

Presented by The ASME International Gas Turbine Institute



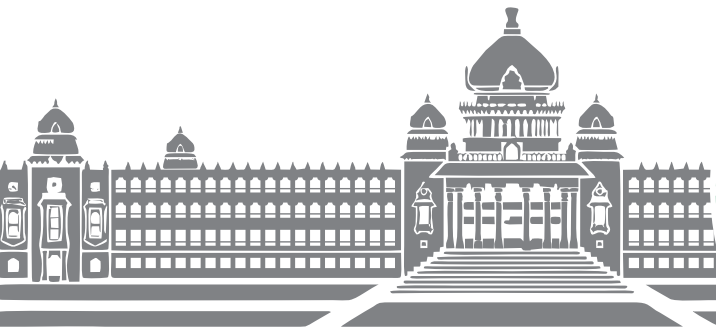
GAS TURBINE INDIA

Conference

December 7- 8, 2017
Sheraton Grand, Bangalore, India

FINAL PROGRAM

Be sure to join the ASME Gas Turbine India Group online go.asme.org/IGTI and ask questions, exchange knowledge with some of the leaders in the industry and make plans to attend Gas Turbine India 2019.





Welcome to
BANGALORE

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ASME 2017 Gas Turbine India Conference

Address:

Sheraton Grand Bangalore at Brigade Gateway
26/1 Dr. Rajkumar Road, Malleswaram - Rajajinagar,
Bengaluru, Karnataka, 560055, India



Message from the Conference Chair



The ASME International Gas Turbine Institute presents the Fifth ASME Gas Turbine India Conference in Bengaluru, India on 7th & 8th December, 2017. The two-day event attracts the industry's leading professionals and key decision makers, whose innovation and expertise will shape the future of turbomachinery. Authors and presenters are invited to participate in this event to exchange ideas on research, development and best practices on Gas Turbines and allied areas. Bengaluru is the Aerospace Capital of India with existence of important national and international gas turbine research, engineering & development organizations. This conference would be an excellent opportunity to connect with eminent R&T and Engineering professionals working in this field across the globe and gain valuable insights on the latest technology trends.

Across the globe, the Governments, Research Institutions and the Industries are investing on critical resources to mature gas turbine technologies towards better fuel consumption, cleaner environment and lower life cycle cost, with an aim to bring competitive technology advantage to the world. Modern digital technologies such as Artificial Intelligence and Machine Learning are gearing-up to transform the gas turbine industry towards smarter gas turbine engines that can be designed, manufactured and serviced in a more digital way. This trend is only going to grow further from gas turbine engine systems to aircraft or plant level optimization, leading to the development & integration of digital system of systems. There is a growing evidence of application of this trend in Aviation, Power, Wind, Solar, Oil & Gas sectors, enabling customers towards greater profitability along with environmental sustainability. Exploring modern gas turbine sciences and technologies in the digital framework would provide even more exciting new area of opportunities for next generation scientists, technologists and engineers.

The conference theme "Energy & Propulsion Technologies for a Digital Future" has been chosen with an objective to provide the conference participants a glimpse of emerging digital trends in the modern gas turbine research and technology domain.

We sincerely thank the organizations who have supported the conference through generous sponsorships, and the speakers who have kindly agreed to devote their time for the conference. We appreciate the dedicated efforts spent by the experts from academia and industry as reviewers, vanguard chairs and session organizers. I would like to extend the gratitude for the conference core team members - Review Chair Dr. Ravikanth Avancha from GE, Technical Program Chair Mr. V Ramana Murthy from GTRE and Prof. Joseph Mathew from IISc. Finally, much appreciation goes to ASME GT India Executive Committee Chair Mr. Joseph Machnaim and all IGTI staff for their dedicated support and guidance in making this conference possible.

On behalf of the 5th ASME Gas Turbine India Conference core committee, I am inviting you all to participate in this conference to gain valuable insights of new technology trends in this domain and collaborate your ideas with world renowned researchers, scientists and engineers who spearhead this technology transformation.

Best regards,

Sasikumar Muthusamy

Head of System and Sub-systems Design Rolls-Royce India

Aimil Ltd

Convergent Science

Kistler Instruments India Pvt. Ltd.

SoftinWay

ASME 2017 Gas Turbine India Conference



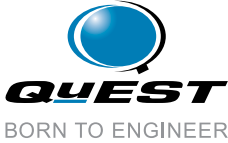
Sponsors

Platinum Sponsors



Rolls-Royce

Bronze Sponsor



Lanyard Sponsor



Exhibitors



“Every 2.2 minutes an aircraft with GE technology lands in the top four airports in India.”



Schedule at a Glance

Thursday, December 7, 2017

Registration

Technical Sessions

Exhibit Hall Open

Inauguration & Keynote Address: Dr. CP Ramanarayanan, "Development of Aero Gas Turbine Engines and Technologies in India – Present and Future"

Coffee Break & Networking

Invited Speaker: Dr. Om Sharma, "Development of a Robust Distortion Tolerant Low Pressure Ratio Fan for Boundary Layer Ingesting Engines"

Technical Sessions

Lunch & Networking

Student Posters

Technical Sessions

Invited Speakers: Srikanth Bontha, PhD; Dr. Dheepa Srinivasan, "Additive Materials: Part A"

Coffee Break & Networking

Panel Session: "Digital Panel Discussion"

Technical Sessions

Invited Speaker: Dr. M. S. Anand "Combustion Simulation Challenges and the Digital Future"

Conference Gala Dinner

7:00 a.m. - 5:00 p.m.

8:00 a.m. - 10:00 a.m.

10:00 a.m. - 2:00 p.m.

10:30 a.m. - 11:45 a.m.

11:30 a.m. - 11:45 a.m.

11:45 a.m. - 1:15 p.m.

11:45 a.m. - 1:15 p.m.

1:15 p.m. - 2:15 p.m.

1:15 p.m. - 2:15 p.m.

2:15 p.m. - 3:45 p.m.

2:15 p.m. - 3:45 p.m.

3:45 p.m. - 4:00 p.m.

4:00 p.m. - 6:00 p.m.

4:00 p.m. - 6:00 p.m.

4:00 p.m. - 6:00 p.m.

6:00 p.m. - 8:00 p.m.

Friday, December 8, 2017

Registration

Technical Sessions

Exhibit Hall Open

Coffee Break & Networking

Panel Session: "GT Panel Discussion on Future Gas Turbine Technologies"

Lunch & Networking

Invited Speaker: Dr. Toshinori Watanabe "Recent Studies on Fundamental Mechanisms of Turbomachinery Flutter"

Technical Sessions

Coffee Break & Networking

Technical Sessions

7:00 a.m. - 5:00 p.m.

8:00 a.m. - 11:00 a.m.

10:00 a.m. - 2:00 p.m.

11:00 a.m. - 11:30 a.m.

11:30 a.m. - 1:00 p.m.

1:00 p.m. - 2:00 p.m.

2:00 p.m. - 3:30 p.m.

2:00 p.m. - 3:30 p.m.

3:30 p.m. - 4:00 p.m.

4:00 p.m. - 5:30 p.m.



Dinner Event

Thursday, December 7 * 6:00 - 8:00 pm *

All registered conference attendees are welcome to attend the Dinner.

The ASME GT India conference is an uniquely positioned conference in India to provide a platform for technical sharing and professional networking. The evening is led by the ASME GT India - Executive Committee Members, celebrating the achievements of the group in the past year and sharing the future plans for the Group. An Award Ceremony follows to recognize the contribution of key volunteers to the GT India group at large. The casual atmosphere is the ideal setting to catch-up with your peers and to make new connections. We look forward to seeing you at the Dinner to interact and introduce you to the larger Gas turbine community.



Conference Leadership

Conference Leadership Team		
Conference Chair	Technical Program Chair	Review Chair
Sasikumar Muthusamy Rolls-Royce India, Bangalore	Mr. V Ramana Murthy, SCG Gas Turbine Research Establishment, Bangalore	Ravikanth Avancha GE Aviation

Vanguard Chairs

- Pradeep A M**, Indian Institute of Technology, Bombay
- Ujjwal K. Saha**, Indian Institute of Technology Guwahati
- Bhamidi V S S Prasad**, IIT MADRAS
- Satyanarayanan Chakravarthy**, IIT Madras
- Ramesh T.C.**, QuEST Global
- Jitendra Bijlani**, LM Wind Power
- Sankaran S**, Indian Space Research Organization (ISRO)
- Dhinakaran R**, Turbo Energy Tech Centre
- Hemant Gajjar**, Torrent Power Ltd. [SUGEN Mega Power Project]
- Yogesh Potdar**, GE-Global Research Center
- Vinay Jammu**, GE India Technology Centre Private Limited
- Hitesh Kumar Mistry**, GE India Technology Centre Pvt. Ltd.
- Anandaroop Bhattacharya**, IIT Kharagpur





Fast forward thinking

In an industry that's accelerating at an ever-increasing pace, here at Rolls-Royce we're always one step ahead in the development of power systems on land, in the air and at sea. Building on a partnership of over 80 years, we continue to contribute to India's substantial growth through best-in-class supply chains, excellent engineering capability and effective manufacturing infrastructure.

Our belief in India's engineering and innovation capabilities, coupled with our commitment towards the government's 'Make in India' initiative to develop India's aerospace and infrastructure sectors, helps us shape the future together. And finally, to co-design, co-develop and co-manufacture with our highly skilled strategic partners, is as much an honour, as it is a great opportunity.

So here's to a fantastic future at an ever-increasing pace.

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Keynote Session

Development of Aero Gas Turbine Engines and Technologies in India – Present and Future

Thursday, December 7 * 10:30 - 11:45 am * Grand Ballroom



Dr. C. P. Ramanarayanan

Distinguished Scientist and Director General, Aeronautical Systems

Dr C P Ramanarayanan was the Chief Controller, R&D (HR) of DRDO before taking over as Director General (Aeronautical Systems) from June 2016.

Prior to this he was the Director of Gas Turbine Research Establishment (GTRE), one of the establishments of DRDO. Before joining GTRE, Dr Ramanarayanan was the Director of Vehicle Research & Development Establishment (VRDE), Ahmed Nagar and Technology Director for Thermal Torpedo Naval Science & Technological Laboratory (NSTL), Visakhapatnam. He has also served as a Project Director for Thermal Propulsion development for heavy & light weight torpedoes at NSTL.

Dr Ramanarayanan holds PhD in Energy Systems from Jawaharlal Nehru Technological University, Hyderabad. A fellow of Institute of Engineers, he was conferred "Scientist of the Year Award" in 2005.



Invited Speakers

Thursday, December 7 * 11:45 am - 1:15 pm * Grand Ballroom



Dr. Om Sharma

Senior Research Fellow, United Technologies Research Center (UTRC)

Development of a Robust Distortion Tolerant Low Pressure Ratio Fan for Boundary Layer Ingesting Engines

Dr. Om Sharma is currently a Senior Research Fellow at the United Technologies Research Center (UTRC) since 2007. He, along with four other Senior Research Fellows, provides guidance and resources to enable the development of new concepts and technical capabilities through the use of Innovation Pipeline and Capability development processes.

He also provides leadership in solving tough technical problems encountered during product development process and provides critical assessment to senior management on technical issues and assisting in the assessment and support for technical excellence. During 1998-2000 Om directed a modeling, analysis, simulation and computation (MASC) initiative to support product development across the UTC divisions.

Om has worked for United Technologies since 1977, when he joined the Pratt & Whitney Turbo-Machinery Technology Group. Included among his technological accomplishments is the development of advanced design concepts and design processes in the turbine aerodynamics and heat transfer disciplines; developing 3-D design concepts for turbines and compressors by utilizing multistage computational fluid dynamics codes; and leading team development on active stall control technology demonstrated in a high bypass ratio large commercial jet engine. At Pratt & Whitney, he served as Chief Technologist, supporting the development of the F119, F135, PW4000, V2500 and GP7000 engines, establishing a Center of Excellence in Aerodynamics and directing the Pratt & Whitney Technical Fellows Program.

Om received a Bachelor of Technology degree and a Master of Science degree from the Indian Institute of Technology, New Delhi, India, and a doctorate from the University of Birmingham, United Kingdom. He is a Fellow with American Society of Mechanical Engineers (ASME) and a recipient of Distinguished Alumni Award from the Indian Institute of Technology, Delhi.



Invited Speakers

Thursday, December 7 * 2:15 - 3:00 pm * Bene



Srikanth Bontha, PhD

Assistant Professor, Department of Mechanical Engineering, National Institute of Technology Karnataka

Computational Modeling of Laser Direct Metal Deposition Processes

Srikanth Bontha is currently an assistant professor in the Mechanical Engineering department at National Institute of Technology Karnataka (NITK). Before joining NITK in June 2013, he worked as an assistant professor at Indian Institute of Technology Patna (2011 – 2013) and also at Temple University, Philadelphia, USA (2009–2011). Before beginning his academic career, he spent more than three years in Industry at Kennametal Inc, Pittsburgh, USA, where he led product development projects as well as conducted research in the area of metal cutting. Dr. Bontha's research interests include Mechanics and Materials issues in Additive Manufacturing and Machinability of Titanium Alloys. For his experience and research contributions, Dr. Bontha was invited to serve on the International Scientific Committee of the Eleventh International Academy for Production Engineering (CIRP) Conference on Modeling of Machining Operations. He is a recipient of the 2010 Outstanding Young Manufacturing Engineer award from the Society of Manufacturing Engineers (SME). He is also a recipient of the 2009 Young Leader Professional Development Award from The Minerals, Metals and Materials Society (TMS) and the 2009 American Society for Metals (ASM) /Indian Institute of Metals (IIM) Visiting Lecturer. He was selected to represent TMS in the Emerging Leaders Alliance (ELA) Capstone Training Program at Denver, Colorado in November 2010. He holds three patents and has published several articles in top-ranking journals and international conference proceedings.

Dr. Bontha received Ph.D. in Engineering and M.S. in Mechanical Engineering degrees from Wright State University, Ohio and an undergraduate degree in Metallurgical Engineering from Jawaharlal Nehru Technological University, Hyderabad, India.



Invited Speakers

Thursday, December 7 * 3:00 - 3:45 pm * Bene



Dr. Dheepa Srinivasan

Principal Engineer at GE, Power, GE India Industrial Pvt.

Gas Turbine Hot Gas Path Component Repair using Additive Manufacturing

Dr. Dheepa Srinivasan is a Principal Engineer at GE, Power, GE India Industrial Pvt. Ltds. Bangalore. She has been with GE for over 17 years, as a lead scientist at the Global Research Centre, Technical leader for Materials and Process Engineering and Global Quality lean leader, GE Oil & Gas. She has a PhD, in Metallurgical Engineering, from the Indian Institute of Science, Bangalore. She is a certified Six Sigma Black Belt, in engineering quality management. Her core areas of expertise include development of high temperature structural materials and advanced coatings for gas turbine applications. She leads the repair development efforts for gas turbines, with emphasis on Additive Manufacturing, Cold Spray Coatings and Advanced Materials Characterization, as well as Component Lifting. In particular, she has pioneered the development of Additive Manufacturing in various Gas turbine Repair Applications, as a first of its kind product, that is qualified for production.



Invited Speakers

Thursday, December 7 * 4:00 - 6:00 pm * Jupiter 2



Dr. M. S. Anand

Rolls-Royce Engineering Associate Fellow

Combustion Simulation Challenges and the Digital Future

Dr. Anand has more than 39 years of experience in the modeling and simulation of turbulent reacting flows, and has been with Rolls-Royce for about 32 years. He leads the group that is responsible for the development of advanced computational fluid dynamics (CFD) based design system for all components including combustors, turbomachinery, inlets and nozzles etc.

He is also the global lead for combustion CFD methods for the global corporation. His group also provides advanced analytical design support for all component development and in-service programs. The group has developed industry-leading design tools under his leadership, particularly combustor tools which is his primary area of expertise. He also has joint worldwide corporate responsibility for providing strategic and technical direction for advanced methods R&D and design system development.

Dr. Anand has a strong background and record of advanced methods and model development as well as of experimental investigations. He has over 35 publications in reputed journals and conferences. He has won several Rolls-Royce R&D awards, and the Combustion Institute Student Award.

He has the honor of being appointed a Rolls-Royce Engineering Associate Fellow as well as Associate Fellow of AIAA in recognition of his technical contributions and international standing. He received his B. Tech from Indian Institute of Technology, Madras, India, and his M. S. and Ph. D. from Cornell University in Mechanical and Aerospace Engineering.



Invited Speakers

Friday, December 8 * 2:00 - 3:30 pm * Ceres



Dr. Toshinori Watanabe

Professor, Department of Aeronautics and Astronautics, The University of Tokyo

Recent Studies on Fundamental Mechanisms of Turbomachinery Flutter

Dr. Watanabe obtained Dr. Eng, from The University of Tokyo.

He is currently Associate Professor, Department of Aeronautics and Astronautics, The University of Tokyo.

His Research Field is Aerospace Propulsion, Internal Thermo-Fluid Mechanics, Aeroelasticity, Unsteady Aerodynamics, Aeroacoustics, Two-Phase Flow, Bio-fluid Mechanics.

His Social Activities include:

- President, Japan Society for Aeronautical and Space Sciences;
- Board Member, Gas Turbine Society of Japan;
- Vanguard Chair, ASME/IGTI Structures and Dynamics Committee (2013-2016).

Awards

- Best Paper Award of the 7th International Symposium on Fluid Machinery and Fluids Engineering, 2016
- Best Paper Award of Japan Society of Mechanical Engineers, 2013
- Fellow of JSASS, 2013
- Best Paper of AIAA Joint Propulsion Conference, 2008 and 2012 Testimonial of GTSJ, 2002
- Best Paper Award of GTSJ, 1992 and 2006



Panel Session

Digital Panel Discussion

Thursday, December 7 * 4:00 – 6:00 pm * Grand Ballroom

Over the past couple of decades, dramatic improvements in communication and computing technologies have driven the growth of consumer internet that has improved efficiencies, increased customer access and created new business models in many industries including retail, banking, hospitality, and transportation. The panel discussion will focus on how these technologies and business models are changing design, manufacturing and services of industrial assets including gas turbines and what the future holds with artificial intelligence, IOT, cloud and big data technologies.

Panelists



Dr. Kurichi Kumar
Head of Engineering, Rolls
Royce India



Leny Thangiah
Head of Research
Group, Advanced Data
Management,
Siemens Corporate
Technology



Vinay Jammu
Technology Leader,
Physical-Digital Analytics
in Digital Research
Organization, GE India
Technology Centre Private
Limited



Dr. Mohan Srinivasa
Engineering Simulations
and Predictive Analytics,
ANSYS, Inc.



Panel Session

Future Gas Turbine Technologies

Friday, December 8 * 11:30 am – 1:00 pm * Grand Ballroom

Panelists



Dr. Frank Haselbach

Global Head of System Design, Rolls-Royce Group
Rolls-Royce Engineering Fellow



Mr. Alok Nanda

COO, GE India Technology Centre
General Manager, India Engineering, GE Aviation



Dr. B. N. Raghunandan

Advisor to Director, Indian Institute of Science, Bengaluru



Dr. Mukul Saxena

Siemens Corporate Technology Research, India



Poster Session

Paper Number	Paper Title	Author	Affiliation
GTIndia2017-4515	Fractures of Materials Using Both Johnson's and Luder's Methods	Arupratan Gupta	National Institute of Technology Sikkim
GTIndia2017-4799	Effect of Vibration on the Failure of AI-2618 Compressor Blades of the Industrial AVON Gas Turbine	S. Ahmad Mortazavi	IAU Ahvaz
GTIndia2017-4810	Investigating Thermal Behavior during Laser Additive Manufacturing of Ni-based Superalloys	Chalumuri Satish	National Institute of Technology Karnataka, Surathkal
GTIndia2017-4829	Electro-Chemical Thrusters: A Novel Design for Advanced Propulsion	Vinayak Malhotra	SRM University
GTIndia2017-4854	Advanced Gas Turbine Technology: H Technology	Jithu Paulose	Federal Institute of Science And Technology (FISAT)
GTIndia2017-4873	Thrust Reverser in Turbofan	Krishna Thakkar	SRM University
GTIndia2017-4919	Study of Emission Characteristics of Blends of Hythane and Diesel in Gas Turbine Engines	C. Ajay Sekar	LuK India Pvt Ltd
GTIndia2017-4920	Applicability of Heat Transfer Equations to Hydrogen Fueled Spark Ignition Engines	Dinesh Bawane	Government Polytechnic Washim
GTIndia2017-4921	Utility of Jetfans for Aircraft Cooling Applications	Samanyu Raina	Department of Aerospace Engineering
GTIndia2017-4922	Latent NOx reduction in Low Altitude Aircrafts	Anirudh Nautiyal	SRM University
GTIndia2017-4924	A Role of Additive Manufacturing in Fabrication and Repairing of Gas Turbine Blades	Akshay D. Mate	NIT Warangal
GTIndia2017-4925	Combined Cycle Gas Turbine Based on Solar Energy and Smart Fuel for Sustainable Development	Sumit Kumar	Institute of Engineering & Management, Kolkata, INDIA
GTIndia2017-4927	Assessment of Loss Correlations for Performance Evaluation of High Speed Cryogenic Microturbine Used in Helium Applications	Ashish Alex Sam	Indian Institute of Technology Kharagpur
GTIndia2017-4928	Conceptual Development of Transonic/Supersonic Compressor Airfoils	Tuhin Bandopadhyay	Indian Institute of Technology, Kharagpur



GTIndia2017-4930	CFD Simulation of Inclined Cavity Surface of Turbine Rotor Blade for Reduced Tip Leakage Losses	Rupesh Shah	National Institute of Technology, Surat
GTIndia2017-4931	Influence of Pre-Combustible Mixture Properties on the Performance of Nozzle set of Partial Admission Turbine used in Semicryogenic Engine	Arpit Mishra	Indian Institute of Technology Kharagpur
GTIndia2017-4932	Feasibility of One Man Copters As Future Transportation	Vinayak Malhotra	SRM University
GTIndia2017-4933	Design of a Wind Tunnel for Railway Research in India	Shubham Kesharwani	IIT Kharagpur
GTIndia2017-4940	Investigation on Effect of MgO-ZrO ₂ and Al ₂ O ₃ -13%TiO ₂ Coated Piston Crown on Performance and Emission Characteristics of a CI Engine	Thirunavukkarasu Raja	Sri Ramakrishna Institute of Technology
GTIndia2017-4941	Creating and Development Airflow Test Criteria for Gas Turbine Nozzles and Blades	Hazhir Shahabbaspour	Mapna Group
GTIndia2017-4943	CFD Analysis Of Two-Layer Hydrodynamic Bearing Performance Of Gas Turbine Power Generation Unit Under The Different Varying Parameters	Nabarun Biswas	NIT Agartala
GTIndia2017-4944	Environmental and Economic Impacts Evaluation of a Gas Thermal Power Plant Using Life Cycle Assessment Approach	Ashis Acharjee	NIT Agartala
GTIndia2017-4945	Design of Automotive Turbocharger based Gas turbine engine	Shreyas R S	IIAEM, Jain University



TRACK 1 Compressors, Fans and Pumps

Track Organizer: **Pradeep A M**, *Indian Institute of Technology*

1-3 CENTRIFUGAL COMPRESSORS I * Neptune

8:00am - 10:00am

Session Organizer: **Chetan Mistry**, *IIT Kharagpur*

Session Co-Organizer: **Kirubakaran Purushothaman**, *Gas Turbine Research Establishment*

AN EXPERIMENTAL INVESTIGATION ON HYSTERESIS IN A WET GAS COMPRESSOR

Technical Publication. GTIndia2017-4518

Martin Bakken, Tor Bjorge, *Norwegian University of Science and Technology (NTNU)*

VOLUTE FLOW INFLUENCE ON WET GAS COMPRESSOR PERFORMANCE

Technical Publication. GTIndia2017-4529

Martin Bakken, Tor Bjorge, *Norwegian University of Science and Technology (NTNU)*

An Improved Streamline Curvature Method for Centrifugal Compressor Performance

Technical Publication. GTIndia2017-4531

Chaowei Zhang, Xuezhi Dong, Xiyang Liu, Qing Gao, Chungqing Tan, *Institute of Engineering Thermophysics, Chinese Academy of Sciences*

AN EXPERIMENTAL STUDY OF THE SLIP FACTOR IN A WET GAS CENTRIFUGAL COMPRESSOR WITH IGV

Technical Publication. GTIndia2017-4634

Levi André Berg Vigdal, Lars Eirik Bakken, *Norwegian University of Science and Technology*

Track 2 Turbines

Track Organizer: **Ujjwal K. Saha**, *Indian Institute of Technology Guwahati*

2-2 EXPERIMENTS & SIMULATIONS * Ceres

8:00am - 10:00am

Session Organizer: **Sankarkumar J**, *Gas Turbine Research Establishment*

Session Co-Organizer: **Saurya Ray**, *General Electric*

TOWARDS AN UNDERSTANDING OF TRAVERSE MIGRATION IN THE HIGH PRESSURE STAGE OF A GAS TURBINE: EFFECTS OF GEOMETRY FIDELITY & TURBULENCE MODELLING

Technical Publication. GTIndia2017-4583

Karthik Srinivasan, *Rolls-Royce India Private Limited*; **Simon Bather**, *Rolls-Royce plc*

DESIGN AND ANALYSIS OF A MARINE CURRENT TURBINE

Technical Publication. GTIndia2017-4912

T. Karthikeyan, Abdus Samad; *IIT Madras*; **E Avital**, *Queen Mary University of London*; **Nithya Venkatesan**, *VIT University*

COMPUTATIONAL STUDIES ON HIGH PRESSURE TURBINE RIM SEAL CAVITIES

Technical Publication. GTIndia2017-4638

Manjunath Chengappa, Karthik Srinivasan, Karthik Srinivasan, Rohit Chouhan, Eric Blidmark, *Rolls-Royce India Pvt. Ltd*; **Simon Bather**, *Rolls-Royce plc*.

Experimental Study of Unsteady Pressure Fluctuations Due to Tip Leakage Flows in an Axial Flow Turbine

Technical Publication. GTIndia2017-4868

Raju Senthil Kumaran, *CSIR-NAL*, **Kishor Kumar, N Poornima**, *National Aerospace Laboratories*



Track 3 Heat Transfer

Track Organizer: **BHAMIDI V S S S PRASAD**, IIT MADRAS

3-3 HEAT TRANSFER WITH FILM COOLING * Jupiter 2

8:00am - 10:00am

Session Organizer: **Debasish Biswas**, Toshiba Corp

Session Co-Organizer: **Sunil Murthy**, GE Global Research

COMPUTATIONAL STUDY OF FILM COOLING WITH MIST AND AIR ON A FLAT PLATE

Technical Publication. GTIndia2017-4549

Mallikarjuna Rao Pabbisetty, Pratibha Biswal, BHAMIDI V S S S PRASAD, IIT MADRAS

Flow and Heat Transfer Analysis of Mist-Film Cooling on a Flat Plate

Technical Publication. GTIndia2017-4568

Subrata Sarkar, Ankit Verma, Anjali Dwivedi, Indian Institute of Technology Kanpur

SURROGATE BASED DESIGN OPTIMISATION OF COMBUSTOR TILE COOLING FEED HOLES

Technical Publication. GTIndia2017-4586

Kiran Kumar Nagabandi, Rolls-Royce; **Stephen Mills**, Rolls-Royce plc, **Xu Zhang, David J. J. Toal, Andy J. Keane**, University of Southampton

Numerical and Experimental investigations on Liner Heat Transfer in an Aero Engine Combustion Chamber

Technical Publication. GTIndia2017-4776

NARAYANA RAO K V L, KANNA BABU CH, GIRISH K DEGAONKAR, HINDUSTAN AERONAUTICS LIMITED, **BHAMIDI V S S S PRASAD**, IIT MADRAS

Track 5 Structures and Dynamics

Track Organizer: **Ramesh T.C.**, QuEST Global

5-3 ROTORS * Grand Ballroom I

8:00am - 10:00am

Session Organizer: **J Srinivasan**, QuEST Global

Session Co-Organizer: **Chaitanya Srinivas**, Rolls Royce India Pvt Ltd

FINITE ELEMENT ANALYSIS FOR DYNAMIC RESPONSE OF ROTOR-BEARING SYSTEM WITH CRACKED FUNCTIONALLY GRADED TURBINE SHAFT

Technical Publication. GTIndia2017-4534

Debabrata Gayen, Debabrata Chakraborty, Rajiv Tiwari, Indian Institute of Technology Guwahati

A Numerical Study on Effect of Electromagnetic Actuator on Rigid Rotor Supported on Gas Foil Bearing

Technical Publication. GTIndia2017-4607

Kamal Kumar Basumatary, Gaurav Kumar, Karuna Kalita, Kakoty SK, Indian Institute of Technology Guwahati

Imbalance Response of Nonlinear Rotor-SFD Dynamic Systems with Structure Modeled As FRFs Using Harmonic Balance Method

Technical Publication. GTIndia2017-4749

Manoj Settippalli, Rahul Chandran, Venkatarao Ganji, Honeywell Technology Solutions Lab, **Theodore Brockett**, Honeywell Aerospace

INTERACTION BETWEEN UNBALANCE AND MISALIGNMENT RESPONSES IN FLEXIBLY COUPLED ROTOR SYSTEMS INTEGRATED WITH AMB

Technical Publication. GTIndia2017-4535

Siva Srinivas Rangavajhala, Rajiv Tiwari, IIT Guwahati, **Ch KANNA BABU**, AERDC, HINDUSTAN AERONAUTICS LIMITED



Track 6 Renewable Energy (Solar, Wind)

Track Organizer: **Jitendra Bijlani**, *LM Wind Power*

6-1 RENEWABLE ENERGY - I (AERODYNAMICS, PERFORMANCE) * Jupiter 1

8:00am - 10:00am

Session Organizer: **Ganesh Ramanathan**, *LM Wind Power Technologies India Pvt Ltd.*

Session Co-Organizer: **Jaikumar Loganathan**, *GE Global Research*

Aerodynamic Performance of an Elliptical-Bladed Savonius Rotor Under The Influence of Number of Blades and Shaft

Technical Publication. GTIndia2017-4554

Nur Alom, *National Institute of Technology Meghalaya*,
Nitish Kumar, **Ujjwal K. Saha**, *Indian Institute of Technology Guwahati*

Identification of Geographical Locations to Operate Savonius Wind Turbine Rotor for Meeting a Desired Performance

Technical Publication. GTIndia2017-4566

Sukanta Roy, *IRPHE, Aix Marseille University* **Ranjan Das**, *Indian Institute of Technology Ropar*, **Ujjwal K. Saha**, *Indian Institute of Technology Guwahati*

Track 10 Materials & Manufacturing (including Coatings, Composites, CMCs, Additive Manufacturing)

Track Organizer: **Yogesh Potdar**, *GE-Global Research Center*

10-2 COMPOSITES & FUNCTIONAL MATERIALS *

Bene 8:00am - 10:00am

Session Organizer: **Satish Chandra**, *NAL*

Session Co-Organizer: **Vidyashankar Buravalla**, *GE*

NUMERICAL SIMULATION OF CLUSTER OF SMALL VERTICAL AXIS WIND TURBINE TO DEVELOP A WIND TREE FOR LOW WIND SPEED REGIME

Technical Publication. GTIndia2017-4675

Micha Premkumar T, **Mohan Thangaraj**, *Hindustan Institute of Technology and Science*, **Silambarasan Palanivel**, *Turboenergy Pvt Ltd*, **Seralathan Sivamani**, *Hindustan Institute of Technology and Science*

Engineering and Economic Models of Vertical Axis Wind Turbines

Technical Publication. GTIndia2017-4815

Elhadji Alpha A. Bah, *CDI Corporation*, **Lakshmi Sankar**, **Jecheil J. Jagoda**, *Georgia Institute of Technology*



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A Study on Tribological Behavior of Linz-Donawitz Slag Filled Polypropylene Composites Using Experimental Design and Neural Networks
Technical Publication. GTIndia2017-4514

Pravat Ranjan Pati, ICFAI Tech School, IFHE University, Alok Satapathy, National Institute of Technology

Transient Dynamic Analysis of Pretwisted Functionally Graded Conical Shells Subject to low Velocity Impact: A Finite Element Approach
Technical Publication. GTIndia2017-4611

Apurba Das, Ranojit Banerjee, Amit Karmakar, Jadavpur University

Reliability of Ti/SiC Metal Matrix Composites
Technical Publication. GTIndia2017-4859

Ashish Mishra, Mahesh Sivasambu, IIT Madras

Optimization of Electrical Discharge Coating Process using MOORA Based Firefly Algorithm
Technical Publication. GTIndia2017-4636

Anshuman Kumar Sahu, Siba Sankar Mahapatra, National Institute of Technology, Suman Chatterjee, National Institute of Technology

TRACK 13 Keynote Lectures

13-1 KEYNOTE: DEVELOPMENT OF AERO GAS TURBINE ENGINES AND TECHNOLOGIES IN INDIA: PRESENT AND FUTURE

Grand Ballroom I & II

10:30am - 11:45am

Development of Aero Gas Turbine Engines and Technologies in India: Present and Future

Keynote. GTIndia2017-4946

CP Ramanarayanan, Aeronautical Systems, DRDO

Track 8 Emerging Technologies (Hybrid Electric Propulsion, UAV,...)

Track Organizer: **Dhinakaran R, Turbo Energy Tech Centre**

8-1 EMERGING TECHNOLOGIES * Jupiter 1

11:45am - 12:15pm

Session Organizer: **Dhinakaran R, Turbo Energy Tech Centre**

Design, Development and Dynamic Modelling of Radio Remote Controlled Unmanned Aero Amphibious Vehicle

Technical Publication. GTIndia2017-4643

N. C. Ajay Vishwath, Cris Thomas, Vindhya Devalla, Arjun Jeyarani Arun Jeya Prakash, Amit Kumar Mondal, University of Petroleum and Energy Studies



Track 3 Heat Transfer

Track Organizer: **BHAMIDI V S S PRASAD**, IIT MADRAS

3-4 SECONDARY AIR SYSTEM * Jupiter 2

11:45am - 1:15pm

Session Organizer: **Abdul Nassar**, *SoftInWay Turbomachinery Solutions Pvt. Ltd.*

Session Co-Organizer: **Giovanni Cerri**, *Roma Tre University - Department of Engineering*

Experimental Investigation of Perforated Enclosures in Confined Natural Convection

Technical Publication. GTIndia2017-4580

Ribhu Bhatia, Vinayak Malhotra, *SRM University*

Pol Reddy Kukutla, BHAMIDI V S S PRASAD, *Indian Institute of Technology Madras*

Performance Improvement of Gas Turbine Power Plant by Intake Air Passive Cooling using Phase Change Material based Heat Exchanger

Technical Publication. GTIndia2017-4746

DEVENDRA DANDOTIYA, Nitin Banker, *SHIV NADAR UNIVERSITY*

Secondary Air Performance Optimization of a Combined Impingement and Film Cooled Gas Turbine Nozzle Guide Vane

Technical Publication. GTIndia2017-4608

Track 5 Structures and Dynamics

Track Organizer: **Ramesh T.C.**, *QuEST Global*

5-5 DYNAMICS – 2 * Ceres

11:45am - 1:15pm

Session Organizer: **Sunderraman Mohan**, *Siemens Energy*

Session Co-Organizer: **Parag Ravindran**, *Indian Institute of Technology Madras, Chennai*

NECESSITY OF KINEMATIC STRAIN HARDENING IN SIMULATING IMPACT EVENTS

Technical Publication. GTIndia2017-4779

Sharang Kirloskar, Gurmeet Singh, Avinash Kumar, *Honeywell Technology Solutions Pvt Ltd*

Institute of Technology Delhi, HARAPRASAD ROY, NATIONAL INSTITUTE OF TECHNOLOGY

Dynamic Behaviour of Delaminated Composite Plate Under Blast Loading

Technical Publication. GTIndia2017-4847

Chetan Kumar Hirwani, Subrata Kumar Panda, Siba Sankar Mahapatra, *National Institute of Technology Rourkela, Sanjib Kumar Mandal, Apurba Kumar De, DIC*

Parametric Study of Stability Criteria for Rotor Bearing Model with Viscoelastic Support

Technical Publication. GTIndia2017-4781

Saurabh Chandraker, Jayanta Kumar Dutt, *Indian*



Track 7 Inlets and exhausts

Track Organizer: **Sankaran S**, *Indian Space Research Organization (ISRO)*

7-1 * Neptune

11:45am - 1:15pm

Session Organizer: **Sankaran S**, *Indian Space Research Organization (ISRO)*

JET PERFORATIONS FOR GAS TURBINE APPLICATIONS

Technical Publication. GTIndia2017-4623

**Anisha Varughese, lakshmi P, Srilekha Rajarshi
Pasula Valmiki, Vinayak Malhotra, abdur rasheed,
SRM university**

High Compressible Flow Through Jet Blast Deflector.

Technical Publication. GTIndia2017-4699

ABHIJEET JAISWAL, Dr. Ashwin S. Dhoble, *Visvesvaraya
National Institute of Technology, Dharmaraj Tidke,
Anand Mine Tools Limited*

REVISITING V-3 CANON FOR THE APPLICATION OF SINGLE STAGE GAS GUN

Technical Publication. GTIndia2017-4598

**Arun Tom Mathew, VIT University, Tirumala Rao Koka,
Honeywell, Murali Krishnan P**, *Honeywell Technology
Solutions Lab*

Track 9 GT Operation and Maintenance

Track Organizer: **Hemant Gajjar**, *Torrent Power Ltd. (SUGEN Mega Power Project)*

9-1 AERO ENGINE OPERATION & PERFORMANCE * Bene

11:45am - 1:15pm

Session Organizer: **Pallavi Baddam**, *Mitsubishi Heavy Industries Compressor International Corporation*

Co-Organizer: **Joseph Machnaim**, *GE Global Research*

PYRO ASSISTED STARTING OF SMALL GAS TURBINE ENGINE FOR UNMANNED APPLICATION

Technical Publication. GTIndia2017-4541

Anil Kumar K, N Balamuralikrishnan, *GAS TURBINE
RESEARCH ESTABLISHMENT*

Aero Engine Performance Evaluation During Missile Firing Test

Technical Publication. GTIndia2017-4544

Sajath kumar M, santhosh kasram, *Aeronautical*

*Development Agency, G P Ravishankar, Mahesh P
Padwale*, *Aeronautical Development Agency*

Sensor Data Validation in a Developmental Aero Gas Turbine Engine

Technical Publication. GTIndia2017-4841

Usha Srinivasan, *Gas Turbine Research Establishment,
DRDO, N Muthuveerappan*, *Gas Turbine Research
Establishment, Defence Research and Development
Organization*



TRACK 15 Invited Sessions

15-1 DEVELOPMENT OF A ROBUST DISTORTION TOLERANT LOW PRESSURE RATIO FAN FOR BOUNDARY LAYER INGESTING ENGINES

Grand Ballroom I & II

11:45am - 1:15pm

Development of a Robust Distortion Tolerant Low Pressure Ratio Fan for Boundary Layer Ingesting Engines

Technical Presentation Only. GTIndia2017-4950

Om Sharma, *United Technologies Research Center (UTRC)*

Track 11 Analytics & Digital Solutions for Gas Turbines/Rotating Machinery

Track Organizer: **Vinay Jammu**, *GE India Technology Centre Private Limited*

11-1 ANALYTICS & DIGITAL SOLUTIONS FOR GAS TURBINES/ ROTATING MACHINERY * JUPITER 1

12:15pm - 1:15pm

Session Organizer: **Vinay Jammu**, *GE India Technology Centre Private Limited*

Track 1 Compressors, Fans and Pumps

Track Organizer: **Pradeep A M**, *Indian Institute of Technology*

1-4 CENTRIFUGAL COMPRESSORS II * Grand Ballroom II

2:15pm - 3:45pm

Session Organizer: **Quamber Nagpurwala**, *Retd. MSRUAS*

Session Co-Organizer: **Aneesh Vadvadgi**, *GE Power*

CFD Studies on the Performance of the Centrifugal Compressor with Single Wall Rotating Vaneless Diffusers at the wall extension ratios of 1.1 and 1.15

Technical Publication. GTIndia2017-4625

Srinivasa Rao Konakala, *Indian Institute of technology Madras*, **Govardhan M**, *Mechanical Engineering Department*

Numerical Investigation to Assess the Performance of Free Rotating Vaneless Diffuser for a Centrifugal Compressor Stage

Technical Publication. GTIndia2017-4704

Seralathan Sivamani, *Roychowdhury D.G, Hindustan Institute of Technology and Science*

Performance Evaluation of A Turbocharger Compressor by Varying the Exit Width, Eye Tip Radius and Extending the Shroud and their Impact Using Computational Analysis

Technical Publication. GTIndia2017-4871

Jerry Thomas John, *MG UNIVERSITY*, **Nikhil Mohanan**, *FEM CFD Research and Development*, **Arun Kumar D. V.**, *MG UNIVERSITY*



1-5 PUMPS AND TURBOCHARGERS * Jupiter 2

2:15pm - 3:45pm

Session Organizer: **Abdus Samad**, *IIT Madras*

Session Co-Organizer: **Akshoy Ranjan Paul**, *Motilal Nehru National Institute of Technology*

Evaluation of Non-Cavitating Steady State Performance of an Aero-Engine Gear Pump by Numerical Methods

Technical Publication. GTIndia2017-4528

SHIVAKUMAR ULAGANATHAN, Ch KANNA BABU, Girish K Degaonkar, *AERDC, HINDUSTAN AERONAUTICS LIMITED*

Kishore Kumar C, Kirubakaran P, VIDYADHEESH PANDURANGI, Kishore Prasad D, *Gas Turbine Research Establishment*

Surface Roughness Effect on Performance of an Electric Submersible Pump

Technical Publication. GTIndia2017-4848

DHAIRYASHEEL DESHMUKH, M. H. Siddique, Abdus Samad, *IIT Madras*

Experimental and Numerical Investigation of Operating Range Enhancement Techniques in Centrifugal Compressor for Turbochargers

Technical Publication. GTIndia2017-4753

Track 4 Combustion, fuels and emissions

Track Organizer: **Satyanarayanan Chakravarthy**, *IIT Madras*

4-1 COMBUSTION CHARACTERIZATION I * CERES

2:15pm - 3:45pm

Session Organizer: **Rajani Kumar Akula**, *GE India Technology Centre*

Session Co-Organizer: **Renith Richardson**, *Siemens Technology and Services Private Limited*

INFLUENCE OF FUEL JET MOMENTUM ON CHARACTERISTICS OF A REVERSE-CROSS FLOW COLORLESS COMBUSTOR

Technical Publication. GTIndia2017-4600

Shreshtha K. Gupta, *Indian Institute of Technology, Vaibhav Arghode*, *Indian Institute of Technology Kanpur*

CFD Analysis of Combustor-Diffuser System of Marine Gas Turbine Engine

Technical Publication. GTIndia2017-4739

Srinivasan K, *Gas Turbine Research Establishment, Vaibhav Murlidhar Sondur*, *Bapuji Institute of Engineering and Technology, Gullapalli Sivaramakrishna*, *Gas Turbine Research Establishment, DRDO, Raju D Navindgi, N Muthuveerappan*, *Gas Turbine Research Establishment, Defence Research and Development Organization*

EXPERIMENTAL INVESTIGATION OF A LOW EMISSION LIQUID FUELLED REVERSE CROSS FLOW COMBUSTOR

Technical Publication. GTIndia2017-4601

Preetam Sharma, *IIT Kanpur, Vaibhav Arghode*, *Indian Institute of Technology Kanpur*



4-3 COMBUSTORS: PERFORMANCE & EMISSIONS I * Neptune

2:15pm - 3:45pm

Session Organizer: **Swetaprovo Chaudhuri**, *Indian Institute of Science (IISc)*

Session Co-Organizer: **Mohan Sripathi**, *GE India Technology Centre Pvt Ltd*

Flashback and Blow Out Study of a Lean Premixed Pre-Vaporized Can Combustor

Technical Publication. GTIndia2017-4642

Harendra K. Verma, Arvind Kumar, Keshav Kumar, Rinaz Mohammed, *Quest Global Engineering PVT LTD*

Performance of an Annular Combustor under Windmill Conditions During Stand-alone and Engine Level Altitude Test

Technical Publication. GTIndia2017-4728

Srinivasan K, *Gas Turbine Research Establishment*,

Dalton Maurya, Raju D Navindgi, N

Muthuveerappan, *Gas Turbine Research Establishment, Defence Research and Development Organization*

Start Characteristics of A Turbofan Engine In Suction Mode For A Windmill Relight

Technical Publication. GTIndia2017-4872

Ashish Bhatt, Budharaju Balaji, Abdullah Tyeb, Amit Kumar Gupta, Mahesh P Padwale, G P Ravishankar, *Aeronautical Development Agency*

Track 10 Materials & Manufacturing (including Coatings, Composites, CMCs, Additive Manufacturing)

Track Organizer: **Yogesh Potdar**, *GE-Global Research Center*

10-1 ADDITIVE MATERIALS: PART A * Bene

2:15pm - 3:45pm

Session Organizer: **Dheepa Srinivasan**, *GE India Technology Center Pvt. Ltd.*

Session Co-Organizer: **Srikanth Bontha**, *National Institute of Technology*

Computational Modeling of Laser Direct Metal Deposition Processes

Tutorial. GTIndia2017-4952

Srikanth Bontha, *National Institute of Technology*

Gas Turbine Hot Gas Path Component Repair using Additive Manufacturing

Panel. GTIndia2017-4571

Dheepa Srinivasan, *GE India Technology Center Pvt. Ltd.*



Session Organizer: **Johan Singh**, *Rolls Royce*

Session Co-Organizer: **Prita Pant**, *IIT-Bombay*

Parametric Investigation on Microstructure and Mechanical Properties of Ultrasonic Spot Welded Aluminium to Copper Sheets

Technical Presentation Only. GTIndia2017-4533

MANTRA PRASAD SATPATHY, *KIIT, Kasinath Das Mahapatra, Susanta Kumar Sahoo, NIT Rourkela*

Experimental and Parametric Evaluation of Quality Characteristics in Nd: YAG Laser Micro-Drilling of Ti6Al4V and AISI 316

Technical Publication. GTIndia2017-4679

Suman Chatterjee, Siba Sankar Mahapatra, Anshuman Kumar Sahu, *National Institute of*

Technology - Rourkela, Vijay K. Bhardwaj, Ambar Choubey, Brahma N. Upadhyay, Kushvinder S. Bindra, Raja Ramanna Centre for Advanced Technology

Characterization Of Ti-6Al-4V Alloy Modified by Plasma Nitriding Process

Technical Publication. GTIndia2017-4855

Vaibhav Bhavsar, *National Centre for Aerospace Innovation and Research, NCAIR, IIT Bombay, Jyoti Jha, IIT Bombay, Ghanshyamsinh Jhala, Alphonsa Joseph, Facilitation Centre for Industrial Plasma Technologies - Institute for Plasma Research, Sushil Mishra, Asim Tewari, IIT Bombay*

Track 4 Combustion, fuels and emissions

Track Organizer: **Satyanarayanan Chakravarthy**, *IIT Madras*

4-1 COMBUSTION CHARACTERIZATION II * Ceres

4:00pm - 6:00pm

Session Organizer: **Rajani Kumar Akula**, *GE India Technology Centre*

Session Co-Organizer: **Renith Richardson**, *Siemens Technology and Services Private Limited*

OIL FLOW SIMULATIONS IN THE LUBRICATION SYSTEM OF A TURBOCHARGER

Technical Publication. GTIndia2017-4816

Dhinakaran R, *Turbo Energy Tech Centre, Seran Krishnamoorthy, Turbo Energy Pvt Ltd, Ramesh K, Turboenergy, Saravanan Boolingam, Turbo Energy Pvt Ltd*

On the dynamics of mitigating instability by actuating the swirler in a lean premixed turbulent combustor

Technical Publication. GTIndia2017-4710

Gopakumar R, *Indian Institute of Science (IISc), Rahul B.V, Jasmeet Singh, Ankit Kumar Dutta, Swetaprovo Chaudhuri, Indian Institute of Science (IISc)*

Investigation Of Flame Stabilization In A Co-axial Swirl Burner Using Non-Intrusive Laser Diagnostic Technique

Technical Publication. GTIndia2017-4698

DEEPAK KUMAR SAHU, PRATHAP C, *IIST, TRIVANDRUM, India*

Investigation on the effect of geometrical parameters on the temperature distribution and emission of a sideways faced porous radiant burner

Technical Publication. GTIndia2017-4635

Sangjukta Devi, *Indian Institute of Technology Guwahati, NIRANJAN SAHOO, Indian Institute of Technology Guwahati*



4-3 COMBUSTORS: PERFORMANCE & EMISSIONS II * Neptune

4:00pm - 6:00pm

Session Organizer: **Swetaprovo Chaudhuri**, *Indian Institute of Science (IISc)*

Session Co-Organizer: **Mohan Sripathi**, *GE India Technology Centre Pvt Ltd*

THE EFFECT OF THE SAMPLE LINE LENGTH ON GAS TURBINE EMISSIONS MEASUREMENT

Technical Publication. GTIndia2017-4512

Thomas Gill, Ihab Ahmed, Emamode Ubogu, Lukai Zheng, Bhupendra Khandelwal, The University of Sheffield

Prediction of Soot Formation Trends in Turbulent Kerosene-Air Diffusion Jet Flames with Elevated Operating Pressure

Technical Publication. GTIndia2017-4736

Pravin Nakod, Saurabh Patwardhan, Ishan Verma, ANSYS Inc, Stefano Orsino, ANSYS Inc

Multi-swirl Lean Direct Injection Burner for Enhanced Combustion Stability and Low Pollutant Emissions

Technical Publication. GTIndia2017-4905

V Deepika, S.R. Chakravarthy, T.M. Muruganandam, N. Raja Bharathi, Indian Institute of Technology Madras

Track 10 Materials & Manufacturing (including Coatings, Composites, CMCs, Additive Manufacturing)

Track Organizer: **Yogesh Potdar**, *GE-Global Research Center*

10-1 ADDITIVE MATERIALS: PART B * Bene

4:00pm - 6:00pm

Oxidation Coatings on Additively Manufactured CoCrMo

Technical Publication. GTIndia2017-4613

Sujith Somanatha Panicker, GE India Technology Center, Dheepa Srinivasan, GE India Technology Center Pvt. Ltd.

Study of Process Parameter and Powder Variability on the Properties and Recrystallization Behavior of Direct Metal Laser Sintered CoCrMo

Technical Publication. GTIndia2017-4614

Dheepa Srinivasan, GE India Technology Center Pvt. Ltd., Santhosh Kumar Rao c, GE India Technology Centre Pvt Ltd, ANIGANI SUDARSHAN REDDY, Durga Ananthanarayanan, GE India Technology Center Pvt. Ltd.

Technical Publication. GTIndia2017-4798

A N Jinoop, Raja Ramanna Centre for Advanced Technology, Paul C.P, RRCAT, Kushvinder S. Bindra, Raja Ramanna Centre for Advanced Technology

Study of Condensate generated during Direct Metal Laser Sintering process

Technical Publication. GTIndia2017-4900

Jagadish C.A., Intech DMLS

Parametric Study on Laser Additive Manufacturing and Subsequent Post Processing of Inconel 718 Thin Walled Structures



10-3 METALLIC ALLOYS: PART II * Jupiter 1

4:00pm - 6:00pm

Session Organizer: **Johan Singh**, *Rolls Royce*

Session Co-Organizer: **Prita Pant**, *IIT-Bombay*

Fatigue crack growth retardation in Titanium alloy

Technical Publication. GTIndia2017-4893

Sachin Biradar, *National Centre for Aerospace Innovation and Research*, **Jyoti Jha**, **Sushil Mishra**, **Asim Tewari**, *IIT Bombay*

Development and removal of alpha-case layer from heat treated Titanium alloys

Technical Publication. GTIndia2017-4894

Nikita Mohite, *National Centre for Aerospace Innovation and Research*, **Jyoti Jha**, **Sushil Mishra**, *IIT Bombay*, **Sachin Biradar**, *National Centre for Aerospace Innovation and Research*, **Asim Tewari**, *IIT Bombay*

Track 14 Panel Discussions

14-2 DIGITAL PANEL DISCUSSION * Grand Ballroom I & II

4:00pm - 6:00pm

Session Organizer: **Vinay Jammu**, *GE India Technology Centre Private Limited*

Digital Panel Discussion: Dr. Kurichi Kumar, *Rolls Royce India*

Panel. GTIndia2017-4953

Digital Panel Discussion: Leny Thangiah, *Siemens Corporate Technology*

Panel. GTIndia2017-4954

Digital Panel Discussion: Mohan Srinivasa, *ANSYS, Inc.*

Panel. GTIndia2017-4955

Digital Panel Discussion: Vinay Jammu, *GE India Technology Centre Private Limited*

Panel. GTIndia2017-4956



Track 1 Compressors, Fans and Pumps

Track Organizer: **Pradeep A M**, *Indian Institute of Technology*

1-2 AXIAL COMPRESSORS II * Neptune

8:00am - 11:00am

Session Organizer: **Abhijit Kushari**, *I.I.T. Kanpur*

Session Co-Organizer: **Shraman Goswami**, *Honeywell*

Validation of a transient turbofan model in windmilling conditions

Technical Publication. GTIndia2017-4577

SOBIN SANTHOSH, *Nicolas García Rosa*, *ISAE-SUPAERO*

Flow Compressor Stage

Technical Publication. GTIndia2017-4594

Ravi J Chotalia, *Propulsion Division*, **Dilipkumar Bhanudasji Alone**, *CSIR-NAL*

Numerical Analysis of Aerofoil with Synthetic Jets

Technical Publication. GTIndia2017-4587

Mayuresh Neve, **Vilas Kalamkar**, **Akshay Wagh**, *VNIT NAGPUR*

Cold Blade Profile Generation Methodology For Axial Compressor Rotor Blades Using FSI Approach

Technical Publication. GTIndia2017-4762

Kirubakaran P, *Gas Turbine Research Establishment*, **Sankarkumar J**, *Gas Turbine Research Establishment*, **Ajay Pratap**, *Gas Turbine Research Establishment*, **Kishore Prasad D**, *Gas Turbine Research Establishment*

Flow Studies On a Single Stage Transonic Axial Flow Compressor Retrofitted with Circumferential Grooves and Varied Rotor Stator Axial Gap

Technical Publication. GTIndia2017-4592

Anand P Darji, *S.V.I.T Vasad Gujrat*, **Dilipkumar Bhanudasji Alone**, *CSIR-NAL*, **Chetan Mistry**, *IIT Kharagpur*,

Design aspects of large diameter, low speed axial flow fan for wind tunnel application.

Technical Publication. GTIndia2017-4880

Shubham Kesharwani, *IIT Kharagpur*, **Chetan Mistry**, *IIT Kharagpur*, **Subhansu Roy**, *IIT Kharagpur*, **Arnab Roy**, *IIT Kharagpur*, **Kalyan P. Sinhamahapatra**, *IIT Kharagpur*

Numerical Investigations on an Influence of Uniform Blade Surface Roughness on the Performance Characteristics of a Transonic Axial



Track 2 Turbines

Track Organizer: **Ujjwal K. Saha**, *Indian Institute of Technology Guwahati*

2-1 DESIGN CONCEPTS AND STUDIES * Jupiter 1

8:00am - 11:00am

Session Organizer: **Rajendra Wankhade**, *GE India Technology Centre Private Limited*

Session Co-Organizer: **Prathapanayaka Rajeevalochanam**, *CSIR- National Aerospace Laboratories*

Flow Field Investigation In A Partial Admission Supersonic Turbine Of LOX Booster Turbopump For Staged Combustion Cycle Based Rocket Engine

Technical Publication. GTIndia2017-4502

ARPIT MISHRA, *Indian Institute of Technology Kharagpur*,
Parthasarathi Ghosh, *IIT Kharagpur*

Design and Analysis of Radial Turbine for Turbocharger Application

Technical Publication. GTIndia2017-4860

Bharathan Desikan, David John R, Sharad Kapil, Ramana Murty S V, *Gas Turbine Research Establishment, Bangalore, India*,
Kishore Prasad D, *Gas Turbine Research Establishment, Bengaluru, Karnataka, India*

Evaluation Of Impulse Turbines For A Wave Energy Converter

Technical Publication. GTIndia2017-4567

Aravind George, Ranjith B, *INDIAN INSTITUTE OF TECHNOLOGY MADRAS*,
Abdus Samad, *IIT Madras*,
Prasad Dudhgaonkar, *National Institute of Ocean Technology*

Experimental & Numerical Studies on a Curved Back Transonic Airfoil

Technical Publication. GTIndia2017-4874

Prathapanayaka Rajeevalochanam, S N Agnimitra Sunkara, *CSIR- National Aerospace Laboratories*,
Raju Senthil Kumaran, *CSIR-NAL*,
NILOTPOLE KALITA, *CSIR- National Aerospace Laboratories*,
P P Sharath, *CSIR- National Aerospace Laboratories*

Mean-Line Modelling of a Variable Geometry Turbocharger (VGT) and prediction of the engine-turbocharger coupled performance

Technical Publication. GTIndia2017-4752

Anand Mammen Thomas, RIC, DRDO, Jensen Samuel, A Ramesh, *Indian Institute of Technology Madras*

Development of LP Blade Module for High Back Pressure-Aerodynamic Design

Technical Publication. GTIndia2017-4542

Ambrish, Nand Kumar Singh, *Bharat Heavy Electrical Limited*



Track 3 Heat Transfer

Track Organizer: **BHAMIDI V S S PRASAD**, IIT MADRAS

3-1 THERMODYNAMICS AND CYCLES * Bene

8:00am - 11:00am

Session Organizer: **Adithya Rao**, MOOG India Technology Centre Pvt. Ltd

Session Co-Organizer: **Quamber Nagpurwala**, Retd. MSRUAS

Turbomachinery-Based Vapor Pressure Amplifier for Refrigeration Energy Saving

Technical Publication. GTIndia2017-4540

Leila Chennaoui, Roma Tre University, **Giovanni Cerri**, Roma Tre University - Department of Engineering, **Sayed Benyamin Alavi**, Roma Tre University

Optimization of FLADE Variable Cycle Engine Performance Based on Improved Differential Evolution Algorithm

Technical Publication. GTIndia2017-4771

Xiaobo Zhang, Zhanxue Wang, Northwestern Polytechnical University

Impact of Inlet Fogging on the Performance of Steam Injected Cooled Gas Turbine based Combined Cycle Power Plant

Technical Publication. GTIndia2017-4557

Anoop Shukla, Amity University Uttar Pradesh, **Onkar Singh**, Madan Mohan Malaviya University of Technology Gorakhpur

Gas turbine inlet air cooling using vapor-adsorption refrigeration driven by power plant exhaust

Technical Publication. GTIndia2017-4525

Varuneswara Reddy Panyam, DEVENDRA DANDOTIYA, Nitin Banker, Shiv Nadar University

A Study on Performance of Aero-Engine with Fluidic Thrust Vector Nozzle

Technical Publication. GTIndia2017-4743

Xiaobo Zhang, Zhanxue Wang, Jingwei Shi, Northwestern Polytechnical University

Methods to Reduce Hot Return Condensate Temperature without Compromising on Plant Efficiency for Combined Heat and Power Plant

Technical Publication. GTIndia2017-4811

Anil Kumar Addanky, Black & Veatch



Track 5 Structures and Dynamics

Track Organizer: **Ramesh T.C.**, *QuEST Global*

5-1 COMPRESSORS & TURBINES – 1 * Grand Ballroom I

8:00am - 11:00am

Session Organizer: **Murugesan Seerangan**, *GE India Technology Center*

Session Co-Organizer: **Baskaran Bhuvanaraghan**, *GE Power*

Identification and avoidance of impeller resonance from Impeller Interference diagram (SAFE diagram) for an open impeller in an integrally geared centrifugal air compressor

Technical Publication. GTIndia2017-4599

Raghavendra Rajendrababu Bejgam, *ELGI Equipments*,
Mathew Pazhathara James, *ELGI Equipments Ltd*

Structural Design and Analysis of Cylindrical Squirrel Cage to meet Stiffness, Strength and High Cycle Fatigue Life for an Aero Engine

Technical Publication. GTIndia2017-4696

Senthil Kumar K.S., *Gas Turbine Research Establishment*,
Nazar P, *GTRE*

Vortex Induced Vibrations Of rotating Blade

Technical Publication. GTIndia2017-4709

Lokanna Hoskoti, *Ajay Misra*, *Department of Aerospace Engineering, Defence Institute of Advanced Technology*,
Mahesh M S, *Department of Mechanical and Aerospace Engineering, Indian Institute of Technology*

Structural Dynamic Behavior of Axial Compressor Rotor

Technical Publication. GTIndia2017-4715

Satish Kumar S, *CSIR-NAL*, *Ranjan Ganguli*, *S B Kandagal*, *Indian Institute Of Science*, *Soumendu Jana*,
National Aerospace Laboratories

A Study on the Nonlinear Dynamic Characteristics of Gas Turbine Engine Components

Technical Publication. GTIndia2017-4733

Narayana Murty Pilli, *Kondaiah Bommisetty*,
Lakshman Kasina, *Kotur Raghavan*, *Sreenivas karri*,
Cyient Limited



Session Organizer: **Chaitanya Srinivas**, *Rolls Royce India Pvt Ltd*

Session Co-Organizer: **J Srinivasan**, *QuEST Global*

Parametric Evaluation on the Response of Damaged Simple Supported Structure under Transit Mass

Technical Publication. GTIndia2017-4537

SHAKTI JENA, B Subbaratnam, *Vardhaman College of Engineering, Dayal R. Parhi, N.I.T. Rourkela,*

Effect of Pressure Ratio on Bending Mode Flutter in a Transonic Linear Cascade

Technical Publication. GTIndia2017-4569

Prahallada Jutur, Raghuraman N Govardhan, *Indian Institute of Science*

Dynamics Of Cracked Viscoelastic Beam An Operator Based Finite Element Approach

Technical Publication. GTIndia2017-4616

KRISHANU GANGULY, PRADEEP NAHAK, HARAPRASAD ROY, *NATIONAL INSTITUTE OF TECHNOLOGY*

A Variable Viscosity Approach for the Analysis of Steady State and Dynamic Characteristics of Two Lobe Journal Bearing with TiO2 Based Nanolubricant

Technical Publication. GTIndia2017-4646

Ashutosh Kumar, *Indian Institute of Technology Guwahati, Kakoty SK, IIT*

Natural Frequencies Of Pre-Twisted Airfoil Blades

Technical Publication. GTIndia2017-4722

NEERAJ KAVAN CHAKSHU, PES UNIVERSITY, SUNIL K. SINHA, *THE OHIO STATE UNIVERSITY*

Sub Modeling in Dynamic Analysis

Technical Publication. GTIndia2017-4837

Gnanaraj Devadoss, Prasanth Kumar Bysani, *Honeywell Technology Solutions, Anil Thokala, Avinash Kumar*, *Honeywell Technology pvt ltd*



Session Organizer: **K Shivananda**, *QuEST Global*

Session Co-Organizer: **Satishkumar Tiwari**, *QuEST Global Engg Pvt Ltd.*

Simulation Study of Transient Responses of Laminated Composite Sandwich Plate

Technical Publication. GTIndia2017-4846

Pankaj Katariya, **Subrata Kumar Panda**, *National Institute of Technology Rourkela*

Force estimation in an electromagnetic system using Kalman Filter

Technical Publication. GTIndia2017-4621

Rahul Redekar, **Gaurav Kumar**, *IIT Guwahati*, **Karuna Kalita**, *Indian Institute of Technology Guwahati*, **Kari Tammi**, *Aalto University*

Prediction of Failure Loads For Threaded Fasteners Under Combined Loading Using Finite Element Analysis

Technical Publication. GTIndia2017-4703

Anoop Moodambail, *Honeywell Technology Solutions*,

Remo Neri, *Honeywell International Inc*, **Srinivasan V**, **Premanjan Sethy**, **Prasanth Kumar Bysani**, *Honeywell Technology Solutions*

Comparative Studies on the dynamic performances of high speed turbocharger rotor supported on Oil-free bearings versus conventional floating ring systems

Technical Publication. GTIndia2017-4734

RAJASEKHARA REDDY MUTRA, **Srinivas J**, *NATIONAL INSTITUTE OF TECHNOLOGY (NIT)*

Analysis of Infinitely Short and Infinitely Long Hydrodynamic Journal Bearings under Micro-polar Fluid by Direct Integration Method

Technical Publication. GTIndia2017-4852

Bikash Routh, *VIT University-Vellore*



Track 6 Renewable Energy (Solar, Wind)

Track Organizer: **Jitendra Bijlani**, LM Wind Power

6-2 RENEWABLE ENERGY - II (WIND SYSTEM DESIGN, NON-WIND RENEWABLE ENERGY)

* Jupiter 2 *

8:00am - 11:00am

Session Organizer: **Sudipta De**, Jadavpur University

Session Co-Organizer: **Jitendra Bijlani**, LM Wind Power

Strength of Shear Web with Circular Hole in Wind Turbine Blades and Using Digital Twinning Concept to Reduce Material Testing

Technical Publication. GTIndia2017-4603

Anil K. Sahoo, Utsa Majumder, Michael W. Nielsen, Jesper H. Garm, LM Wind Power Technologies

Parametric Studies of Vortex Generators by Source Term Modelling

Technical Publication. GTIndia2017-4645

Arun Kumar KT, Sudhakar Piragalathalwar, LM Wind Power Technologies(India) Pvt Ltd, **Jesper Madsen**, LM Wind Power, **Aswatha Narayana**, IIAEM,

Flow Insights Into The Serrated Wind Turbine Blade Section

Technical Publication. GTIndia2017-4861

Hitesh Nanda, SE Blades, Suzlon Energy

Energy and exergy investigations upon tri-generation based combined cooling, heating, and power (CCHP) system for community applications

Technical Publication. GTIndia2017-4559

Meeta Sharma, Amity University Uttar Pradesh, **Onkar Singh**, Harcourt Butler Technical University

In-situ Experiments to Estimate the Performance Characteristics of a Double-step Helical-bladed Hydrokinetic Turbine

Technical Publication. GTIndia2017-4572

Parag K. Talukdar, Vinayak Kulkarni, Amarendra K. Das, Santosha K. Dwivedy, Indian Institute of Technology Guwahati, **Kakoty SK**, IIT, **Pinakeswar Mahanta, Ujjwal K. Saha**, Indian Institute of Technology Guwahati

Numerical Analysis of Direct Type Greenhouse Dryer

Technical Publication. GTIndia2017-4784

Vishal Gupta, Radharaman Engineering College, **Abhishek Sharma**, Amity School of Engineering & Technology, Amity University Gwalior, **Khushboo Gupta**, M.A. National Institute of Technology



Track 14 Panel Discussions

14-1 GT PANEL DISCUSSION ON FUTURE GAS TURBINE TECHNOLOGIES

* Grand Ballroom I & II *

11:30am - 1:00pm

Session Organizer: **Ravikanth Avancha**, *GE Aviation*

Session Co-Organizer: **Sasikumar Muthusamy**, *Rolls-Royce*

GT Panel Discussion on Future Gas Turbine Technologies

Panel. GTIndia2017-4947

Frank Haselbach, *Rolls-Royce plc*

Panel. GTIndia2017-4949

B. N. Raghunandan, *Indian Institute of Science*

Panel. GTIndia2017-4957

Mukul Saxena, *Siemens Corporate Technology Research*

Panel. GTIndia2017-4948

Alok Nanda, *GE India Technology Centre/GE Aviation*

Panel. GTIndia2017-4957

Mukul Saxena, *Siemens Corporate Technology Research*

Track 1 Compressors, Fans and Pumps

Track Organizer: **Pradeep A M**, *Indian Institute of Technology*

1-1 AXIAL COMPRESSORS I: SESSION A * Neptune

2:00pm - 3:30pm

Session Organizer: **Ajay Rao**, *GE*

Session Co-Organizer: **Dilipkumar Bhanudasji Alone**, *CSIR-NAL*

Axial Compressor Rotor Optimization Using a Novel Ensemble of Surrogates-based Infill Criterion

Technical Publication. GTIndia2017-4516

Jan Kamenik, **Michele Stramacchia**, **David J. J. Toal**, **Andy J. Keane**, *University of Southampton*, **Ron Bates**, *Rolls-Royce plc*,

Aeroelastic Flutter Investigation And Stability Enhancement Of A Transonic Axial Compressor Rotor Using Casing Treatment

Technical Publication. GTIndia2017-4767

Kirubakaran P, **Sankarkumar J**, **Ajay Pratap**, **Kishore Prasad D**, *Gas Turbine Research Establishment*



Track 2 Turbines

Track Organizer: **Ujjwal K. Saha**, *Indian Institute of Technology Guwahati*

2-3 METHODS AND TOOLS I * Jupiter 1

2:00pm - 3:30pm

Session Organizer: **Vishnuvardhan Tatiparthi**, *GE India Technology Centre Private Limited*

Session Co-Organizer: **O.N Ramesh**, *Indian Institute of Science*

Development Of Turbine Blade Profiles Using Iterative Inverse Design Methodology

Technical Publication. GTIndia2017-4553

Nanthini Rajendran, YV S Sanyasiraju, Indian Institute of Technology, BHAMIDI V S S PRASAD, IIT MADRAS

Direct Off-Design Performance Prediction of Micro Gas Turbine Engine for Distributed Power Generation

Technical Publication. GTIndia2017-4617

Maksym Burlaka, Valentyn Barannik, Leonid Moroz, SoftInWay Inc, Abdul Nassar, SoftInWay Turbomachinery Solutions Pvt. Ltd.

Adjoint Optimisation of Internal Turbine Cooling Channel Using NURBS-Based Automatic and Adaptive Parametrisation Method.

Technical Publication. GTIndia2017-4669

REJISH JESUDASAN, Xingchen Zhang, Jens-Dominik Müller, QUEEN MARY UNIVERSITY OF LONDON

Track 3 Heat Transfer

Track Organizer: **BHAMIDI V S S PRASAD**, *IIT MADRAS*

3-2 MID ZONE COOLING I * Jupiter 2

2:00pm - 3:30pm

Session Organizer: **Subrata Sarkar**, *Indian Institute of Technology Kanpur*

Session Co-Organizer: **Karthik Srinivasan**, *Rolls-Royce India Private Limited*

Experimental and Numerical Study of Heat Transfer and Pressure Drop in Entry Length of Square Channel with Irregular Spacing of the Ribs

Technical Publication. GTIndia2017-4522

Mohammad Ansari, Majid Bazargan, K. N. Toosi University of Technology

Experiment investigation on the effect of turbulent intensity on heat transfer in a square rotating channel

Technical Publication. GTIndia2017-4633

Ruquan You, Haiwang Li, Zhi Tao, BeiHang University

Experimental study of detailed heat transfer and fluid flow characteristics in a rectangular duct with solid and slitted Pentagonal ribs

Technical Publication. GTIndia2017-4651

Naveen Sharma, Andallib Tariq, Manish Mishra, IIT Roorkee

TRACK 4 Combustion, fuels and emissions

Track Organizer: **Satyanarayanan Chakravarthy**, *IIT Madras*



4-2 * MODELLING AND SIMULATIONS I * Bene

2:00pm - 3:30pm

Session Organizer: **Jayanth Sekar**, GE

Session Co-Organizer: **M. S. Anand**, Rolls-Royce

Unsteady Computational Analysis of Kerosene jet in Cross stream air flow using VOF methodology

Technical Publication. GTIndia2017-4655

Muthuselvan G, National aerospace laboratories,
Muralidhara HS, NAL, **Prateekkumar Kotegar**, **Sonali Gupta**, VTU, **Sanjay shankar**, **Manoja Deekshith**,
Suhruth Mourya, **Akshaya kumar**, NAL

CFD Analyses of Flow in a Gas Turbine Combustor Swirl Cup

Technical Publication. GTIndia2017-4725

Srinivasan K, Gas Turbine Research Establishment,
Mehul Bhirud, The Maharaja Sayajirao University of

Baroda, **Gullapalli Sivaramakrishna**, Gas Turbine Research Establishment, DRDO, **Raju D Navindgi**, **N Muthuveerappan**, Gas Turbine Research Establishment, Defence Research and Development Organization

A Comparison of Different Mesh Topology for Numerical Analysis of a Turbulent Liquid Jet in Cross Flow using Multi-Model Hybrid Approach

Technical Publication. GTIndia2017-4732

Rohitkumar Sonawane, **Vivek Kumar**, **Pravin Nakod**, ANSYS Inc

Track 5 Structures and Dynamics

Track Organizer: **Ramesh T.C.**, QuEST Global

5-2 COMPRESSORS & TURBINES - 2A * Grand Ballroom I

2:00pm - 3:30pm

Session Organizer: **Baskaran Bhuvanaraghan**, GE Power

Session Co-Organizer: **Murugesan Seerangan**, GE India Technology Center

Flutter Alleviation by Aeroelastic Tailoring of a Transonic Rotor Blade

Technical Publication. GTIndia2017-4662

Sankarkumar J, **Kirubakaran Purushothaman**, **Ramaraja Bhat**, **Kishore Prasad D**, Gas Turbine Research Establishment

Joseph Shibu K, AERDC, HAL, **Ch KANNA BABU**, AERDC, HINDUSTAN AERONAUTICS LIMITED, **Girish K Degaonkar**, AERDC, HAL, **K Shankar**, IITM

Blade Fatigue Life Assessment of a Axial Compressor Rotor through Probabilistic Method

Technical Publication. GTIndia2017-4727

S. Esakki Muthu, HINDUSTAN AERONAUTICS LIMITED, **Raghu V Prakash**, Indian Institute of Technology Madras, **Shakthivel Ammaiaappan**, RCMA(H/C), CEMILAC

Multi-objective Optimisation of an Aero Engine Rotor System using Nondominated Sorting Genetic Algorithm (NSGA)

Technical Publication. GTIndia2017-4681



Session Organizer: **Parag Ravindran**, *Indian Institute of Technology Madras*

Session Co-Organizer: **Ramesh T.C.**, *QuEST Global*

A compliant algorithm to diagnose multiple centrifugal pump faults with corrupted vibration and current signatures in time-domain

Technical Publication. GTIndia2017-4615

Janani Shruti Rapur, Rajiv Tiwari, *Indian Institute of Technology Guwahati*

Characteristic Parameter Estimation of AMB Supported Coupled Rotor System

Technical Publication. GTIndia2017-4641

SAMPATH KUMAR KUPPA, MOHITLAL, *National Institute of Technology Rourkela*

A Comparison of two Reduced Order Methods for Probabilistic Mistuning Investigations

Technical Publication. GTIndia2017-4684

Christian U. Waldherr, Damian Vogt, *University of Stuttgart*

Track 1 Compressors, Fans and Pumps

Track Organizer: **Pradeep A M**, *Indian Institute of Technology*

1-1 AXIAL COMPRESSORS I: SESSION B * Neptune

Session Organizer: **Ajay Rao**, *GE*

Session Co-Organizer: **Dilipkumar Bhanudasji Alone**, *CSIR-NAL*

Effect of Rotor Tip Winglet on the Performance and Stability of a Transonic Axial Compressor Stage

Technical Publication. GTIndia2017-4686

SUBBARAMU SHIVARAMAIAH, Mahesh K. Varpe, Hunsur Krishnamurthy Narahari, *Ramaiah university of Applied Sciences, Quamber Nagpurwala, Retd. MSRUAS,*

Aeroelastic Flutter Analysis Of Linear Cascade Blades

Technical Publication. GTIndia2017-4773

Kirubakaran P, Sankarkumar J, Sasikanta Parida, Kishore Prasad D, *Gas Turbine Research Establishment, Gas Turbine Research Establishment*

DRAFT: LARGE EDDY SIMULATION OF A COMPRESSOR STAGE

Technical Publication. GTIndia2017-4849

PRANAB MONDAL, Joseph Mathew, *INDIAN INSTITUTE OF SCIENCE*



Track 2 Turbines

Track Organizer: **Ujjwal K. Saha**, *Indian Institute of Technology Guwahati*

2-3 METHODS AND TOOLS II * Jupiter 1

4:00pm - 5:30pm

Session Organizer: **Vishnuvardhan Tatiparthi**, *GE India Technology Centre Private Limited*

Session Co-Organizer: **O.N Ramesh**, *Indian Institute of Science*

Increase of Efficiency of Axial Uncooled Turbine by Optimization of Its Blades Shape using CFD and Optimization Software

Technical Publication. GTIndia2017-4766

Evgeny Yu. Marchukov, Igor Egorov, *Lyulka Design Bureau*, **Grigorii Popov, Evgenii Goriachkin, Yulia Novikova, Daria Kolmakova, Vasili Zubanov**, *Samara National Research University*

Reduction of Secondary Flow Losses in Transonic Nozzle Guide Vane through Axisymmetric Endwall Profile Optimization

Technical Publication. GTIndia2017-4644

Ananthkrishnan K, *Indian Institute of Technology*, **Govardhan M**, *Mechanical Engineering Department*

Track 3 Heat Transfer

Track Organizer: **BHAMIDI V S S PRASAD**, *IIT MADRAS*

3-2 MID ZONE COOLING II * Jupiter 2

4:00pm - 5:30pm

Session Organizer: **Subrata Sarkar**, *Indian Institute of Technology Kanpur*

Session Co-Organizer: **Karthik Srinivasan**, *Rolls-Royce India Private Limited*

Performance optimization of trapezium rib parameters using response surface methodology

Technical Publication. GTIndia2017-4881

Naveen Sharma, Vaibhav Sharma, Andallib Tariq, *IIT Roorkee*

Numerical Analysis of Jet Impingement Cooling using Converging Conical Hole for Blade Leading Edge

Technical Publication. GTIndia2017-4632

Seralathan Sivamani, Chaina Ram, Micha Premkumar T, Hariram V, *Hindustan Institute of Technology and Science*



Track 4 Combustion, fuels and emissions

Track Organizer: **Satyanarayanan Chakravarthy**, *IIT Madras*

4-2 MODELLING AND SIMULATIONS II * Bene

4:00pm - 5:30pm

Session Organizer: **Jayanth Sekar**, *GE*

Session Co-Organizer: **M. S. Anand**, *Rolls-Royce*

Atomization Characteristics Of Jatropa-Derived Alternative Aviation Fuels From Aircraft Engine Injector

Technical Publication. GTIndia2017-4882

SAKTHIKUMAR RAMACHANDRAN, *Sivakumar Deivandren*, *B N Raghunandan*, *Indian Institute of Science*, *J T C Hu*, *Pratt & Whitney Canada*

Preliminary CFD Study On The Effect Of Fuel Injector Coking On Fuel Spray Charecteristics

Technical Publication. GTIndia2017-4838

Parash Agarwal, **Vishal Sethi**, **Xiaoxiao Sun**, **Yize Liu**, *Cranfield University*, **Pierre Q. Gauthier**, *Siemens*

Prediction Of Gas Turbine Afterburner Performance Using Cfd For Different Operating Conditions And Reheat Strength

Technical Publication. GTIndia2017-4631

Darshan K S, **Purushothama H R**, *Siddaganga Institute of Technology*, **Ganesan S**, **Gursharanjit Singh**, *GTRE, DRDO*

Track 5 Structures and Dynamics

Track Organizer: **Ramesh T.C.**, *QuEST Global*

5-2 COMPRESSORS & TURBINES - 2B * Grand Ballroom I

4:00pm - 5:30pm

Session Organizer: **Baskaran Bhuvaraghan**, *GE Power*

Session Co-Organizer: **Murugesan Seerangan**, *GE India Technology Center*

A Study on Multiple Techniques to Simulate Blade out Event

Technical Publication. GTIndia2017-4735

Koti Satish Ramanadham, **Lakshman Kasina**, **Kondaiah Bommisetty**, **Kotur Raghavan**, *CYIENT LTD*

APPLICATION OF COLD EXPANSION PROCESS TO DOVETAIL SLOTS OF A COMPRESSOR DISC- A NUMERICAL STUDY

Technical Publication. GTIndia2017-4761

ANIL KUMAR S, **MAHENDRA BABU N C**, **M S RAMAIAH**, *UNIVERSITY OF APPLIED SCIENCES*

MULTIPLE LOW VELOCITY IMPACT ON TWISTED COMPOSITE STIFFENED BLADE-A FINITE ELEMENT APPROACH

Technical Publication. GTIndia2017-4772

Mrutyunjay Rout, *Jadavpur University*, **Sasank Shekhar Hota**, *DRIEMS, Cuttack*, **Amit Karmakar**, *Jadavpur University*,



Session Organizer: **Parag Ravindran**, *Indian Institute of Technology Madras*

Session Co-Organizer: **Ramesh T.C.**, *QuEST Global*

Analysis of Time, Frequency and Wavelet based Features of Vibration and Current Signals for Multiple Fault Diagnosis of Induction Motors using Support Vector Machine Algorithms

Technical Publication. GTIndia2017-4774

Purushottam Gangsar, Rajiv Tiwari, *Indian Institute of Technology Guwahati*

Dynamic Analysis of Active Vibration Absorber by Time Delay Acceleration Feedback Using Higher Order Method of Multiple Scales

Technical Publication. GTIndia2017-4850

SIBANANDA MOHANTY, Santosha K. Dwivedy, *Indian Institute of Technology Guwahati*

Probabilistic Design and Analysis of Pressure Measuring Probes for Creep Behavior

Technical Publication. GTIndia2017-4906

Dattatraya Parle, *Infosys Limited*



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We look forward to seeing you at future ASME Conferences and Events.



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