in a Lean Premixed Swirl Stabilized Gas Turbine Combustor

Technical Paper Publication #118487

- Noorul Huda - Indian Institute of Technology Kanpur

• Surendra Soni - Indian Institute of Technology Kanpur

• Santanu DE - Indian Institute of Technology Kanpur

Effects of Recess Length of Bluff Body on Lean-Premixed Swirl-Stabilized CNG-Air Flame Structure

Technical Paper Publication #118496

- Noorul Huda - Indian Institute of Technology Kanpur
- Surendra Soni - Indian Institute of Technology Kanpur
- Santanu De - Indian Institute of Technology Kanpur

Track 05-02 Structures and Dynamics

Track 06-02 Renewable Energy (Solar, Wind)

11:30 AM to 1:00 PM

Harold Ingham Room, 1st floor, Left Wing BLDG #11

Presentations:

Influence of Mechanical Properties on Compressor Rotor Blade Fatigue Life: A Reliability Approach

Technical Paper Publication #118412

- Ramesh K - Hindustan Aeronautics Ltd
- Esakki Muthu S - Hindustan Aeronautics Ltd
- Girish K Degaonkar - Hindustan Aeronautics Ltd
- Neeralagi C A - Hindustan Aeronautics Ltd
- Hardik Roy - Hindustan Aeronautics Ltd

Tuning of Natural Frequencies of Aeroengine Compressor Blades Using Spatial Distribution of Ceramic Reinforced Particles Composites Using Multi-Scale Modelling

Technical Paper Publication #118323

- Sreedhar Kari - TCS
- Mahesha CP - TCS

Experimental Investigation of a Concentrated Photovoltaic System Integrated with Water Sprinkler Generating Electricity and Hot Water

Technical Paper Publication #118667

- Meet Vyas - Ahmedabad University
- Devam Bhatt - Ahmedabad University
- Dev Shah - Ahmedabad University
- Lay Patel - Ahmedabad University
- Nitin D Banker - Ahmedabad University

Track 01-03 Compressors, Fans and Pumps

2:00 PM to 4:00 PM

Katherine Briggs Room, 1st floor, Left Wing BLDG #11

Presentations:

Testing and Modeling of Generalized K-Omega Turbulence Model and Validation on Highly Efficient Centrifugal Compressor (HECC)

Technical Paper Publication #118341

- Shivani Ranjan - Honeywell
- Shailesh Kumar - Honeywell
- Mohd Qizar - Honeywell
- Mahmoud Mansour - Honeywell

Performance Prediction of a Swash Plate Piston Pump Using 3D CFD Simulation

Technical Paper Publication #118395

Raghu Vamsee Godavarthi - Simerics Inc

- Dipak Maiti - Simerics Inc.
- Hui Ding - Simerics Inc.

Conceptualization of a Portable Vacuum Pumping System for Dead Volume Dispensing of Crude Oil From Crude Oil Storage Tanks

Technical Paper Publication #118453

- Manosh Jyoti Das - Indian Institute of Technology, Guwahati
- Niranjana Sahoo - Indian Institute of Technology, Guwahati.

A New Perspective on Measuring Compressor Characteristics

Technical Paper Publication #118691

- Zhenhao Jing - Georgia Institute of Technology
- Yedia Neumeier - Georgia Institute of Technology
- J. V. R. Prasad - Georgia Institute of Technology
- Darrell K. James - Honeywell International, Inc.

Track 03-02 Heat Transfer

2:00 PM to 4:00 PM

Isabel Myers Room, 1st floor, Left Wing BLDG #11

Presentations:

Evaluation of Scaling Formation on Entropy Generation of Flowing Fluid Through Circular Pipe

Technical Paper Publication #118295

- **Onkar Singh** - Harcourt Butler Technological Institute
- **Mayank Maheshwari** - Allenhouse Institute of Technology

Efficiency Assessment of Compressed Air Energy Storage System Coupled With Thermal Energy Storage Unit: Review

Technical Paper Publication #118463

- **Mebratu Adamu Assegie** - Indian Institute of Technology Guwahati
- **Ojing Siram** - Indian Institute of Technology Guwahati
- **Pankaj Kalita** - Indian Institute of Technology Guwahati

- **Niranjan Sahoo** - Indian Institute of Technology Guwahati

Feasibility Study of Heat Transfer Enhancement in Solar Photovoltaicthermal Systems Using FDM Generated Novel Curved Thermal Absorbers

Technical Paper Publication #118636

- **Akash Kamble** - Indian Institute of Technology Guwahati
- **Ambrish Singh** - Indian Institute of Technology, Guwahati
- **Dipendra Singh** - Indian Institute of Technology Guwahati
- **Dudul Das** - University of Glasgow
- **Sajan Kapil** - Indian Institute of Technology Guwahati
- **Pankaj Kalita** - Indian Institute of Technology Guwahati

Track 04-04 Combustion, Fuels and Emissions

2:00 PM to 4:00 PM

Joseph Luft Room, 1st floor, Left Wing BLDG #11

Presentations:

Effects of the Swirl Field on the Structure, Planner Drop Sizing and Large-Scale Instabilities of Flow-Blurring Spray

Technical Paper Publication #118555

- **Abhishek Kumar Gupta** - Indian Institute of Technology Kanpur
- **Keshav Yadav** - Indian Institute of Technology Kanpur
- **Surendra Kumar Soni** - Indian Institute of Technology Kanpur
- **Yogeshwar Nath Mishra** - University of Gothenburg
- **Santanu De** - Indian Institute of Technology Kanpur

Characteristics of a Dual Fuel Diesel Engine

Technical Paper Publication #118653

- **Samar Das** - Indian Institute of Technology Guwahati
- **Pankaj Kalita** - Indian Institute of Technology Guwahati

Numerical Simulation and Aerodynamics of a Fuel Flexible Injector for Micro-Gas Turbine Engines

Technical Paper Publication #118428

- **Shivam Uniyal** - IIT Jammu
- **Preetam Jamod** - IIT Jammu
- **Ayush Divyansh** - IIT Jammu
- **Saket Singh** - IIT Madras
- **Shanmugasadas K.P.** - IIT Jammu

Exploring the Effects of Synthetic Gaseous Fuels on the Performance, Combustion, and Emission

An Economic Evaluation of Post CO2 Capture Techniques for Natural Gas Combined Cycle Power Plants

Technical Paper Publication #117903

- surendra singh - Siemens India Ltd.
- Pugalenth Nandagopal - Siemens India Ltd.
- Muruganandam Pichandi - Siemens India Ltd.
- Matthias Duerr - Siemens Energy

Track 09-01 GT Operation and Maintenance (Services, predictive maintenance, remote diagnostics)

Track 10-01 Additive & advanced Manufacturing (including material, Coatings, Composites, CMCs)

2:00 PM to 4:00 PM

Charles Handy Room, 2nd floor, Left Wing BLDG #11

Presentations:

A Solution for Improving Gas Turbine Performance Degradation and Emissions: The "GT Auto Tuner" Product

Technical Paper Publication #117887

- Mayur Gagnani - SIEMENS India Ltd.
- Pugalenth Nandagopal - SIEMENS India Ltd.
- Kai Sueselbeck - SIEMENS Energy

Inlet Air Filtration Effects on Degradation and Life Cycle Costs in Gas Turbine Combined Cycle Power Plants: A Comparative Study

Technical Paper Publication #117900

- Pertik kamboj - Siemens India Limited
- Pugalenth Nandagopal - Siemens India limited
- Matthias Duerr - Siemens Energy Global GMBH

- Ole Fahrendorf - Siemens Energy GMBH

Spray Interaction in Flat-Fan Injectors and its Effect on Cleaning Effectiveness of Gas Turbine Online Water Washing System

Technical Paper Publication #118386

- Kiran Kumar - IITM
- Srikrishna Sahu - IITM
- Ravindra G Devi - Baker Hughes

Gas Turbine Nozzle Repair by Additive Manufacturing

Technical Paper Publication #118314

- Mihir Patel - BakerHughes
- Pradeep Kraleti - BakerHughes
- Rahul Wagh - BakerHughes

Track 08-01 Emerging Technologies (Hybrid Electric Propulsion, UAV,...)

Track 11-03 Analytics & Digital Solutions (incl. AI/ML) for Gas Turbines/ Rotating Machinery

2:00 PM to 4:00 PM

Harold Ingham Room, 1st floor, Left Wing BLDG #11

Presentations:

A Strategic Design Approach for Future Fuselage BLI Engine Based Hybrid Propulsion Engine

Technical Paper Publication #118409

Chetankumar Mistry - Indian Institute of Technology Kharagpur

- Surendra Kiran Kolhe - IIT Kharagpur
- Harsh Raj - IIT Kharagpur
- Aditya Bharade - IIT Kharagpur
- Jay Anantwar - IIT Kharagpur
- Goutam Mandal - IIT Kharagpur
- Abhishek Agrawal - IIT Kharagpur

Design and Multi-Perspective Investigations on Aeroacoustic Noise Reduction Technologies for Anti-Drone Propeller

Technical Paper Publication #117639

- Vijayanandh Raja - Kumaraguru College of Technology
- Shyam Sundar Jayakumar - Kumaraguru College of Technology
- Haribalan Saravana Mohan - Kumaraguru College of Technology
- Parvathy Rajendran - Universiti Sains Malaysia
- Beena Stanislaus Arputharaj - Saveetha School of Engineering, SIMATS
- Senthil Kumar Madasamy - Kumaraguru College of Technology

An Innovative Approach for the Validation of Computational Structural Outcomes of Octocopter's Connection Arms Through Advanced Finite Element Methods

Technical Paper Publication #115175

- Sabareesh Muniswaran - Kumaraguru College of Technology
- Vijayanandh Raja - Kumaraguru College of Technology
- Rajkumar R - Kumaraguru College of Technology
- Parvathy Rajendran - Universiti Sains Malaysia
- Ramesh Mageswaran - SNS College of Technology
- Senthil Kumar Madasamy - Kumaraguru College of Technology
- Beena Stanislaus Arputharaj - Saveetha School of Engineering, SIMATS

Application of Advanced Sampling Techniques to Handle Class Imbalance in GT Blade Failure Prediction

Technical Paper Publication #118387

- Rishabh Shrivastava - Siemens Limited
- Rohan Lalchandani - Siemens Limited
- Advait Pohekar - Siemens Limited
- Krishnandu Sharma - Siemens Limited
- Pavan Kumar Vodnala - Siemens Limited



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