Chetan S. Mistry, PhD

Assistant Professor, Dept. of Aerospace Engineering
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EDUCATION

Ph.D. in Aerospace Engineering, Indian Institute of Technology Bombay, 2014

M.E. in Mechanical Engineering (Turbomachines), NIT Surat, 2003

B.E. in Mechanical Engineering, SVREC (NIT) Surat, 2000

EMPLOYMENT/ACADEMIC EXPERIENCE

Assistant Professor, Dept. of Aerospace Engineering, IIT Kharagpur,
May 2016-present

Associate Professor, Dept. of Mechanical Engineering, Nirma Institute of Technology, Ahmedabad, March 2015-April 2016

Associate Professor, Dept. of Mechanical Engineering, SRICT, Ankleshwar, September 2014-March 2015.

Teaching Assistant, Indian Institute of Technology Bombay,
January 2010-August 2014.

Assistant Professor (V- pay), Dept. of Mechanical Engineering, Babaria Institute of Technology, Vadodara, April 2008-December 2009.

Lecturer (V- pay), Dept. of Mechanical Engineering, C. K.Pithawalla College of Engg. & Tech.,Surat, July 2001-April 2008.

Trainee Engineer, Condor Footware (India) Ltd.,Surat, August 2000-April 2001.

PROFESSIONAL ACTIVITIES

- Member of Organizing Committee for "***Testing & Instrumentation sessions***" at SAE World Congress.
- Member of Reviewer Committee for ***SAE International***.
- Reviewer for "**Journal of Applied Fluid Mechanics**"
- Reviewer for "**Part A: Journal of Power and Energy**",SAGE Publications Inc.
- Reviewer for " **Propulsion and Power Research"**, Elsevier
- Reviewer for "***ASME 2004 International Mechanical Engg. Congress, USA***".
- Reviewer for "***ASME 2014 Turbo Expo***", Germany.
- Expert lectures on **"Centrifugal Pumps-Operation and Selection"** at SRICT, Ankleshwar on 10th January,2015 at one day Refresher course on " Operation, Selection and Maintenance of Centrifugal Pumps"
- Reviewer for "**9th SAEINDIA International Mobility Conference-2015**" , New Delhi
- Reviewer for "**NUiCone International Conference-2015**", Ahmedabad.
- Reviewer for "**6th International and 43rd National Conference on. FLUID MECHANICS and FLUID POWER. *(FMFP-2016*)**".
- Reviewer for "ASME **GTIndia Conference (GTIndia-2017)"**, Bangalore.
- Session chair at "Asian **Congress on Gas Turbines (ACGT-2016)**", IIT Bombay.
- Session chair at "National **Aerospace Propulsion Conference (NAPC-2017)**", IIT Kanpur.
- Session Organizer at "ASME **GTIndia Conference (GTIndia-2017)"**, Bangalore.

INSTITUTE LEVEL:

- **Member, Departmental Academic Committee (PG & R),** Aerospace Engineering, IIT Kharagpur.
- **Member, Departmental Conference Funding Committee,** Aerospace Engineering, IIT Kharagpur.
- **Faculty Adviser, (2016 admission batch) students,** Aerospace Engineering, IIT Kharagpur.
- **Laboratory in-Charge, co in-charge (Propulsion Lab),** Aerospace Engineering, IIT Kharagpur.
- **Organizing secretary,** Seventh International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Aerospace Engineering, IIT Kharagpur.

AWARDS AND HONOURS

1. **Award for Excellence** in Thesis Work, IIT Bombay, August 2015
2. **Topper of 2003 ME (Turbo machines)** batch at National Institute of Technology, Surat
3. **IGTI YOUNG ENGINEER TRAVEL AWARD** at ASME TURBO EXPO-2013 at San Antonio, Texas, USA.
4. **Top five most downloaded paper** of the year 2013 in IMechE, Part A: Journal of Power and Energy.
5. Inclusion of Biography in First edition of The Marquis **"WHO'S WHO IN ASIA"** Publication 2006 -07.

PUBLICATIONS

Journal papers

1. Mistry, C.S. and Pradeep, A.M., 2013, "Effect of Variation in Axial Spacing and Rotor Speed Combinations on the Performance of a High Aspect Ratio Contra Rotating Axial Fan Stage", Proc. of IMechE, Part A: Journal of Power and Energy, Vol. 227, pp. 138-146.

2. Mistry, C.S. and Pradeep, A.M., 2014, "Influence of Circumferential Inflow Distortion on the Performance of a Low Speed, High Aspect Ratio Contra Rotating Axial Fan", Transactions ASME, Journal of Turbomachinery, Vol. 136, 2014, pp. 071009-1-11.

3. Mistry, C.S. and Pradeep, A.M., 2014, "Experimental Investigation of the Effect of Radially Distorted Inflow on a Contra-Rotating Fan Stage", International Journal of Rotating Machinery, Vol. 2014(2014), pp. 1-15.

4. Mistry, C.S. and Pradeep, A.M., 2014 "Experimental Investigation of a High Aspect Ratio, Low Speed Contra Rotating Fan Stage with Complex Inflow Distortion", Propulsion and Power Research,3(2),2014,pp. 68-81

5. Mistry, C.S. and Pradeep, A.M., 2014, "Propagation of Different Types of Inflow Distortions through a Contra Rotating Fan Stage", International Journal of Turbo and Jet Engines.

6. Mistry, C.S. and Pradeep, A.M., 2014, "Ducted Contra rotating Fans: A Need for future aircraft Engines". *(Manuscript under preparation).*

7. Mistry, C.S. and Pradeep, A.M., "Numerical Study to Understand Radial Inflow Distortion Effects on a Contra Rotating Fan Stage". *(Manuscript under preparation).*

8. Kesharwani,S., Mistry, C.S., Roy, S., Roy, R. and Mahapatra,K., " Design of low noise low speed wind tunnel for Railway research". *(Manuscript under preparation).*

9. Mistry, C.S. "Comparative assessment on performance of multi-cylinder engine using CNG, LPG and petrol as a fuel", SAE2005 Transactions Journal of Passenger Cars-Electronic & Electrical systems**,** March 2006.

Conference/Seminar papers

1. **Mistry, C.S.** and Channiwala, S.A.,2004 " Design of nozzle-less radial inflow gas turbine for small capacity(20kW) gas turbine engine", IMECE2004-59949, Proceedings of IMECE 2004,USA.

2. **Mistry, C.S.** and Gandhi, A.H., 2004, "Experimental Investigation On Multi-cylinder Engine Using Petrol and LPG as A Fuel", 2004-01-1653, SAE 2004 World Congress &Exhibition, Detroit, USA**.**

3. **Mistry, C.S.** and Channiwala, S.A., 2006, "*Preliminary Design Concepts for High Solidity Nozzle-less Radial Inflow Gas Turbine for Small Capacity Gas Turbine Engine*", GT2006-90962, Proceedings of 2006 ASME TURBO EXPO, Barcelona, Spain.

4. **Mistry, C.S.**, Gohil, P.P. and Sharma, D.M., 2005, "Performance Assessment of Multi-Cylinder Engine Using CNG", IMECE2005-79950, Proceedings of IMECE2005, USA.

5. **Mistry, C.S.**, 2005 "Comparative assessment on performance of multi-cylinder engine using CNG/LPG and petrol as a fuel", 2005-01-1056, SAE 2005 World Congress & Exhibition, Detroit, USA.

6. Mistry, C.S. and Pradeep, A.M., 2011, "Design and Performance Analysis of a Low-speed, High Aspect Ratio Contra-rotating Fan Stage", Proceedings of the 11th Asian International Conference on Fluid Machinery, IIT Madras.

7. Mistry, C.S. and Pradeep, A.M., 2012, "Effect of Speed Ratio and Axial Spacing Variations on the Performance of A High Aspect Ratio, Low Speed Contra-Rotating Fan", GT2012-68383, Proceedings of 2012 ASME TURBO EXPO, Copenhagen, Denmark.

8. Mistry, C.S. and Pradeep, A.M., 2012, "Understanding The Flow Behavior In A Low Hub-Tip Ratio, High Aspect Ratio Contra-Rotating Axial Fan Stage", GTIndia2012-9531, Proceedings of the 2012 ASME GT India Conference, Mumbai.

9. Mistry, C.S. and Pradeep, A.M., 2013, "Investigations on the Effect of Inflow Distortion on the Performance of a High Aspect Ratio, Low Speed Contra-rotating Fan Stage", GT2013-94311, Proceedings of 2013 ASME TURBO EXPO, San Antonio, Texas, USA.

10. Mistry, C.S. and Pradeep, A.M., 2013, "Study of the Velocity Flow Field Under Distorted Inflow Conditions for a High Aspect ratio Low Speed Contra Rotating Fan", GTIndia2013-3594, Proceedings of the 2013 ASME GT India Conference, Bangalore.

11. Apurva Tiwari, Sahil Patel, Arpit Lad and **Mistry, C.S.**,2016 "Development Of Bell Mouth for Low Speed Axial Flow Compressor Testing Facility", ACGT2016-18, Proceedings of the Asian Congress on Gas Turbines, Bombay.

12. Anand P. Darji,Dilipkumar Bhanudasji Alone and **Mistry, C.S.**, 2016, "Numerical Studies To Understand an Effect OF Rotor-Stator Axial Gap On the Performance of Transonic Axial Flow Compressor Stage Coupled With Circumferential Grooved Casing Treatment"ACGT2016-06, Proceedings of the Asian Congress on Gas Turbines, Bombay.

13. Jeffrey Savio Joseph, Dilipkumar Bhanudasji Alone and **Mistry, C.S.**, 2016, "Performance Characterization of a High Speed Axial Flow Compressor Stage Implemented WITH Diverse Porosities OF Axial Slotting Casing Treatment"ACGT2016-02, Proceedings of the Asian Congress on Gas Turbines, Bombay.

14. Nayak ,N., **Mistry, C.S.**, 2017, "Criteria for selection of solidity in design of contra rotating fan stage. "NAPC-2017, IIT Kanpur.

15. Darji,A.P., Alone, D.B. and Mistry, C.S., 2017, " Flow Studies On a Single Stage Transonic Axial Flow Compressor Retrofitted with Circumferential Grooves and Varied Rotor Stator" GT India2016, Bangalore, (*Paper accepted for presentation*)

16. Kesharwani,S., Mistry, C.S., Roy, S., Roy, R. and Mahapatra,K., 2017, "Design aspects of large diameter, low speed axial flow fan for wind tunnel application", GT India2017, Bangalore, (*Paper accepted for presentation*)

Invited Talks

1. Guest Lecture on **"Design of Radial inflow gas turbine"** at S.V.National Institute of Tech., Surat on 23rd June, 2003 to M.E. (Turbo Machines) students.
2. Expert lecture on **" Introduction to CFD analysis"** at CIT, Changa on 19th September, 2009 to M.Tech (CAD/CAM) students.
3. Expert lectures on **"Centrifugal Pumps-Operation and Selection"** at SRICT, Ankleshwar on 10th January,2015 at one day Refresher course on " Operation, Selection and Maintenance of Centrifugal Pumps"
4. Expert lectures on **"Use of commercial tools for CFD analysis"** at Nirma University, 30th January, 2016 at one week STTP on "Introduction to CFD".
5. Expert lectures on **"How to make Paper planes "** at Nirma University,4th March,2016 on one day "Paper plane Workshop" organized by MESA, Nirma University.
6. Expert lectures on **"Design aspects for Compact Heat Exchanger"** at Nirma University,28th March,2016 at one week STTP on " Design of Industrial Heat Exchanger".
7. Expert talk on **"Importance of experiments in turbomachinery design with case study"** at NIT Rourkela,23th October,2016 at one day ASME GT India seminar on "Recent Advances in Gas Turbines"

SPONSORED PROJECTS

1. ***Nirma University funded Minor research project.*** Design and development of probe calibration tunnel, 2015-16.
2. ***Nirma University funded IDEA lab minor research project.*** Design and development of low speed wind tunnel, 2015-16.
3. Experimental Investigations on Performance of Tandem Bladed Low Speed Axial Flow Compressor", ISIRD**, SRIC**.
4. "Aerodynamic design of traction rolling stock with speed potentials of 250 km/h upgradeable up to 350 km/h ", **Research Designs & Standards Organization (RDSO), India**

LABORATORY FACILITIES DEVELOPED FOR RESEARCH/TEACHING

1. Design of development of tandem bladed low speed Axial flow compressor.
2. Development of Probe calibration facility for multi-hole pressure probes.
3. Design of axial flow fan for **Centre for Railway Research (CRR)** wind tunnel facility at IIT Kharagpur.
4. Contra rotating axial flow turbomachines aerodynamics.
5. Design and development of ICING tunnel for turbomachines research.

NEW COURSES

1. Developed and introduced a new elective course on 'Design of compressors and turbines'
2. Developed and offered a micro-credit course on 'Measurements in propulsion systems' [Foreign faculty involved: Dr. Subir Mozumdar] during Spring, 2016-17
3. Proposed MHRD Scheme for **GIAN course** on ***"Aero elasticity and unsteady Aerodynamics in Turbo machinery."***