Presented by the ASME International Gas Turbine Institute

ASME 2015
Gas Turbine India Conference
December 2-3, 2015

Hyderabad International Convention Center
Hyderabad, India

FINAL PROGRAM

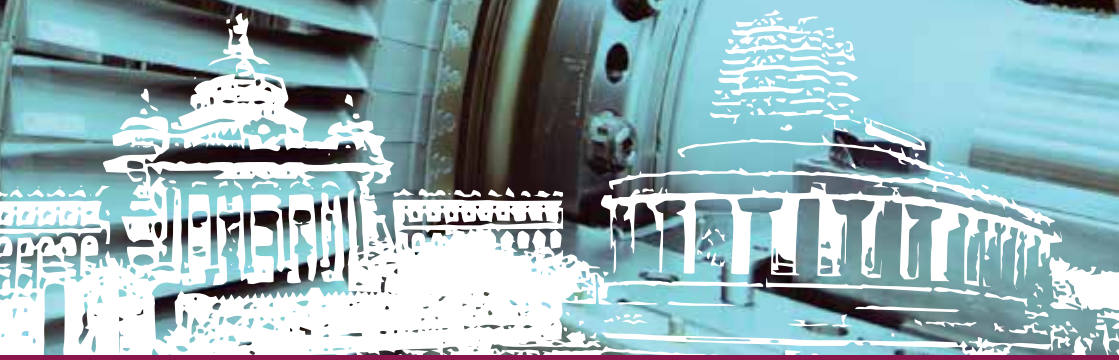
Be sure to join the ASME Gas Turbine India Group online go.asme.org/IGTI and ask questions, exchange knowledge with some of the leaders in the industry and make plans to attend Gas Turbine India 2017.

5th ASME Gas Turbine India Conference

Presented by the ASME International Gas Turbine Institute

ASME 2017

GAS TURBINE INDIA CONFERENCE



DECEMBER 2017 | BANGALORE

ASME INTERNATIONAL GAS TURBINE INSTITUTE

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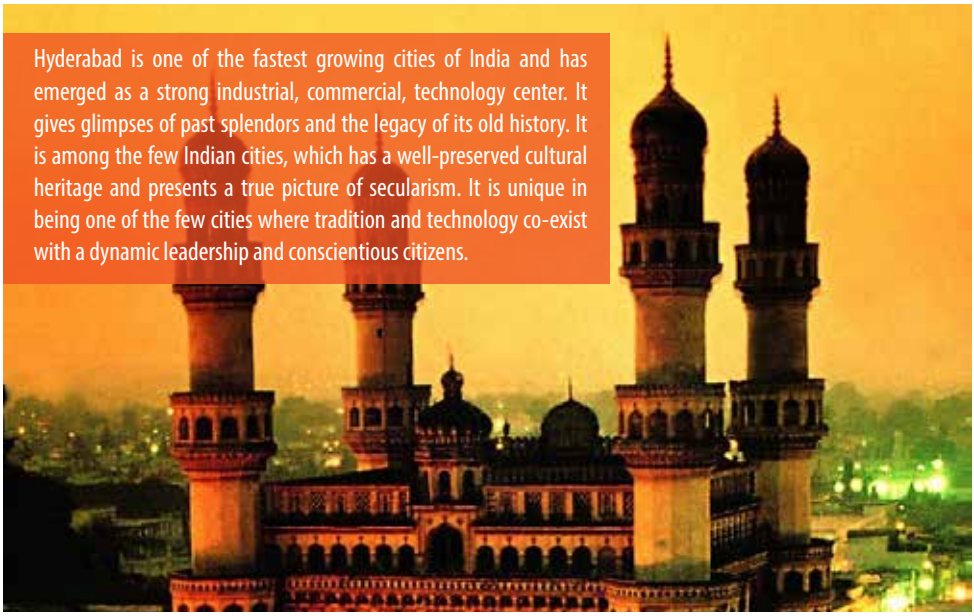
Welcome to HYDERABAD!



Hyderabad is one of the fastest growing cities of India and has emerged as a strong industrial, commercial, technology center. It gives glimpses of past splendors and the legacy of its old history. It is among the few Indian cities, which has a well-preserved cultural heritage and presents a true picture of secularism. It is unique in being one of the few cities where tradition and technology co-exist with a dynamic leadership and conscientious citizens.

Table of Contents

ASME 2015 Gas Turbine

India Conference

Address:

Hyderabad International Convention Centre
Novotel & HICC Complex
Izzat Nagar, Kothaguda
Hyderabad, Telangana 500081
India

Message from the Conference Chair

Distinguished Delegates to the ASME 2015 Gas Turbine India Conference

Prof. B. V.S.S. Prasad
Conference Chair
ASME Gas Turbine
India Conference 2015

On behalf of the ASME International Gas Turbine Institute, I take pleasure in welcoming you to the ASME 2015 Gas Turbine India Conference. This conference, fourth in series, has succeeded once again in bringing together the gas turbine professionals and enthusiasts in India who are working in industry, academia, and government. They present, participate and discuss the latest developments in gas turbine technology and establish a strong network in this important area. We expect that the knowledge of experts is shared while young budding professionals hone their skills during the conference. We welcome participation from around the world and hope that the GT India Conference shall become known as a complement to the annual ASME Turbo Expo conference.

Hyderabad is known internationally for its historical past, its richness of an exciting blend of antiquity and modernity, and a hub for traditional manufacturing as well as IT Industries, national scientific laboratories and testing centers. It is home to design and development centers of several multinational businesses engaged in gas turbine and allied technologies. As all these organizations and activities are well-represented in this conference, I expect your participation will prove to be a most rewarding experience.

There are 11 tracks this year: Compressors, Turbines, Combustion, Fuels & Emissions, Heat Transfer, Structure & Dynamics, Controls, Diagnostics & Instrumentation, Manufacturing, Materials & Metallurgy, GT Operation & Maintenance, Combined Cycles, Steam Generation & Steam Turbines, Industrial, Mechanical Drives & Co-generation and GT Cycle In-novations & Renewable applications. Over 70 technical papers that have been subjected to careful review by a broad range of experts worldwide will be presented. Keynote and panel presentations will provide summaries of accomplishments and thoughts to engage us for the future. Tutorial sessions are likely to attract younger participants to learn from the experts. The exhibits showcase some of the product developments. We hope the scheduling will facilitate the best networking opportunities for all participants from industry, academia, and government. Further, I hope that the Hyderabad International Convention Centre (HICC) will provide the right ambience for this conference.

Finally, on behalf of the ASME International Gas Turbine Institute, we thank all who have supported the GT India conference through generous sponsorships. This event would not be possible without the hundreds of hours spent by the experts from academia and industry who served as reviewers, session organizers, and vanguard chairs, coordinated by Prof. Joseph Mathew, the Review Chair. Dr. N. K. Singh from BHEL has been resourceful as Technical Program Chair. Our sincere thanks to ASME GT India Group Chair, Mr. Joseph Machnaim from GE and Prof. Bhaskar Roy from IITM for their support and guidance. Finally, much appreciation goes to the IGTI staff who have put everything together in a seamless way.

I look forward to your enthusiastic participation to create a bright future for this very important topic of gas turbine engineering and technology that influences the business in land, sea and air.

Sponsors

Platinum

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Exhibitors

Exhibition Venue: MR G.05 - G.06
Time: 10:00 AM – 02:00 PM


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Schedule at a Glance

Wednesday, December 2, 2015

Registration	8:00 am – 5:00 pm
Inauguration & Keynote Address: Om Sharma, "Unsteady Flows in Turbomachines"	9:00 am – 10:30 am
Exhibit Hall Open	10:00 am – 2:00 pm
Coffee Break & Networking	10:30 am – 11:00 am
Panel Session: "Advances in Wind Turbine Technology"	11:00 am – 12:30 pm
Technical Sessions	11:00 am – 12:30 pm
Lunch & Networking	12:30 pm – 2:00 pm
Student Posters	1:30 pm – 2:00 pm
Technical Sessions	2:00 pm – 3:30 pm
Coffee Break & Networking	3:30 pm – 4:00 pm
Technical Sessions	4:00 pm – 6:30 pm
Conference Gala Dinner	6:00 pm – 8:30 pm

Thursday, December 3, 2015

Registration	8:00 am – 5:00 pm
Technical Sessions	8:30 am – 10:30 am
Keynote Address: Conrad Banks, "Integration: The Key to Success in Defence Programmes"	9:30 am – 10:30 am
Exhibit Hall Open	10:00 am – 2:00 pm
Coffee Break & Networking	10:30 am – 11:00 am
Panel Session: "Advances in Aircraft Engine & Future Propulsion"	11:00 am – 12:30 pm
Panel Session: "Additive Approaches to Manufacturing"	11:00 am – 12:30 pm
Technical Sessions	11:00 am – 12:30 pm
Lunch & Networking	12:30 pm – 2:00 pm
Student Posters	1:30 pm – 2:00 pm
Technical Sessions	2:00 pm – 4:30 pm
Closing Coffee Break & Networking	4:30 pm – 4:45 pm

Schedule subject to change


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Inauguration Speaker

Wednesday, December 2, 2015 | 9:00 am – 10:30 am
Hall 1, Ground Floor, Hyderabad International Convention Centre

Seung Jin Song
Professor of Mechanical and Aerospace Engineering
Seoul National University

Seung Jin Song is Chair of Mechanical Engineering at Seoul National University in Seoul, Korea. A Korean citizen, he did his undergraduate studies in Mechanical Engineering and Materials Science at Duke University and his graduate studies in Aeronautics and Astronautics at MIT. He has held visiting professorships at the Federal Institute of Technology in Zurich, Switzerland, and Karlsruhe Institute of Technology in Karlsruhe, Germany.

His research interests include aerodynamics and rotordynamics of turbomachinery. He has received Best Paper Awards from the Turbomachinery Committee and the Structures and Dynamics Committee of International Gas Turbine Institute (IGTI) as well as the Melville Medal from the American Society of Mechanical Engineers (ASME).

Keynote Speaker

Wednesday, December 2, 2015 | 9:00 am – 10:30 am
Hall 1, Ground Floor, Hyderabad International Convention Centre

Om Sharma
Senior Research Fellow, United Technologies Research Center (UTRC)
"Unsteady Flows in Turbomachines"

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.

Keynote Speaker

Thursday, December 3, 2015 | 9:30 am – 10:30 am
Hall 1, Ground Floor, Hyderabad International Convention Centre

Conrad Banks
Chief Engineer, Rolls Royce plc
"Integration: The Key to Success in Defence Programmes"

Conrad Banks is the Chief Engineer – Defence Future Programmes and R&T for the Aerospace division of Rolls-Royce plc. In this role he is responsible for identifying and delivering new propulsion system concepts to meet the future military aerospace market requirements. These include military platforms across all sectors of manned, UAV and helicopter propulsion. He is also responsible for the technology insertion programmes of key Rolls-Royce development and production programmes, especially JSF and EJ200.

His early career was spent developing his core skills in Engine Performance and Controls, having graduated with a BEng in Aeronautical Engineering from Bristol University. Conrad has worked at Rolls-Royce for 27 years and been based in the UK throughout. Prior to his current role Conrad was the Assistant Chief Engineer of the BR710 re-engining programme for the Nimrod MRA4, which followed appointments as the Chief Performance and Controls Engineer on the Pegasus (Harrier) and EJ200 (Typhoon) projects.

Conrad is a Chartered Engineer and a Fellow of the Royal Aeronautical Engineering society. He is an active member of the society and since 2005 has been the Chairman for the Bristol Branch. In 2013 he was part of the winning ASTRAEA UAV consortium that was awarded the prestigious Royal Aeronautical Society Team Silver Medal. For the last 7 years he has also led the propulsion team for the highly successful and advanced Taranis Unmanned Combat Aircraft.

Dinner Event

Wednesday, December 2, 2015 | 6:00 pm – 8:30 pm (Novotel Lawns)

All conference attendees are welcome to attend the Awards Dinner

Conference Leadership Team		
Conference Chair	**Technical Program Chair**	**Review Chair**
Prof. B V S S S Prasad Indian Institute of Technology-Madras, Chennai, India	**Dr. N K Singh** BHEL Corporate R&D, Hyderabad, India	**Prof. Joseph Mathew** Indian Institute of of Science Bangalore, India

Vanguard Chairs

Subhrajit Dey
GE Global Research

Ravikanth Avancha
GE Aviation

Satyanarayanan Chakravarthy
Indian Institute of Technology Madras

Subrata Sarkar
Indian Institute of Technology Kanpur

Chandramou Padmanabhan
Indian Institute of Technology Madras

Ravi YB
GE Global Research Center

Raghavendra Adharapurapu
GE India Technology Centre

Hemant Gajjar
Torrent Power Ltd

Dhinagaran Ramachandran
iCube Technology

Bhaskar Roy
Indian Institute of Technology Bombay

Joseph Mathew
Indian Institute of Science

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Panel Session

Advances in Wind Turbine Technology

Wednesday, December 2, 2015 | 11:00 am-12:30 pm (Hall 1-2)

This session will cover advances in Wind turbine technology space and its relevance to India. Technologies as applied to Wind generators, Rotors, Materials, Controls, Structure etc. will be covered. Current progress in Wind Energy market and how turbine technology is evolving to cater such needs will be discussed.

Panelists

Jitendra Bijlani
Director,
Technology Center India
LM Wind Power,
Bangalore

Dr. S Gomathinayagam
Director General,
National Institute of Wind Energy, Chennai

Anil Rajanna
Executive – Renewables Engineering,
GE Energy, Bangalore

Vidyadhar Tagade
Director Technology – Power Plant Operations,
Vestas Asia Pacific,
Chennai

Panel Session

Advances in Aircraft Engine & Future Propulsion

Thursday, December 3, 2015 | 11:00 am-12:30 pm (Hall 1-2)

The demand for aircraft engines is ever increasing for developing countries like India, both for military and commercial operations. There is already a huge backlog of orders ordered by Airlines around the world. The overall objective of the panel is to discuss / provide general information on the engines being developed for both the immediate need and the future. There are a whole suite of technologies in development from high temperature materials to infusing digital technologies. The session intends to enlighten the thought process of the future engineer.

Panelists

Phil Curnock
Chief Engineer,
Civil Large Engines Future Programmes,
Rolls Royce plc

Vaman Kulkarni
Director,
Aero Mechanical
Honeywell Technology Solutions India Pvt. Ltd.,
Bangalore

Mani Subramanian
Vice President,
Aero & Fluid Systems Technology,
QuEST Global

Dr. Asim K. Ghosal
Consulting Engineer,
GE Aviation, John F Welch Technology Center
Bangalore, INDIA

Om Sharma
Senior Research Fellow,
United Technologies Research Center (UTRC)

Panel Session

Additive Approaches to Manufacturing

Thursday, December 3, 2015 | 11:00 am-12:30 pm (MR 1.05 - MR 1.06)

This session will cover various 'additive' approaches to manufacturing compared to the traditional manufacturing based on material removal. Additive manufacturing using laser processes, rapid solidification encountered during laser manufacturing, cold spray technologies and thermal spray coatings will be covered in this session.

Panelists

Eklavya Calla
Senior Technologist,
GE Power and Water

Janaki Ram Gabbita
Associate Professor,
Dept. of Metallurgical &
Materials Engineering,
IIT Madras

Phanikumar Gandham
Professor,
Dept. of Metallurgical &
Materials Engineering,
IIT Madras

Anand K
Manager,
GE Power and Water

COMM 11 Poster Session

1:30 pm-2:00 pm (MR G.05 - MR G.06)

Paper Number	Title	Author	Affiliation
GTINDIA2015-1407	Green machining of high aspect ratio holes in gas turbine construction material using magneto-EDM process	Vijay Kumar Singh	DIT University
GTINDIA2015-1408	Numerical Simulation of Multi-Relaxation-Time Lattice Boltzmann method in Rolling Operation of Rectangular Bar	D. Arumuga Perumal	NIT Karnataka
GTINDIA2015-1412	A Novel Spherical Swirl Combustor Coupled With A Re-Heater Designed ,Fabricated And Cold Flow Tested For Gas Turbines And Rocket Engines To Enhance Rate Of Combustion	Kevin Thomas Kuttothara	Karunya University
GTINDIA2015-1414	The Study on the Performance of the Gas Turbine for Power Generation	Periasamy Ramajayam	JCB India Limited
GTINDIA2015-1415	Fuel Cell/Gas Turbine Hybrid Systems	Periasamy Ramajayam	JCB India Limited
GTINDIA2015-1419	A Computational Study of Buried Pipelines Subjected to Internal and External Pressure	Raj Kiran	MNNIT Allahabad
GTINDIA2015-1420	Experimental insight into the effect of sound intensity on Diffusion flames	Vinayak Malhotra	SRM University
GTINDIA2015-1421	Utilization of meshes and sound in preventing aircraft-bird collisions	Vinayak Malhotra	SRM University
GTINDIA2015-1425	Mathematical Analysis of AirFlow Through a Compression Chamber.	Abishek N	SRM University
GTINDIA2015-1426	An experimental study of the residual stresses and their alleviation in tube to tube-sheet welds of industrial boilers	Anurag Jha	INDIAN School of Mines
GTINDIA2015-1428	Schlieren Study of Aerospike Nozzle Flowfield	Andrew Jeyaraj	Karunya University
GTINDIA2015-1429	Triple State Absorption based Cooling System for Aerogenerators	Ankit Dalvi	University of Petroleum and Energy Studies
GTINDIA2015-1431	Characterization of a Non-premixed, Swirl Stabilized, Methane Burner Using Non-intrusive Methods.	Raghu Jarpala	Indian Institute of Space science & Technology
GTINDIA2015-1446	Creep And Fatigue Cycle Analysis of Gas Turbines	S Ram Kumar	SRM University

COMM 14 Keynote Lectures

Track Organizer: **Joseph Mathew,** *Indian Institute of Science, Bangalore, India*

14-1
KEYNOTE 1

Hyderabad, India, Hyderabad International Convention Centre, Hall 1 and 2 9:00am - 10:30am

Unsteady Flows in Turbomachines
Keynote. GTINDIA2015-1433

Om Sharma, *United Technologies Research Center, South Windsor, CT,United States*

COMM 8 GT Operation & Maintenance

Track Organizer: **Hemant Gajjar,** *Torrent Power Ltd, SURAT (Gujarat), India*

8-1
GT OPERABILITY

Hyderabad, India, Hyderabad International Convention Centre, MR G.03 11:00am - 12:00pm

Session Organizer: **Nanjunda Rao,** *GE Global Research, Bangalore, Karnataka, India*

Health Assessment of Gas Turbine Compressor Using Process History Based Modelling Approach
Technical Publication. GTINDIA2015-1240

SHAIJU M.R., NTPC Ltd., *Alleppey, Kerala,India, Arun P., National Institute of Technology Calicut, Calicut (Kozhikode), Kerala, India,* **Jayaraj Simon**, *National Institute of Technology Calicut (Kozhikode), Kerala, India*

Gas Dynamic Designing of Pneumatic Braking System for Gas Turbine Engine Test Bench
Technical Publication. GTINDIA2015-1273

Yulia Novikova, *Grigorii Popov, Evgeniy Gorychkin, SAMARA STATE AEROSPACE UNIVERSITY, Samara, Russia*

COMM 1 Compressors

Track Organizer: **Subhrajit Dey,** *GE Global Research, Bangalore, India*

1-3
METHODS

Hyderabad, India, Hyderabad International Convention Centre, MR G.01 11:00am - 12:30pm

Session Organizer: **QH Nagpurwala,** *M.S. Ramaiah University of Applied Sciences, Bangalore, Karnataka, India*

GAS DYNAMIC DESIGNS OF CENTRIFUGAL COMPRESSORS FOR GAS INDUSTRY SPECIFIC FEATURES
Technical Publication. GTINDIA2015-1215

Yury Galerkin, *Peter the Great St.Petersburg Polytechnic University, St.Petersburg,Russia,* **Alexey Rekstin,** *Peter the Great St.Petersburg Polytechnic University, Saint-Petersburg,Russia,* **Kristina Soldatova,** *Peter the Great St.Petersburg Polytechnic Uni-versity, St. Petersburg,Russia,* **Alexandr Drozdov,** *Peter the Great St. Petersburg Polytechnic University, Saint-Petersburg, Russia*

Assessment of Different Turbulence Models for Predicting Laminar Separation Bubble Over Thick Airfoils
Technical Publication. GTINDIA2015-1277

Saravana Kumar L, Alok Mishra, *IIT Kanpur, Kanpur,India,* **Ashoke De,** *Indian Institute of Technology Kanpur, Kanpur, Uttar Pradesh, India*

Instabilities Investigation in Wet Gas Compressor by Flow Visualisation
Technical Publication. GTINDIA2015-1356

Veronica Ferrara, *Norwegian University of Science and Technology, Trondheim,Norway,* **Lars Eirik Bakken,** *Norwegian Univ of Sci & Tech, Trondheim,Norway*

1-4
AXIAL COMPRESSORS: CASCADES
Hyderabad, India, Hyderabad International Convention Centre, MR G.02 11:00am - 12:30pm

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Session Organizer: **Horst Saathoff,** *Siemens AG, Energy Sector, Muelheim, Germany*

NUMERICAL INVESTIGATION ON TANDEM COMPRESSOR CASCADES
Technical Publication. GTINDIA2015-1311

Shine S R, *IIST, Thiruvananthapuram, Kerala,India,* **Manas M P,** *IIST, Trivandrum,India*

Experimental Study of the Unsteady Blade Forces in an Oscillating Annular Compressor Cascade
Technical Publication. GTINDIA2015-1333

M. C. Keerthi, Abhijit Kushari, *IIT Kanpur, Kanpur,India*

Experimental Study on the Flow Past Sinusoidal Leading Edge Serrations in a Compressor Cascade
Technical Publication. GTINDIA2015-1334

M.S. Rajeshwaran, *Indian Institute of Technology Kanpur, Kanpur, Uttar Pradesh,India,* **Abhijit Kushari,** *IIT Kanpur, Kanpur,India*

COMM 5 Structure & Dynamics

Track Organizer: **Chandramou Padmanabhan,** *Indian Inst Of Tech Madras, Chennai 600 036, India*

5-1
FATIGUE & DAMAGE MECHANICS
Hyderabad, India, Hyderabad International Convention Centre, MR G.04 11:00am - 12:30pm

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Session Organizer: **Parag Ravindran,** *IIT Madras, Chennai, India*
Session Co-Organizer: **Mohan Sunderraman,** *Siemens India, Gurgaon, India*

Damage Diagnostics of Composite Fan Blades Using the Modified Time Reversal Method
Technical Publication. GTINDIA2015-1291

Nimesh Jayakody, Ratneshwar Jha, *Mississippi State University, Starkville, MS,United States,* **Thomas Lacy,** *Mississippi State University, Mississippi State, MS,United States*

Multiaxial Fatigue Life Estimation in the absence of Fatigue Properties- A case Study on a Turbine Rotor used in a Typical Turbo Shaft Engine.
Technical Publication. GTINDIA2015-1298

Dileep S, *Hindusan Aeronautics Limited, Bangalore, Select State/Province,India,* **Esakki Muthu Shanmugam,** *HINDUSTAN AERO-NAUTICS LIMITED, Bangalore,India,* **Girish K Degaonkar,** *Palani Udayanan, Hindusan Aeronautics Limited, Bangalore, Select State/Province, India*

Probabilistic Fatigue Life Assessment of a Titanium Centrifugal Impeller for Turbo Shaft Engine Application
Technical Publication. GTINDIA2015-1309

Esakki Muthu Shanmugam, *HINDUSTAN AERONAUTICS LIMITED, Bangalore,India,* **Raghu Prakash,** *Indian Institute of Technolo-gy Madras, Chennai,India,* **Sakthivel A,** *CEMILAC, Bangalore, Karnataka,India*

COMM 9 CCPP, Heat Recovery Steam Generators & Steam turbines

Track Organizer: **Hemant Gajjar,** Torrent Power Ltd, SURAT (Gujarat), India

9-1
CCPP, IGCC
Hyderabad, India, Hyderabad International Convention Centre, MR 1.05 and 1.06 11:00am - 12:30pm

Session Organizer: **Sai Sreedharan,** *GENERAL ELECTRIC, Bangalore, India*

Design Considerations for Syngas Turbine Power Plants
Technical Publication. GTINDIA2015-1261

Jaya Ganjikunta, *Bechtel India Private Limited, Gurgaon, Haryana, India*

CCPP Performance Evaluation Using Exergy and Energy Analysis
Technical Publication. GTINDIA2015-1323

Lalatendu Pattanayak, Mihir Acharya, *Steag Energy Services (india) Pvt. Ltd., Noida,India,* **Hemant Gajjar,** *Torrent Power Ltd, SU-RAT (Gujarat),India,* **RAJESH KUMA**R, **R.S Mishra,** *Delhi Technological University, Delhi, India*

Successful Preservation Strategies for CCGT Plants: Case Study
Technical Publication. GTINDIA2015-1387

Venkata Ravi Ram Pinninti, *GVK Gautami Power Ltd, Samalkot, AP,India,* **Hemant Gajjar,** *Torrent Power Ltd, SURAT (Gujarat),India*

COMM 15 Panel Discussions

Track Organizer: **Chandramou Padmanabhan,** *Indian Inst Of Tech Madras, Chennai 600 036, India*

15-3
ADVANCES IN WIND TURBINE TECHNOLOGY

Hyderabad, India, Hyderabad International Convention Centre, Hall 1 and 2 11:00am - 12:30pm

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Session Organizer: **Joseph Machnaim,** *GE India, Bangalore, Karnataka, India*
Session Co-Organizer: **Jitendra Bijlani,** *L M Wind Power Blades, Bangalore, India*

COMM 1 Compressors

Track Organizer: **Subhrajit Dey,** *GE Global Research, Bangalore, India*

1-1
PUMPS

Hyderabad, India, Hyderabad International Convention Centre, MR G.01 2:00pm - 2:30pm

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Session Organizer: **Chetankumar Mistry,** *Institute of Technology - Nirma University, Ahmedabad, India*
Session Co-Organizer: **Abhijit Kushari,** *IIT Kanpur, Kanpur, India*
Design and Performance Evaluation of an Aero Engine Booster Pump
Technical Publication. GTINDIA2015-1322
Ashfaq C. Mohammed, *Hindustan Aeronautics Limited, Bangalore, Karnataka,India, SHIVAKUMAR ULAGANATHAN, HINDUSTAN AERONAUTICS LIMITED, TRICHY, TAMILNADU,India,* **Lingamoorthy K, Anbuchezhian S,** *Hindustan Aeronautics Limited, Bangalore, Karnataka,India,* **Girish K Degaonkar,** *Hindusan Aeronautics Limited, Bangalore, Select State/Province, India*

COMM 3 Combustion, Fuels & Emissions

Track Organizer: **Satyanarayanan Chakravarthy,** *Indian Institute of Technology Madras, Chennai, India*

3-1
ATOMIZATION AND SPRAYS

Hyderabad, India, Hyderabad International Convention Centre, MR G.02 2:00pm - 3:30pm

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Session Organizer: **Sathesh Mariappan,** *Indian Institute of Technology Kanpur, Kanpur, India*
Session Co-Organizer: **Sundar Krishnaswami,** *GE Aviation, Karnataka, India*
Simulations of Non-Reacting Transient N-Dodecane Spray in a High-Pressure Combustion Vessel
Technical Publication. GTINDIA2015-1278
Rohit Saini, *IIT Kanpur, Kanpur,India,* **Ashoke De,** *Indian Institute of Technology Kanpur, Kanpur, Uttar Pradesh,India*

Primary Breakup of Liquid Jet in an Annular Passage in Crossflow of Air
Technical Publication. GTINDIA2015-1342
Deepak Kumar, Abhijit Kushari, *IIT Kanpur, Kanpur, Select State/Province,India,* **Jeffery Lovett,** *Pratt &*

Whitney Aircraft Engines, Tolland, CT,United States, **Saadat Syed,** *Pratt & Whitney, East Hartford, CT,United States*

Experimental Analysis of Simplex Atomizer Spray and Swirling Flow Interactions in Unconfined Conditions
Technical Publication. GTINDIA2015-1347

Muthu Selvan, Muralidhara HS, National aerospace laboratories, Bangalore,India, Indu Kharb, M R I U, Haryana,India, Sundarara-jan T, IITM, Chennai,India, vinod kumar vyas, Sivakumar Neelakandan, National Aerospace Laboratories, Bangalore,India

COMM 4 Heat Transfer

Track Organizer: **Subrata Sarkar,** *Indian Institute of Technology Kanpur, Kanpur -208 016, India*

4-3
GT HEAT TRANSFER III
Hyderabad, India, Hyderabad International Convention Centre, MR G.03 2:00pm - 3:30pm

Session Organizer: **Srinath Ekkad,** *Mechanical Engineering, Blacksburg, VA, United States*

Experimental Investigation on Performance of Pulsating Heat Pipe
Technical Publication. GTINDIA2015-1362

Tarigonda Hariprasad, *Sree Vidyanikethan Engineering College, Tirupathi, Andhra Pradesh,India,* **Pol Reddy Kukutla, P. Mallikar-juna Rao,** *Indian Institute of Technology, Madras,India,* **R.Meenakshi Reddy,** *G.Pulla Reddy Engineering College, Kurnool, Andhra Pradesh, India*

Experimental Investigation of Overall Cooling Effectiveness on Combustion Chamber Liner With and Without Impingement Holes
Technical Publication. GTINDIA2015-1377

Felix J, *National Aerospace Laboratories, Bangalore, India,* **R Rajendran,** *National Aerospace Laboratories, Bengaluru, Karnataka,India,* **Kumar G N,** *National Institute of Technology,Karnataka, Surathkal,India,* **Giridhara Babu Yepuri,** *National Aero-space Laboratories, Bangalore, Bangalore,India,* **Vivek S, Sinith P,** *MES College of Engineering, Kuttippuram,India*

Experimental Investigation of Adiabatic Film Cooling Effectiveness Over a Circular Fan and Laidback Fan Shaped Hole Flat Plate Test Models
Technical Publication. GTINDIA2015-1394

Giridhara Babu Yepuri, Felix J, National Aerospace Laboratories, Bangalore, Bangalore, India, **Suresh Batchu, Keshavan V.,** *GTRE,DRDO, Bangalore,India*

COMM 5 Structure & Dynamics

Track Organizer: **Chandramou Padmanabhan,** *Indian Inst Of Tech Madras, Chennai 600 036, India*

5-2
ROTOR DYNAMICS

Hyderabad, India, Hyderabad International Convention Centre, MR G.04 2:00pm - 3:30pm

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Session Organizer: **A K Darpe,** *IIT Delhi, New Delhi, India*

Non-Linear Transient Stability Analysis of a Rigid Rotor Supported on Journal Bearings with Rectangular Dimples
Technical Publication. GTINDIA2015-1275

Ram Turaga, *GIT, GITAM University,, Bangalore,India*

A Comparative Study Between Classical and Finite Element Model for Multilayer Viscoelastic Rotors
Technical Publication. GTINDIA2015-1330

Saurabh Chandraker, *National Institute of Technology Rourkela, Rourkela, Odisha,India,* **Haraprasad Roy,** *NIT Rourkela, Rourkela, Odisha,India*

Study of the effect of multistage cyclic symmetric modelling on the natural frequencies of bladed disks of an aero engine rotor system
Technical Publication. GTINDIA2015-1297

Siva Srinivas, Hardik Roy, *Hindusan Aeronautics Limited, Bangalore,India,* **Esakki Muthu Shanmugam,** *HINDUSTAN AERO-NAUTICS LIMITED, Bangalore,India*

COMM 6 Controls, Diagnostics & Instrumentation

Track Organizer: **Ravi YB,** *GE Global Research Center, Bangalore, Karnataka, India*

6-1
CONTROL SYSTEM TECHNOLOGY, DESIGN AND MODELLING

Hyderabad, India, Hyderabad International Convention Centre, MR 1.05 and 1.06 2:00pm - 3:30pm

Multi Parametric Model Predictive Control Strategy on Laboratory SR-30 Gas Turbine
Technical Publication. GTINDIA2015-1248

Paluri S. V. Nataraj, Ritesh Chandrawanshi, Sanjeet Kulkarni, Sharad Bhartiya, *IIT Bombay, Mumbai, Maharashtra,India,* **Suresh Sampath,** *Cranfield University, Bedford,United Kingdom,* **Swathi Surendran,** *IIT Bombay, Mumbai, Maharashtra,India*

Modeling and Design of Fractional-order IMC based Controller for Power Plant Gas Turbine
Technical Publication. GTINDIA2015-1264

SHARAD P JADHAV, *Ramaro Adik Institute of Technology, Navi Mumbai, Select State/Province,India,* **Rajan H Chile,** *Shri Guru Go-bind Singhji Institute of Engineering and Technology,, Nanded,India,* **SATISH HAMDE,** *SGGS IE&T, Nanded, M.S., INDIA, NANDED, Maharashtra,India*

In-House Development of Gerotor Pump for Lubrication System of a Gas Turbine Engine
Technical Publication. GTINDIA2015-1344

Tarique Hussain, *Gas Turbine Research Establishment, Bangalore,India,* **M Sivarama Krishna**, **S P Suresh Kumar,** *GTRE, Banga-lore,India*

COMM 1 Compressors

Track Organizer: **Subhrajit Dey,** *GE Global Research, Bangalore, India*

1-2
FANS

Hyderabad, India, Hyderabad International Convention Centre, MR G.01 2:30pm - 3:30pm

Session Organizer: **Abhijit Kushari,** *IIT Kanpur, Kanpur, India*
Aerodynamics of Contra-Rotating Fans With Swept Blades
Technical Publication. GTINDIA2015-1383

M Govardhan, *IIT Madras, Chennai, Tamil Nadu,India,* **K Vijayraj,** *Department of Mechanical Engineering, Chennai,India*

COMM 4 Heat Transfer

Track Organizer: **Subrata Sarkar,** *Indian Institute of Technology Kanpur, Kanpur -208 016, India*

4-1
GT HEAT TRANSFER I

Hyderabad, India, Hyderabad International Convention Centre, MR G.03 4:00pm - 4:30pm

Session Organizer: **Santanu De**, *Mechanical Engineering, Kanpur, Kanpur, India*
Predicting Dimensions of a Rectangular Fin Satisfying a Given Internal Heat Generation Using Inverse Method
Technical Publication. GTINDIA2015-1201

Ranjan Das, *Indian Institute of Technology Ropar, Punjab,India*

COMM 7 Manufacturing, Materials & Metallurgy

Track Organizer: **Raghavendra Adharapurapu,** *GE India Technology Centre, Bangalore, India*

7-1
COATINGS

Hyderabad, India, Hyderabad International Convention Centre, MR 1.05 and 1.06 4:00pm - 4:30pm

Development of Plasma Spray Coatings using Linz-Donawitz (LD) Slag Particles
Technical Publication. GTINDIA2015-1352

Pravat Ranjan Pati, Alok Satapathy, *National Institute of Technology, Rourkela, Rourkela, Odisha,India*

COMM 5 Structure & Dynamics

Track Organizer: **Chandramou Padmanabhan,** *Indian Inst Of Tech Madras, Chennai 600 036, India*

5-3
VIBRATION

Hyderabad, India, Hyderabad International Convention Centre, MR G.04 4:00pm - 5:30pm

Session Organizer: **Sujatha Chandramohan,** *IIT Madras, Chennai, India*
Response of Cracked Cantilever Beam Subjected to Traversing Mass
Technical Publication. GTINDIA2015-1366

SHAKTI JENA, *nit, rourkela, rourkela, odisha,India,* **Dayal R. Parhi,** *NATIONAL INSTITUTE OF TECHNOLOGY,ROURKELA, INDIA, ROURKELA, ODISHA,India,* **Devasis Mishra,** *NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA, ODISHA,India*

Forced Vibration Analysis of Functionally Graded Plates With Geometric Nonlinearity
Technical Publication. GTINDIA2015-1390

Saurabh Kumar, *NIT Rourkela, Rourkela,India,* **Anirban Mitra,** *Jadavpur University, Kolkata,India, Haraprasad* Roy, *NIT Rourkela, Rourkela, Odisha,India*

Coupled Thermo Mechanical Transient Stress Analysis of Functionally Graded Gas Turbine Rotor
Technical Publication. GTINDIA2015-1312

Dinesh Patil, D. Koteswara Rao, *National Institute of Technology Rourkela, Rourkela,India,* **Tarapada Roy,** *National Institute of Technology,Rourkela, Rourkela, Odisha,India*

COMM 13 Tutorials

Track Organizer: **Joseph Mathew,** *Indian Institute of Science, Bangalore, India*

13-1
TRANSIENT ENGINE SIMULATION-ITS ROLE IN DESIGN AND DEVELOPMENT
Hyderabad, India, Hyderabad International Convention Centre, Hall 1 and 2 4:00pm - 6:00pm

Transient Engine Simulation-Its Role in Design and Development
Tutorial. GTINDIA2015-1432

Syed Khalid, *Parametric Solutions Inc., Jupiter, FL,United States*

COMM 1 Compressors

Track Organizer: **Subhrajit Dey,** *GE Global Research, Bangalore, India*

1-6
AXIAL COMPRESSORS: SECONDARY FLOWS
Hyderabad, India, Hyderabad International Convention Centre, MR G.01 4:00pm - 6:30pm

Session Organizer: **M Govardhan,** *IIT Madras, Chennai, Tamil Nadu, India*

Numerical Investigation on Effect of Aspect Ratio of Axisymmetric Circumferential Groove Casing Treatment Coupled to a Transonic Axial Flow Compressor Stage
Technical Publication. GTINDIA2015-1207
Nishit Jayeshkumar Mehta, *The Maharaja Sayajirao University of Baroda, Vadodara,India,* **Dr.Dilipkumar Bhanudasji Alone,** *Pro-pulsion Division,CSIR-NAL, Banglore, Karnataka,India,* **Harish S Choksi,** *Department of Mechanical Engineering, Vadodara,India*

Computational Analysis of Effect of Circumferential Groove Casing Treatment With Different Axial Coverage Over Rotor Blade Tip Chord on the Performance of a Transonic Axial Compressor Stage
Technical Publication. GTINDIA2015-1209

Nishit Jayeshkumar Mehta, *The Maharaja Sayajirao University of Baroda, Vadodara,India,* **Dr.Dilipkumar Bhanudasji Alone,** *Pro-pulsion Division,CSIR-NAL,*

Banglore, Karnataka,India, **Harish S Choksi,** *Department of Mechanical Engineering, Vadodara,India*

Numerically Understand the Combined Effect of Tip Clearance and Circumferential Grooves Casing Treatment on the Perfor-mance of Single Stage Transonic Axial Flow Compressor
Technical Publication. GTINDIA2015-1210

Mitesh Kailashgir Goswami, *The Maharaja Sayajirao University, Vadodara, Vadodara,India,* **Dr.Dilipkumar Bhanudasji Alone,** *Propulsion Division,CSIR-NAL, Banglore, Karnataka,India, Harish S Choksi, Department of Mechanical Engineering, Vadoda-ra,India*

Stall Margin Improvement of a Single Stage Transonic Axial Flow Compressor Using Naturally Aspirated Slots
Technical Publication. GTINDIA2015-1211

Hari Krishna Borra, *Propulsion Division, Bangalore,India,* **Dr. Dilipkumar Bhanudasji Alone,** *Propulsion Division,CSIR-NAL, Banglore, Karnataka,India*

Methods of Improving the Axial Compressor Flow Passage to Reduce the Flow Circumferential Nonuniformity
Technical Publication. GTINDIA2015-1276

Grigorii Popov, Daria Kolmakova, *Samara State Aerospace University, Samara, Select State/Province,Russia*

COMM 3 Combustion, Fuels & Emissions

Track Organizer: **Satyanarayanan Chakravarthy,** *Indian Institute of Technology Madras, Chennai, India*

3-2
COMBUSTION INSTABILITY AND FLAME STABILIZATION

Hyderabad, India, Hyderabad International Convention Centre, MR G.02 4:00pm - 6:30pm

Session Organizer: **N. Muthuveerappan,** *Gas Turbine Research Establishment, Bangalore, India*
Session Co-Organizer: **Rakesh Yadav,** *ANSYS Inc, San Diego, CA, United States*

Comparison of Unsteady Heat Release Rate by Measurements From Chemiluminescence and Two Microphone Techniques
Technical Publication. GTINDIA2015-1249

Rajbir Verma, Sathesh Mariappan, *Indian Institute of Technology Kanpur, Kanpur, Uttar Pradesh,India*

Suppression of Combustion Noise in Gas Turbine Combustors
Technical Publication. GTINDIA2015-1339

Srihari Dinesh Kumar J., *IIT Kanpur, Kanpur, Select State/Province,India,* **Sathesh Mariappan,** *Indian Institute of Technology Kan-pur, Kanpur,India, Abhijit Kushari, IIT Kanpur, Kanpur,India*

Srihari Dinesh Kumar J., *IIT Kanpur, Kanpur, Select State/Province,India,* **Sathesh Mariappan,** *Indian Institute of Technology Kan-pur, Kanpur,India,* **Abhijit Kushari,** *IIT Kanpur, Kanpur,India*

Open Loop Active Control of Combustion Noise in Gas Turbine Combustor
Technical Publication. GTINDIA2015-1340

COMM 13 Tutorials

Track Organizer: **Joseph Mathew,** *Indian Institute of Science, Bangalore, India*

13-2
MATERIALS DEVELOPMENT AND LIFING

Hyderabad, India, Hyderabad International Convention Centre, MR 1.05 and 1.06 4:00pm - 6:30pm

Session Organizer: **Raghavendra Adharapurapu,** *GE India Technology Centre, Bangalore, India*
Gas Turbine Component and Coating Life Extension
Tutorial. GTINDIA2015-1416

Dheepa Srinivasan, *GE Power & Water, Bangalore, Karnataka,India*

The physics and metallurgy of Ni and Co-base superalloys
Tutorial. GTINDIA2015-1439

Karthikeyan S, *IISC-Bangalore, Bangalore, Karnataka, India*

High Temperature Structural Intermetallics for Gas Turbine Applications
Tutorial. GTINDIA2015-1440

Rahul Mitra, *IIT-KGP, Kharagpur, West Bengal,India*

Wind Energy
Tutorial. GTINDIA2015-1441

Vinod Kumar Boniface, *GE Power & Water, Bangalore, Karnataka, India*

COMM 4 Heat Transfer

Track Organizer: **Subrata Sarkar,** *Indian Institute of Technology Kanpur, Kanpur -208 016, India*

4-2
GT HEAT TRANSFER II

Hyderabad, India, Hyderabad International Convention Centre, MR G.03 4:30pm - 6:30pm

Session Organizer: **Debasish Biswas,** *Toshiba Corp, Kawasaki-ku 210, Japan*

Effect of Downstream Contraction on Liner Heat Transfer in a Gas Turbine Combustor Swirl Flow
Technical Publication. GTINDIA2015-1206

Sandeep Kedukodi, *Virginia Tech, Blacksburg, VA,United States,* **Srinath Ekkad,** *Mechanical Engineering, Blacksburg, VA,United States*

Numerical Analysis of Impingement/Effusion Cooling Effectiveness on Flat Plates
Technical Publication. GTINDIA2015-1319

Ivin Ignatious, Jayakumar J S, *AMRITA VISHWA VIDYAPEETHAM, KOLLAM, KERALA,India*

Thermal Analysis of a Turbine Blade: Effect of Film Cooling and Internal Convective Cooling
Technical Publication. GTINDIA2015-1296

Subrata Sarkar, *Indian Institute of Technology Kanpur, Kanpur -208 016,India,* **Prashant Gupta,** *BOSCH limited, Bangalore,India*

Effect of Vortex Generators on Film Cooling Effectiveness
Technical Publication. GTINDIA2015-1392

Subrata Sarkar, *Indian Institute of Technology Kanpur, Kanpur -208 016,India,* **Ganesh Ranakoti,** *Galgotias University, Gautam Budh Nagar, Uttar Pradesh,India*

COMM 3 Combustion, Fuels & Emissions

Track Organizer: **Satyanarayanan Chakravarthy,** *Indian Institute of Technology Madras, Chennai, India*

3-5
COMBUSTION CHARACTERIZATION

Hyderabad, India, Hyderabad International Convention Centre, MR G.03 8:30am - 9:30am

Session Organizer: **Abhijit Kushari,** *IIT Kanpur, Kanpur, India*
Session Co-Organizer: **Bhamidi Prasad,** *IIT Madras, Chennai, India*

Flame Investigation of a Gas Turbine Central Pilot Body Burner at Atmospheric Pressure Conditions Using OH PLIF and High-Speed Flame Chemiluminescence Imaging.
Technical Publication. GTINDIA2015-1212

Arman Ahamed Subash, Ronald Whiddon, Atanu Kundu, Robert Collin, *Lund University, Lund, Sweden,* **Jens Klingmann,** *Lund Universitet, Lund,Sweden,* **Marcus Aldén,** *Lund University, Lund,Sweden*

Numerical Computation of a Turbulent Lifted Flame Using Flamelet Generated Manifold With Different Progress Variable Definitions
Technical Publication. GTINDIA2015-1406

Rakesh Yadav, *ANSYS Inc, San Diego, CA,United States,* **Pravin Nakod,** *ANSYS Inc, Hinjewadi,India*

COMM 11 GT Cycle Innovations, Renewable Applications

Track Organizer: **Dhinagaran Ramachandran,** *iCube Technology, Bangalore, Karnataka, India*

11-1
RENEWABLE ENERGY

Hyderabad, India, Hyderabad International Convention Centre, MR G.02 8:30am - 10:00am

Session Organizer: **Balamurugan Srinivaasan,** *Honeywell, Bangalore, India*
Session Co-Organizer: **Prem Babu,** *Lennox, Chennai, Tamil Nadu, India*

On Site Testing of a Zero Head Vertical Axis Helical Water Turbine for Power Generation
Technical Publication. GTINDIA2015-1230

Parag K. Talukdar, Sarbindu Kumar, Vinayak Kulkarni, Amarendra K. Das, *Indian Institute Of Technology Guwahati, Guwahati,India,* **Ujjwal K. Saha,** *IIT Guwahati, Guwahati,India*

Performance Prediction of Darrieus Turbine Through Numerical Analysis
Technical Publication. GTINDIA2015-1266

Prasenjit Mukherjee, *Indian Institute of Technology Guwahati, ASSAM,India,* **Ujjwal K. Saha,** *IIT Guwahati, Guwahati, India*

Enhancement of Wind Turbine Aerodynamic Performance Using New Designed Airfoils
Technical Publication. GTINDIA2015-1329

Naresh Kedam, *Sardar Vallabhbhai National Institute of Technology, Surat, India,* **Beena Baloni,** *SADAR VALLABHBHAI PATEL NAT'L INST, SURAT, India,*

SA Channiwala, *S. V. National Institute of Technology, Surat, Karnataka, India, Sudhakar Nakka, CG Patel Institute of Technology, Bardoli, India*

COMM 2 Turbines

Track Organizer: **Ravikanth Avancha,** *GE Aviation, Bangalore, Karnataka, India*

2-1
TURBINE AERODYNAMICS: DESIGN AND MODELING

Hyderabad, India, Hyderabad International Convention Centre, MR G.01 8:30am - 10:30am

Session Organizer: **Hiteshkumar Mistry,** *GE Global Research, Bangalore, India*
Session Co-Organizer: **O.N Ramesh,** *Indian Institute of Science, Banglore, Karnataka, India*

Selection of Models to Assess the Profile Losses in Blade Rows Using the Methods of Mathematical Statistics
Technical Publication. GTINDIA2015-1245

Oleg Baturin, Daria Kolmakova, Aleksey Gorshkov, Grigorii Popov, *Samara State Aerospace University, Samara,Russia*

Influence of Compound Lean on an Industrial Steam Turbine Stage
Technical Publication. GTINDIA2015-1221

Srikanth Deshpande, *Lund University, Lund, Sweden,* **Marcus Thern,** *Lund University, Faculty of Engineering, Lund, Sweden,* **Magnus Genrup,** *Lund University, Lund, Sweden*

Transient Response of Mixed Flow Variable Geometry Turbine
Technical Publication. GTINDIA2015-1372

Ramesh Kannan, *Turbo Energy Pvt. Limited, Kanchipuram District, Tamil Nadu, India,* **Bhamidi Prasad,** *IIT Madras, Chennai, India,* **Sridhara Koppa,** *Turbo Energy Pvt. Limited, Kachipuram Distr, India*

Studies on Characteristic Frequency and Length Scale of Shock Induced Motion in Transonic Diffuser Using a High Order LES Approach
Technical Publication. GTINDIA2015-1225

Debasish Biswas, *Toshiba Corp, Kawasaki-ku 210,Japan,* **Tomohiko Jimbo,** *Toshiba, Kawasaki, Kanagawa prefecture, Japan*

COMM 14 Keynote Lectures

Track Organizer: **Joseph Mathew,** *Indian Institute of Science, Bangalore, India*

14-2
KEYNOTE 2

Hyderabad, India, Hyderabad International Convention Centre, Hall 1 and 2 9:30am - 10:30am

Integration: The Key to Success in Defence Programmes
Keynote. GTINDIA2015-1434

Conrad Banks, *Rolls Royce PLC, London,United Kingdom*

COMM 11 GT Cycle Innovations, Renewable Applications

Track Organizer: **Dhinagaran Ramachandran,** *iCube Technology, Bangalore, Karnataka, India*

11-2
CYCLE INNOVATIONS

Hyderabad, India, Hyderabad International Convention Centre, MR G.02 10:00am - 10:30am

Session Organizer: **Venkata Nori,** *Honeywell, Hyderabad, Telengana, India*
Experimental Analysis of a Dual-Fuel Engine Fueled by Producer Gas Derived From Pine Leaves and Cattle Dung Briquettes
Technical Publication. GTINDIA2015-1263

Maryom Dabi, *North Eastern Regional institute of Science and Technology, Itanagar, India,* **Ujjwal K. Saha,** *IIT Guwahati, Guwahati, India*

COMM 1 Compressors

Track Organizer: **Subhrajit Dey,** *GE Global Research, Bangalore, India*

1-9
CENTRIFUGAL COMPRESSORS: METHODS

Hyderabad, India, Hyderabad International Convention Centre, MR G.01 11:00am - 12:30pm

Session Organizer: **Christian Aalburg,** *GE, Garching n. Munich, Germany*
Universal Modeling Method: The Instrument for Centrifugal Compressor Gas Dynamic Design
Technical Publication. GTINDIA2015-1202

Yury Galerkin, *Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia,* **Alexey Rekstin,** *Peter the Great St.Petersburg Polytechnic University, Saint-Petersburg,Russia*, **Kristina Soldatova,** *Peter the Great St.Petersburg Polytechnic University, St.Petersburg,Russia,* **Alexandr Drozdov,** *Peter the Great St. Petersburg Polytechnic University, Saint-Petersburg,Russia*

Centrifugal Compressor Stage Design Principles Checking
Technical Publication. GTINDIA2015-1213

Yury Galerkin, *Peter the Great St.Petersburg Polytechnic University, St. Petersburg, Russia,* **Alexandr Drozdov,** *Peter the Great St. Petersburg Polytechnic University, Saint-Petersburg, Russia*

Model Order Reduction of Visco-Thermal Acousto-Elastic Interaction in High-Pressure Centrifugal Compressors
Technical Publication. GTINDIA2015-1345

Jithin Jith, Sunetra Sarkar, *Indian Institute of Technology Madras, Chennai, Tamilnadu, India*

COMM 5 Structure & Dynamics

Track Organizer: **Chandramou Padmanabhan,** *Indian Inst Of Tech Madras, Chennai 600 036, India*

5-4
STRUCTURES

Hyderabad, India, Hyderabad International Convention Centre, MR G.02 11:00am - 12:30pm

Session Organizer: **Gopal Nagendra,** *IIT Madras, Chennai, Tamilnadu, India*

Ultimate Load Capacities of Bolted Flanges
Technical Publication. GTINDIA2015-1325

Raghavan Kotur, *CYIENT, Hyderabad, Telangana,India,* **Lakshman Kasina,** *Cyient Ltd.,, Hyderabad, Telangana, India*

Shape Optimization of Flexible Supports for Aero Engines
Technical Publication. GTINDIA2015-1247

Govindaraji Gnanasundaram, *Cyient Ltd., Hyderabad, Telangana, India,* **Srinath Setty, Lakshman Kasina,** *Cyient Ltd.,, Hyderabad, Telangana, India,* **Raghavan Kotur,** *CYIENT, Hyderabad, Telangana,India*

Minimum Weight Design of Aero Engine Turbine Disks
Technical Publication. GTINDIA2015-1250

Lakshman Kasina, *Cyient Ltd.,, Hyderabad, Telangana, India,* **Raghavan Kotur,** *CYIENT, Hyderabad, Telangana,India, Govindaraji Gnanasundaram, Cyient Ltd., Hyderabad, Telangana, India*

COMM 13 Tutorials

Track Organizer: **Joseph Mathew,** *Indian Institute of Science, Bangalore, India*

COMM 15 Panel Discussions

15-1
ADVANCES IN AIRCRAFT ENGINE & FUTURE PROPULSION

Hyderabad, India, Hyderabad International Convention Centre, Hall 1 and 2 11:00am - 12:30pm

Session Organizer: **Joseph Machnaim,** *GE India, Bangalore, Karnataka, India*

15-2
ADDITIVE APPROACHES TO MANUFACTURING

Hyderabad, India, Hyderabad International Convention Centre, MR 1.05 and 1.06 11:00am - 12:30pm

Session Organizer: **Raghavendra Adharapurapu,** *GE India Technology Centre, Bangalore, India*

Cold spraying; process, properties and applications
Panel. GTINDIA2015-1435

Eklavya Calla, *GE Power & Water, Bangalore, Karnataka, India*

Advanced Joining and Additive Manufacturing
Panel. GTINDIA2015-1436

Janaki Ram Gabbita, *IIT-M, Chennai, Tamil Nadu,India*

Rapid Solidification and Casting
Panel. GTINDIA2015-1437

Phanikumar Gandham, *IIT-M, Chennai, Tamil Nadu, India*

Thermal Spray Coatings
Panel. GTINDIA2015-1438

Anand K, *GE Power & Water, Bangalore, Karnataka, India*

COMM 1 Compressors

Track Organizer: **Subhrajit Dey,** *GE Global Research, Bangalore, India*

1-7
CENTRIFUGAL COMPRESSORS: FLOWPATH

Hyderabad, India, Hyderabad International Convention Centre, MR G.02 2:00pm - 4:00pm

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Session Organizer: **Trilok Kumar Vashist,** *Cyient Ltd., Bangalore, Karnataka, India*

CFD Wind Tunnel Tests of Centrifugal Stage Return Channel Vane Cascades
Technical Publication. GTINDIA2015-1216

Yury Galerkin, *Peter the Great St.Petersburg Polytechnic University, St.Petersburg, Russia,* **Lyubov Marenina,** *Peter the Great St.Petersburg Polytechnic University, Saint-Petersburg, Russia,* **Kristina Soldatova,** *Peter the Great St.Petersburg Polytechnic University, St.Petersburg, Russia*

Casing Treatment of Centrifugal Compressors
Technical Publication. GTINDIA2015-1337

JISHA N, *Amrita School Of Engineering, Palakkad, Kerala, India,* **Anand Dhamarla, Pavan Kumar,** *Honeywell Technology Solutions, Bangalore, Karnataka, India*

Thickness and Blade Angle Distribution for Design of Centrifugal Compressor Stage Return Channel Vane
Technical Publication. GTINDIA2015-1350

Arindam Bera, *BHARAT HEAVY ELECTRICALS LTD., Hyderabad-500093, India,* **Nand Kumar Singh,** *Bharat Heavy Electricals Ltd., Hyderabad, Telengana,India*

CFD Analysis of Effect of Diffuser Vane Setting Angle and Shape on the Performance of a Centrifugal Compressor Stage
Technical Publication. GTINDIA2015-1369

Venkateswara Rao Pothuri, Ramana Murty Govindaraju, *Vasavi College of Engineering, Hyderabad, India,* **Venkata Rao Ganapathiraju,** *Vasavi College of Engineering, Hyderabad 500007, Telangana, India,* **Naga Vamsi P, Sivaram B,** *Vasavi College of Engineering, Hyderabad, Telangana, India*

1-5
AXIAL COMPRESSORS: FLOW & METHODS

Hyderabad, India, Hyderabad International Convention Centre, MR 1.05 and 1.06 2:00pm - 4:30pm

Session Organizer: **Shraman Goswami,** *Honeywell Technology Solutions, Bangalore, Karnataka, India*

FLOW BEHAVIOR IN A TRANSONIC AXIAL COMPRESSOR STAGE
Technical Publication. GTINDIA2015-1231

S Satish Kumar, *National Aerospace Laboratories, Bangalore, Karnataka, India,* **Ranjan Ganguli,** *Indian Institute Of Science, Bangalore, Karnataka 560012, Karnataka, India,* **S B Kandagal,** *Indian Institute of Science, Bangalore, Karnataka, India,* **Soumendu Jana,** *National Aerospace Laboratories, Bangalore, India*

Validation of a 1D Transient Simulation Model of a Multistage Axial Compressor
Technical Publication. GTINDIA2015-1237

Reema Kundu, *Georgia Institute of Technology, Atlanta, GA,United States, J.V.R. Prasad, Georgia Tech, Atlanta, GA, United States,* **Yedidia Neumeier,** *Plum Combustion, Atlanta, GA, United States*

CFD Analysis to Investigate the Effect of Vortex Generators on a Transonic Axial Flow Compressor Stage
Technical Publication. GTINDIA2015-1313

Avinash Kumar R, *Amrita School of Engineering, Kollam, ASIA, India,* **M. T. Shobhavathy,** *National Aerospace Laboratories, Bangalore, Karnatake, India,* **R Ajith Kumar,** *Amrita University, Kollam, Asia, India*

PARAMETRIC STUDY AND MEANLINE DESIGN OF MULTISTAGE AXIAL FLOW COMPRESSOR FOR PROCESS APPLICATION
Technical Publication. GTINDIA2015-1341

Ambrish Singh, *Bharat Heavy Electrical Limited, Hyderabad, Telangana, India,* **Nand Kumar Singh,** *Bharat Heavy Electricals Ltd., Hyderabad, Telengana, India*

Numerical Study of Variable Camber Inlet Guide Vane on Low Speed Axial Compressor
Technical Publication. GTINDIA2015-1351

Emandi Rajesh, *National Aerospace Laboratories, Bangalore, India,* **Bhaskar Roy,** *Indian Inst of Technology, Bombay, Mumbai, India*

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