



**NAME- DR TUSHAR CHOUDHARY**

**DESIGNATION- Assistant Professor**

**ABOUT- I would like to stretch myself beyond all my limits and to create special identity by being innovative in my approach and being extra ordinary in my application.**

#### CONTACT INFO

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#### EXPERIENCE

S. No	Period of Employment		Organization/ Employer	Position Held	Total Experience
	From	To			
1.	9-6-2020	Present	IIITDM Jabalpur	Assistant Professor	1 Month, 3 days
2.	21-7-2017	31-3-2020	VIT University	Assistant Professor	2 years, 8 months, 10 days
3.	1-08-2013	2-6-2017	NIT Jamshedpur	Research Scholar	3 years, 10 months, 2 days
4.	24-9-2011	1-08-2013	RCET Bhilai	Lecturer	1 year, 10 months, 6 days

#### EDUCATION

December 2017

PhD, **Mechanical (Thermal)**

National Institute of Technology, Jamshedpur

July 2013

M.E, **Mechanical (Design)**

Chhattisgarh Swami Vivekanand Technical University (C.G Govt.)

July 2011

B.E, **Mechanical**

Chhattisgarh Swami Vivekanand Technical University (C.G Govt.)



## SKILLS

- 3D Printer
- ANSYS CFD
- Comsol
- FFT analyzer,
- Lathe
- T

## INTERESTS

CFD, FEA, Automobile, Thermodynamics, I.C. Engine, Manufacturing

## HONORS AND AWARDS

- **Placement opener of the batch 2007** and crack the placement package of **40 Lakhs**.
- University Topper in M.Tech and receive **Gold Medal** by **Dr. K. Radha Krishnan**, Chairman, Indian Space Research Organization on 2<sup>nd</sup> convocation.
- Receive **MHRD Fellowship** for complete PhD duration.
- Secure **1<sup>TH</sup> Runner up** position In Volley Ball (Team Event) At Agaltara (state level).
- Participated In Various Interschool Sports Tournament.
- Participated in workshop of **HYDRAULIC** in **S.S.C.E.T.**
- Participated at Several cultural activities in school and college level.
- Selected as **Logistics Secretary** of mechanical branch for the session 2010-11.
- Participated in various tech fest organized in various colleges.
- Successfully organized 2 days National workshop on RC Aircraft design for B.Tech students at VIT Bhopal University and **revenue generated of 94000**.
- Recognized as **outstanding contributor in reviewing as Reviewer by Applied Thermal Engineering Elsevier January 2018**
- Recognized as **outstanding contributor in reviewing as Reviewer by Energy Elsevier July 2019**

## RESEARCH AREA AND SPECIALIZATION

### Current research

- ✓ Thermal Analysis of Fuel cell Based Gas Turbine Hybrid cycle.
- ✓ To develop more efficient Hybrid gas turbine-based power plant cycles with perfect utilization of waste heat.

### Direction of research

- ✓ Successful Thermal Integration of fuel cell system with other system in order to utilize the waste heat.
- ✓ To develop an alternative means of power generation using renewable energy.



- ✓ Using CFD, second law optimization or Entropy generation Minimization of component as well as system level analysis can be done and develop a new line of research particular in the field of second law optimization.

## PUBLICATIONS

My Google Scholar page: <https://scholar.google.co.in/citations?user=Q6H54QEAAAAJ&hl=en>

1. **Book** – Machine Design, Prabhodh Bharti and Company, 2011 by Tushar Choudhary
2. **Book** – Turbo Machinery, Prabhodh Bharti and Company, 2011 by Tushar Choudhary
3. **Book** – Dynamic of Machine, Singh Publication, 2011 by Tushar Choudhary
4. **Book** – Fluid mechanics, Prabhodh Bharti and Company, ISBN: 978-93-81516-81-2, 2011 by Tushar Choudhary
5. **Book Chapter**- Chapter 12, Energy and Exergy Analysis of Solid Oxide Fuel Cell Integrated with Gas Turbine Cycle—“A Hybrid Cycle”, Springer Nature, Renewable Energy and its Innovative Technologies, ISBN: 978-981-13-2115-3, 464202\_1\_En, (12)
6. **Book Chapter**- Chapter 7, Thermoeconomic analysis of Gas turbine cycle, Springer Nature, Renewable Energy and its Innovative Technologies, ISBN: 978-981-13-2115-3, 464202\_1\_En, (7)
7. Satishchandra Salam, Tushar Choudhary, Arivalagan Pugazhendhi, Tikendra Nath Verma, Abhishek Sharm, “A review on recent progress in computational and empirical studies of compression ignition internal combustion engine”, Fuel, Volume 279, 1 November 2020, 118469 **SCI Impact Factor: 5.578**
8. Alok Kumar Mohapatra, Tapano Hotta, and Tushar Choudhary, "Advanced Exergy Analysis of an Air Craft Gas Turbine Engine at Different Power Loading Operations," SAE Technical Paper 2019-01-1863, 2019, <https://doi.org/10.4271/2019-01-1863> **SCOPUS Indexed**
9. Anand Shankar Singh, Tushar Choudhary, Sanjay “Thermal Analysis of Aircraft Auxiliary Power unit: Potential of Supercritical CO<sub>2</sub> Brayton cycle”, SAE Technical Paper 2019-01-1391, 2019, <https://doi.org/10.4271/2019-01-1391> **SCOPUS Indexed**
10. Mithilesh Kumar Sahu, Tushar Choudhary, Aishi Sahu, Sanjay “Exergoeconomic Analysis and Modelling of LM2500+G4 Engine for Marine Propulsion and Cogeneration Application”, SAE Technical Paper 2019-01-0903, 2019,



<https://www.sae.org/publications/technical-papers/content/2019-01-0903/> **SCOPUS Indexed**

11. Alok Kumar Mohapatra, Sanjay, Tushar Choudhary, "Thermodynamic Analysis of an Evaporative Inlet Air Cooled Combined Cycle for Marine Application," SAE Technical Paper 2018-01-1777, 2018, <https://doi.org/10.4271/2018-01-1777>, **SCOPUS Indexed**
12. Anupam kumara, Tushar Choudhary, Sanjay, Mithilesh, "Evaporative Inlet Air Cooled Gas Turbine Cycle: Parametric Exergy and Emission Analysis", SAE Technical Paper, SAE International, Copyright © 2018, <http://papers.sae.org/2018-01-1271/>, **SCOPUS Indexed**
13. Tushar Choudhary, Mithilesh kumar sahu, Sanjay, "Thermodynamic modeling of Blade Cooled Turboprop Engine Integrated to Solid oxide fuel cell: A concept", SAE Technical Paper, SAE International, Copyright © 2018, <http://papers.sae.org/2018-01-1308/>, **SCOPUS Indexed**
14. Tushar Choudhary, Mithilesh kumar sahu, Sanjay, "Thermoeconomic, Sustainability and Environmental Damage Cost Analysis of Air Cooled CT7-7A Turboprop Engine", SAE Technical Paper, SAE International, Copyright © 2018, <http://papers.sae.org/2018-01-0774/>, **SCOPUS Indexed**
15. Yugal Kishore ,Tushar Choudhary , "CFD Analysis of Three way Monolithic Catalytic Converter using ANSYS 14.5R" , International Journal of Mechanical and Production Engineering (IJMPE) , (2017 ) , pp. 46-50, Volume-5,Issue-11, **UGC approved**
16. Tushar Choudhary, Sanjay, "Computational `analysis of IR-SOFC: Thermodynamic, electrochemical process and flow configuration dependency", International Journal of Hydrogen Energy, (Elsevier)**SCI Impact Factor: 4.229**, Volume 41, Issue 2, 12 January 2016, Pages 1259-1271, <https://doi.org/10.1016/j.ijhydene.2015.10.098>
17. Tushar Choudhary, Sanjay, "Computational Analysis of IR-SOFC: Transient, Structural Integrity, Carbon Deposition and Flow dependency", International Journal of Hydrogen Energy (Elsevier) **SCI Impact Factor: 4.229**, Volume 41, Issue 24, 29 June 2016, Pages 10212-10227, <https://doi.org/10.1016/j.ijhydene.2016.04.016>
18. Tushar Choudhary, Sanjay, "Thermodynamic Modeling of IR-SOFC: Influence of Operating Parameters and Microscopic Characteristics of Porous Electrodes", Energy (Elsevier) **SCI Impact Factor: 4.801**, under review.
19. Tushar Choudhary, Sanjay, "Thermodynamic assessment of SOFC- ICGT hybrid cycle: Energy analysis and entropy generation minimization", Energy (Elsevier) **SCI Impact Factor: 4.801**, Volume 134, 1 September 2017, Pages 1013–1028, <https://doi.org/10.1016/j.energy.2017.06.064>



20. Tushar Choudhary, Mithilesh kumar sahu, Sanjay, “Exergoeconomic Analysis of Air Cooled Turboprop Engine: Air Craft Application”, SAE Technical Paper, SAE International, SAE International, Copyright © 2017, <http://papers.sae.org/2017-01-2044/>, **SCOPUS Indexed**
21. Tushar Choudhary, Mithilesh kumar sahu, Shreya Krishna, “Thermodynamic Analysis of Solid oxide fuel cell-Gas Turbine hybrid system for Aircraft power Generation”, SAE Technical Paper, SAE International, SAE International, Copyright © 2017, <http://papers.sae.org/2017-01-2062/>, **SCOPUS Indexed**
22. Tushar Choudhary, Dr. Sanjay, Prof. P.V Murthy, “Parametric Analysis of Syn-Gas Fueled SOFC with Internal Reforming, Copyright © 2015 SAE International, **DOI: 10.4271/2015-01-1176, SCOPUS Indexed**
23. Tushar Choudhary, Dr. Sanjay, “Thermodynamic Assessment of Advanced SOFC- Blade Cooled Gas Turbine Hybrid Cycle”, International Journal of Hydrogen Energy (Elsevier) **SCI Impact Factor: 4.229**, Volume 42, Issue 15, 13 April 2017, Pages 10248-10263, <https://doi.org/10.1016/j.ijhydene.2017.02.178>
24. Tushar Choudhary, Dr. Sanjay, “Novel and Optimal Integration of SOFC- ICGT Hybrid Cycle: Energy Analysis and Entropy Generation Minimization”, International Journal of Hydrogen Energy (Elsevier) **SCI Impact Factor: 4.229**, Volume 42, Issue 23, 8 June 2017, Pages 15597-15612, <https://doi.org/10.1016/j.ijhydene.2017.04.277>
25. Tushar Choudhary, Sanjay Thermodynamic and Emission Analysis of Basic and Intercooled Gas Turbine Cycles, 2015 SAE International (Accepted), *SAE International Journal of Fuels and Lubricant*, **DOI:10.4271/2015-01-2426, SCOPUS Indexed**
26. Tushar Choudhary, Sanjay, Mithilesh kumar , “Thermoeconomic Investigation of Different Gas Turbine Cycle Configurations for Marine Application”, SAE Technical Paper, SAE International **DOI:10.4271/2016-01-2228, SCOPUS Indexed**
27. Tushar Choudhary, Sanjay, “Thermodynamic Analysis of a Solid Oxide Fuel Cell with internal Reforming”, Journal of Renewable Energy Science, Technology and Economics ISSN 2395 – 2644 (print) Vol 1, Issue 1 - May 2015
28. Tushar Choudhary, Sanjay, CFD modeling of SOFC Cogeneration system for building Applications, Energy Procedia (Elsevier)109C (2017) pp. 361-368, **SCOPUS Indexed**, <https://doi.org/10.1016/j.egypro.2017.03.087>
29. Tushar Choudhary<sup>1</sup>, Mukesh Kumar Sahu<sup>2</sup>, “Experimental And Computational Analysis Of Piezo-Laminated Cantilever Beam”, International Journal of Advanced Technology in Engineering and Science, **Impact Factor: 1.012**, ISSN : 2348 – 7550, Volume No.02, Issue No. 05, May 2014, 224-235



30. Tushar Choudhary<sup>1</sup>, Akhay Kumar Behara<sup>2</sup>, P.kumar<sup>3</sup>, “Analytical and Computational Analysis of Blade Parameter on the performance of L.P axial flow turbines”, International Journal for Research in Applied Science and Engineering Technology (IJRASET), **Impact Factor: 4.58**, ISSN: 2321-9653, Vol. 2 Issue V, May 2014, 429-437
31. Tushar Choudhary<sup>1</sup> Mukesh Kumar Sahu<sup>2</sup>, “Experimental and Computational Analysis of Smart Cantilever beam”, International Journal for Scientific Research & Development, IJSRD, **Impact Factor: 1.26** ISSN : 2321-0613, Vol. 2, Issue 03, 2014, 1134-1137
32. Choudhary Tushar and Sahu Mukesh, “Experimental Vibration Analysis of piezo-laminated beam”, International Research Journal Of Science & Engineering, **Impact Factor: 0.312** ISSN: 2322-0015, 2014; Vol. 2 (3): 94-99
33. Akhya Kumar Behera, Tushar Choudhary, P. Kumar, “A Review on Turbine Design and Optimization —A State of Art”, International Journal of Emerging Technology and Advanced Engineering, **Impact Factor: 2.324**, ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 4, Issue 2, February 2014, 881-884
34. Tushar Choudhary<sup>1</sup>, Kinshuk Verma<sup>2</sup>, “Vibration Analysis of Plate Structure”, International Journal Of Scientific Research And Education, **Impact Factor :- 3.599**, ISSN (e): 2321-7545, Volume||3||Issue1,|Pages-2867-2875, January-2015
35. Tushar Choudhary<sup>1</sup>, Ashwini Kumar<sup>2</sup>, “Vibration Analysis of Stiff Plate with Cutout”, International Journal of Technical Research and Applications, **Impact Factor: 4.395**, e-ISSN: 2320-8163, Volume 3, Issue 1 (Jan-Feb 2015), PP. 135-140.
36. Mukesh Kumar Sahu, Tushar Choudhary, R.K Prasad, “A review on Effect of Artificial Roughness on Thermal Performance of a Solar Air Heater- “A State of Art”, Journal of Renewable Energy Science, Technology and Economics, ISSN 2395 – 2644 (print) Vol 1, Issue 1 - May 2015
37. Mithilesh Kumar Sahu, Tushar Choudhary, Sanjay, “Parametric Thermodynamic Analysis Of Intercooled And Intercooled-Recuperated Gas turbine Based Cycles”, Journal of Renewable Energy Science, Technology and Economics, ISSN 2395 – 2644 (print) Vol 1, Issue 1 - May 2015
38. Tushar Choudhary, Sanjay, “Thermodynamic Analysis of a Solid Oxide Fuel Cell with internal Reforming”, Journal of Renewable Energy Science, Technology and Economics, ISSN 2395 – 2644 (print) Vol 1, Issue 1 - May 2015



## TRAINING, CERTIFICATION & SEMINARS ATTENDED

- Completed One-month (1/6/2009 to 27/6/2009) Industrial Training from **BSP in 2009.**
- Completed One-month (31/5/2010 to 26/6/2010) Industrial Training from **BSP in 2010.**
- Participated in workshop on **HYDRAULIC** in **S.S.C.E.T.** on 9 October 2010
- Completed Training of 120 hours in PRO-Engineer wildfire 4.0 under training partner of **PTC University, USA, 2009.**
- Completed Training of 120 hours in AUTOCAD under training partner of **PTC University, USA, 2008.**
- Completed Training of 60 Days in SOLID EDGE V20 under training partner of **DCS, Bhilai.**
- Participated in workshop of **Research Methodology Including Mathematical Modeling in Engineering and Applied Sciences** in **R.C.E.T Bhilai** from 24-25 March 2012.
- Participated in workshop of **Application of Advanced Tool Used in Mechanical Engineering Research** in **R.C.E.T Bhilai** from 21-23 January 2015.
- One-week short term course training Program on Modeling using Computational Fluid dynamics **CFD and MATLAB** at **NIT Raipur** from 27-1 June 2016
- Two days **National workshop on Green chemistry and Sustainable Development** at **NIT Jamshedpur** from 18<sup>th</sup> -19<sup>th</sup> March 2017.
- Twenty-one days of **Faculty Development program in VIT University, Tamil Nadu with training of CALTECH** (Collaborative Learning through Technology) 10<sup>th</sup>-30<sup>th</sup> June 2017.
- One-week **National Workshop on Advances in Materials, Processing and Characterization** at **NIT Raipur** from 26<sup>th</sup> -30<sup>th</sup> August 2019

## CONFERENCE/WORKSHOP (ORGANISED/ATTENDED)

- Tushar Choudhary, P.V Joshi, "Effect of Singularities on Natural Frequencies of Square Stiff Plate", Shaastrarth 2013 International Conference, 8th February 2013 to 9th February 2013, Wiley Publication, ISBN NO.978-81-265-4073-0
- Tushar Choudhary, Dr. Sanjay, "Thermodynamic Analysis of a Solid Oxide Fuel Cell with internal Reforming" International Conference on Renewable Energy Science, Technology & Economics 2015 organized by CHANDRADEEP SOLAR RESEARCH INSTITUTE, Scientific & Industrial Research Organization Ministry of Science & Technology, Government of India. ISSN 2395 – 2644, Jadavpur University, Kolkata on 13th & 14th February 2015. (Vol I, Issue 2)
- Mukesh Kumar Sahu, Tushar Choudhary, R.K Prasad, "A review on Effect of Artificial Roughness on Thermal Performance of a Solar Air Heater- "A State of Art"" International Conference on Renewable Energy Science, Technology & Economics 2015 organized by CHANDRADEEP SOLAR RESEARCH INSTITUTE, Scientific & Industrial Research Organization Ministry of Science & Technology, Government of India. ISSN 2395 – 2644, Jadavpur University, Kolkata on 13th & 14th February 2015. (Vol I, Issue 2)





- Mithilesh Kumar Sahu, Tushar Choudhary, Dr. Sanjay, “Parametric Thermodynamic Analysis of Intercooled and Intercooled-Recuperated Gas Turbine Based Cycles” International Conference on Renewable Energy Science, Technology & Economics 215 organized by CHANDRADEEP SOLAR RESEARCH INSTITUTE, Scientific & Industrial Research Organization Ministry of Science & Technology, Government of India. ISSN 2395 – 2644, Jadavpur University, Kolkata on 13th & 14th February 2015. (Vol I, Issue 2)
- Tushar Choudhary, Ish Kumar Dewangan “Simulation of Heat transfer and flow in internal cooling passages of turbine blades”, Shaastrarth 2015 An International Conference Under - TEQIP Phase-II 29th & 30th June 2015 *TECHNICALLY SPONSORED BY IEEE* at RCET Bhilai
- Tushar Choudhary, Ishkumar Dewangan, Thermo hydrodynamic analysis of an Journal Bearing with dimple textures on the Bearing Surface using CFD”, International seminar on utilization of non-conventional energy sources for sustainable development of rural areas (ISNCESR,) organized by Parthivi engineering college, Chhattisgarh department of science and Technology. 21 and 22 March 2015, ISSN: 2278-0181
- Tushar Choudhary, Sanjay, Mithlesh Kumar, “CFD modeling of SOFC Cogeneration system for building Applications”, RAAR 2016 Bhubnaeshwar, 10<sup>th</sup> -12<sup>th</sup> November 2016
- Tushar Choudhary, Sanjay, “Thermodynamic Analysis of Gas Turbine cycle integrated with Solid Oxide Fuel Cell Systems (SOFC-GT): A Hybrid Cycle”, 3rd International Conference on “Advances in Steel, Power and Construction Technology” ICASPCT-2017 during March 22-23, 2017 Raipur
- Tushar Choudhary, “Thermodynamic analysis of Blade cooled Gas Turbine Based Hybrid Power Cycle”, 5th International Conference "SHAASTRARTH -2017, during 16-17 December 2017, Bhilai
- Tushar, Yugal Kishore Sinha, “CFD analysis of three way monolithic catalytic converter using ansys 14.5r”, International Multidisciplinary Conference on Emerging Trends in Engineering, Science and Technology, ImcETEST 2017, during 23 December 2017, Bhilai
- Tushar Choudhary, Sanjay, “Thermodynamic Modeling Of A Solid Oxide Fuel Cell With Internal Reforming”, BITCOM2016 Emerging Trends in Science, Technology & Management for National Development, Proceeding PP 37, NATIONAL CONFERENCE
- Mithilesh Kumar, Tushar Choudhary, “Investigation Of Parameters Affecting Total Cost And Thermodynamic Performance Of Cogeneration Cycle” BITCOM2016 Emerging Trends in Science, Technology & Management for National Development, Proceeding PP 155, NATIONAL CONFERENCE, 29-30 January 2016





- Tushar Choudhary “Thermodynamic Analysis of Hybrid Gas Turbine Solid Oxide Fuel Cell Systems (GT-SOFC)”, AICON2016 CSIT Durg, 22nd -23rd April 2016, ISBN : 978-81-923288-4-3
- Mithilesh Kumar, Tushar Choudhary, “Exergy analysis of combined gas/steam cycle with single pressure HRSG” AICON2016 CSIT Durg, 22nd -23rd April 2016, ISBN : 978-81-923288-4-3
- Tushar Choudhary, Mithilesh Kumar Sahu, “Energy and Exergy Analysis of Solid Oxide fuel cell Integrated with Gas turbine cycle- “A Hybrid cycle””, International Conference on the Energy, Materials and Information Technology (ICEMIT’17)”, during 23-24 December 2017, **SCOPUS Indexed**
- Tushar Choudhary, Mithilesh Kumar Sahu, Sanjay, “Thermoeconomic Modelling and Analysis of Energy Conversion system: Intercooled Recuperated Gas Turbine”, International Conference on the Energy, Materials and Information Technology (ICEMIT’17)”, during 23-24 December 2017, **SCOPUS Indexed**

#### REVIEWER OF JOURNALS:

- International Communication in Heat & Mass transfer, Elsevier, **SCI Impact Factor 3.801**
- International Communication in Heat & Mass transfer, Elsevier, **SCI Impact Factor 3.801.**
- Applied Thermal Engineering, Elsevier, **SCI Impact Factor 3.634.** Energy, Elsevier, **SCI Impact Factor 5.582.**
- International Journal of Hydrogen Energy, Elsevier, **SCI Impact Factor 4.084.**
- Journal of Cleaner production, Elsevier, **SCI Impact Factor 7.051**
- Journal of Natural Gas Science & Engineering, Elsevier, **SCI Impact Factor 3.090**

#### EVENT CONDUCTED:

- Successfully organized Alumni meet of NIT Jamshedpur 1985/1987, 1992 batch at NIT JSR **(Coordinator)**
- Successfully organized 3 days National Workshop on Android Application Development VIT Bhopal University on 16-18 March 2018. **(Coordinator)**
- Successfully organized 1 days National Workshop on Stress management Bhopal University on 16-18 March 2018. **(Coordinator)**
- Successfully organized 2 days National workshop on RC Aircraft design for B.Tech students at VIT Bhopal University on 6-7 April 2018. **(Convener)**
- Successfully organized 2 days National workshop on Artificial Neural Network using MATLAB at VIT Bhopal University on 18-19 October 2019. **(Co-Convener)**

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