



## Dr. Md. Azhar

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### ABOUT ME

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Mohammad Azhar is currently working as a Principal of MMANTC Polytechnic, Maharashtra, India. He is also working as an Professor in the Department of Mechanical Engineering, MMANTC, Maharashtra, India. He obtained his M.Tech and Ph.D. from Aligarh Muslim University, Aligarh U.P., India. His research interests include energy and exergy analyses of different vapour absorption refrigeration systems, solar cooling systems, solar pasteurization system and effective utilization of renewable energy in air conditioning/cooling systems. His research articles appeared in top energy journals. He reviewed numerous articles for reputed journals (namely, Energy Conversion Management, International Journal of Refrigeration, Applied Energy etc.). He is also served as Editorial Member of the journal "Energy and Thermofluids Engineering". He is actively involved in research as well as efficient teaching. He has more than 9 years of combined teaching and research experience with administrative duties. He can effectively utilize his ideas, research potential, technical skills and leadership quality to benefit mutual growth and success of an organization.

### DIGITAL SKILLS

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Microsoft Word / Power Point / Microsoft Excel / Python / Fortran90 / LateX Document preparation / Finite Element Method / Finite Volume Method / Finite Difference Method / Machine Learning using MATLAB Octave / Fluent (Ansys CFD) / ANSYS WORKBENCH / Machine learning algorithms (e.g., neural networks support vector machine)

### WORK EXPERIENCE (Around 10 Years of teaching experience and 4 years research experience)

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1. University : SPPU (MMANTC College, Malegaon (M.H)) Pune University, India  
Experience : Jan 2020 to till now (**Around 4.7 Years**)
2. University : AKTU (ACN college, Aligarh), Lucknow, India  
Experience: August 2019 to Jan. 2020 (**06 Months**)
3. University : Aligarh Muslim University, Aligarh, Uttar Pradesh, India  
Experience: August 1th, 2018 to 30th July 2019 (**1.0 Year**)
4. University : Vivekananda College of Technology and Management, Aligarh, Uttar Pradesh, India  
Experience: Jan. 14th, 2013 to Oct. 15th, 2014 (**Around 2.0 Years**)
5. University : Vivekananda College of Technology and Management, Aligarh, Uttar Pradesh, India  
Experience: Aug, 2008 to Jan. 2010 (**Around 1.5 Years**).

## EDUCATION DETAILS

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### Doctor of Philosophy (Thermal Engineering)

*ZHCET, Aligarh Muslim University [2019]*

**Thesis Title:** Energy and Exergy Analyses of Multi Effect Vapour Absorption Cycles

### Master of Technology (Thermal Sciences)

*ZHCET, Aligarh Muslim University [2012]*

**Outcome:** 80.32% (Hons.) Got Rank 2<sup>nd</sup> in the Department

**Dissertation Title:** Thermodynamic and Economic Analysis of Triple Effect Vapour Absorption Cycle

### Bachelor of Technology (Mechanical Engineering)

*VTU, Belgaum [2008]*

**Outcome:** 67.78%

### Senior Secondary School (Science)

*BIEC, Patna [2003]*

**Outcome:** 68.22%

### Higher Secondary School

*BSEB, Patna [2000]*

**Outcome:** 74.71%

## HONOURS AND AWARDS

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### 1. Graduate Aptitude Test in Engineering

**Qualified:** GATE-2010, GATE-2011 and GATE-2012

2. Selected in National Fellowship provided by UGC in 2016 for Ph.D. Assistantship as JRF and SRF.

## REVIEWER OF JOURNALS (Verified reviews: 310)

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- Applied Energy (Reviewed papers: 50)
- Journal of Cleaner Production (36)
- International Journal of Refrigeration (17)
- Energy Conversion Management (19)
- Energy Reports (15)
- Journal of Energy Resources Technology (13)
- Energy Conversion Management-X (12)
- Journal of Heat Transfer, ASME (03)
- Energy and Thermofluids Engineering (01)
- International Journal of Ambient Energy
- Sustainable Energy Tech. & Assessments (06)
- CFD Letters (01)
- International journal of Energy Research (02)
- Energy Research Journal (05)
- Journal of Thermal Engineering (03)
- Chemical Engineering Communications (01)
- Cleaner Engineering and Technology (02)
- International Journal of Exergy (03)

## ORGANISATIONAL SKILLS

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### Gained during M.Tech and Ph.D.

Ability to organize work autonomously, subdividing it in various steps and defining priorities in order to achieve the objectives and deadlines.

## LANGUAGE SKILLS

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Mother tongue(s): Urdu **English**

LISTENING: C1 READING: C1 UNDERSTANDING: C1

SPOKEN PRODUCTION: C1

SPOKEN INTERACTION: C1

Good interpersonal skills gained following the various activities carried out during the course of study. In particular where communication, collaboration and the constant exchange of ideas between different figures are needed.

## RESEARCH AND TEACHING ACTIVITIES

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- Serve as "**Guest Editor**" of the journal "Processes" (MDPI, SCI indexed, Impact Factor:3.352) for a special issue entitled "Technology, Materials, Policy, and Other Initiatives for Sustainability in the Energy and Environment Sectors"
- Serve as "**Co-Editor & Chief**" of the journal " Journal of Renewable Energy and Technology (JRET, ISSN 2716-8123)" (<https://asps-journals.com/index.php/jret/about/editorialTeam>) published by Alwaha Scientific Publishing Services (ASPS), Biskra, Algeria.
- Serve as "**Associate Editor**" of the journal "Energy and Thermofluids Engineering" (<https://asps-journals.com/index.php/ETE>) published by Alwaha Scientific Publishing Services (ASPS), Biskra, Algeria.
- Serve as Scientific Member in [The first International Conference on Energy, Thermofluids and Materials Engineering](#)
- Working as NAAC and NBA coordinator in MMANTC, Malegaon
- Reviewed 300+ papers of 25 International reputed Journals.
- Delivered an expert Lecture in Integral University on the topic: Introduction of Mechanical Engineering and its Scope.
- Delivered an expert Lecture in Two Week Professional development program (15<sup>th</sup> to 30<sup>th</sup> July, 2022) held at Department of Mechanical Engineering, Integral University, Lucknow on the topic: "Recent Development in Manufacturing Engineering and Energy Technology" Introduction of Mechanical Engineering and its Scope.
- Delivered Eight expert lectures in Indian Railways Institute of Electrical Engineering on Material Science and Metallurgy in a 26-week Curriculum.

## **International Journal Papers**

1. **Md. Azhar** and Siddiqui, M. Altamush (2019), 'Exergy analysis of single to triple effect lithium bromide-water vapour absorption cycles and optimization of the operating parameters', *Energy Conversion and Management Elsevier* <https://doi:10.1016/j.enconman> **Impact Factor: 11.53**
2. **Md. Azhar** and Siddiqui, M. Altamush (2020). Comprehensive Exergy Analysis and Optimization of Operating Parameters for Double Effect Parallel Flow Absorption Refrigeration Cycles. *Thermal Science and Engineering Progress, Elsevier* <https://doi.org/10.1016/j.tsep.2019.100464> **Impact Factor: 4.56**
3. **Md. Azhar** and Siddiqui, M. Altamush (2019), 'First and Second Law Analyses of Double Effect Parallel and Series Flow Direct Fired Absorption Cycles for Optimum Operating Parameters', *Journal of Energy Resources Technology. Transactions of ASME*. <https://doi:10.1115/1.4043880> **Impact Factor: 3.07**
4. **Md. Azhar** and Siddiqui, M. Altamush (2017), 'Optimization of operating temperatures in the gas operated single to triple effect vapour absorption refrigeration cycles', *International Journal of Refrigeration, Elsevier* <https://doi:10.1016/j.ijrefrig.2017.06.033> **Impact Factor: 4.14**
5. **Md. Azhar** and Siddiqui, M. Altamush, "Energy and Exergy Optimization of Parallel Flow Direct and Indirect Fired Triple Effect Vapour Absorption Systems" *International Journal of Exergy*, (2021), Vol.34 No.4, pp.385 - 410 <https://dx.doi.org/10.1504/IJEX.2021.114090> **Impact Factor: 1.467**
6. Khursheed Afroz Ansari, **Md. Azhar**, Siddiqui, M. Altamush. "Exergy Analysis of Single Effect Vapour Absorption System using Design Parameters". *Journal of Energy Resources Technology Transactions of ASME*, <https://doi.org/10.1115/1.4048594> **Impact Factor: 3.07**
7. Md Meraj, S.M. Mahmood, M.E. Khan, **Md. Azhar**, G.N. Tiwari. "Effect of N-Photovoltaic Thermal Integrated Parabolic Concentrator on Milk Temperature for Pasteurization: A Simulation Study" *Renewable Energy, Elsevier* <https://doi.org/10.1016/j.renene.2020.10.103> **Impact Factor: 8.634**
8. M. Meraj, M.E. Khan, **Md. Azhar**, "Performance Analyses of Photovoltaic Thermal Integrated Concentrator Collector Combined With Single Effect Absorption Cooling Cycle: Constant Flow Rate Mode", *Journal of Energy Resources Technology, Transactions of ASME* (2020) <https://doi.org/10.1115/1.4047407> **Impact Factor: 3.07**
9. M. Arif, M.A. Khan, **Md. Azhar**, N. Akhtar and M. Meraj "Thermal Performance Comparison and Augmentation of Two Identical Box-Type Solar Cookers Operating in Tropical Climatic Conditions" *Journal of Thermal Science and Engineering Applications, ASME*, Vol.13 (6), 061004 (2021) <https://doi.org/10.1115/1.4050323> **Impact Factor: 1.879**

10. Sazia Khanam, Md.Meraj **Md.Azhar** M.N.Karimi, Tausif Ahmad, Md. Reyaz Arif, Wael Al-Kouz “Comparative performance analysis of photovoltaic modules of different materials for four different climatic zone of India” *Urban Climate, Elsevier* Vol. 36 (2021) <https://doi.org/10.1016/j.uclim.2021.100957> **Impact Factor: 6.66**
11. GN Tiwari, M Meraj, ME Khan, **Md. Azhar** “Modified Hottel-Whillier-Bliss Equation for an Active Solar Distillation System for Higher Yield and Thermal Efficiency” *Journal of Thermal Science and Engineering Applications, ASME*, Vol.14 (2), 021011 (2021) <https://doi.org/10.1115/1.4051374> **Impact Factor: 1.879**
12. S Zafar, M Adil, **Md. Azhar**, MA Siddiqui “Experimental and numerical study of Pool boiling and critical heat flux enhancement using water based silica Nanofluids” *Heat and Mass Transfer, Springer* 1-15 (2021) <https://doi.org/10.1007/s00231-021-03047-4> **Impact Factor: 2.325**
13. Ahmoud K.S. Abozoor, Md Meraj, **Md Azhar**, M.E. Khan, Mohammad Seraj, Md Ahsan, Shah Aqueel Ahmed, Ehab Hussein Bani Hani, Energy and exergy analyses of active solar still integrated with evacuated flat plate collector for New Delhi, *Groundwater for Sustainable Development, Elsevier*, Volume 19, 2022, 100833, ISSN 2352-801X, <https://doi.org/10.1016/j.gsd.2022.100833> .
14. Tausif Ahmad, **Md Azhar**, M.K. Sinha, Md Meraj, Islam Mohammed Mahbubul, Akbar Ahmad, Energy analysis of lithium bromide-water and lithium chloride-water based single effect vapour absorption refrigeration system: A comparison study, *Cleaner Engineering and Technology, Elsevier*, Volume 7, 2022, 100432, ISSN 2666-7908, <https://doi.org/10.1016/j.clet.2022.100432>
15. Ehab Hussein Bani-Hani, Mamdouh El Haj Assad, Maryam Al Mallahi, Zaid Almuqahwi, Md. Meraj, Md. Azhar, Overview of the effect of aggregates from recycled materials on thermal and physical properties of concrete, *Cleaner Materials, Elsevier*, Volume 4, 2022, 100087, ISSN 2772-3976, <https://doi.org/10.1016/j.clema.2022.100087> .
16. MTA Tanwir, MA Azhar, YR Yasser. “Physical, Mechanical and Morphological Characterization of A356/Si3N4 Nanoparticles Stir Casting Composites” *Journal of Engineering Research*, <https://doi.org/10.36909/jer.16205>
- 17.** MA Ismael, SG Yahya, **M Azhar**, IM Mahbubul, O Ilori “Improving the Efficiency of a Conventional Vapor-Compression Refrigeration System used for Geothermal and Evaporative Cooling Techniques: **Case Study in Iraq** *Diyala Journal of Engineering Sciences*, <https://doi.org/10.24237/djes.2023.16102>
- 18.** **M Azhar** “First Law Optimization and Review of Double and Triple-Effect Parallel Flow Vapor Absorption Refrigeration Systems

## International Conference Paper/Book Chapter

1. **M. Azhar** and Siddiqui, M. Altamush (2017), 'Energy and Exergy Analyses for Optimization of the Operating Temperatures in Double Effect Absorption Cycle', in **Energy Procedia**, <https://doi:10.1016/j.egypro.2017.03.043>
2. **M. Azhar**, M. Meraj, A. M. Rasheed Ahmed et al., Second law analysis of indirect and direct fired single effect absorption systems, **Materials Today: Proceedings**, <https://doi.org/10.1016/j.matpr.2020.07.508>
3. M. Meraj, **M. Azhar**, M. Khan et al., Thermal modelling of PVT-CPC integrated vapour absorption refrigeration system, **Materials Today: Proceedings**, <https://doi.org/10.1016/j.matpr.2020.07.547>
4. Md. Reyaz Arif, Zahid Farhan and **Md. Azhar** "Measurement of thermal diffusivity for food products under natural convection cooling" IOP Conference Series: Materials Science and Engineering, Volume 1146, [doi:10.1088/1757-899X/1146/1/012016](https://doi.org/10.1088/1757-899X/1146/1/012016)
5. Dilawar Husain, Akbar Ahmad, **Md. Azhar**, Mehboob Ahmed "Ecological Footprint of Jatropha based Biodiesel Production at Low Scale" Paper No: ATFE-2021-33, ISBN: 978-93-5457-145-9.
6. **M. Azhar** and Siddiqui, M. Altamush (2013) "Thermodynamic Analysis of a Triple Effect Absorption Cycle" 2nd National Conference on Advances in Heat Transfer and Fluid Dynamics-2013, Department of Mechanical Engineering Aligarh Muslim University, Aligarh (India)
7. Mahvi Malik Shahzad, **Md. Azhar**, Mohd Bilal Naim Shaikh, Tausif Ahmad, Abdul Samad "Studies on microstructural, mechanical, tribological, and thermal behaviors of Al6061/ZrO2 nanocomposite", The first International Conference on Energy, Thermofluids and Materials Engineering, ICETME 2021 held online from 18 to 20 December, 2021.
8. Md Tanwir Alam, **Md Azhar**, Dilawar Hussain, Yasser Rafat. "Tensile Strength, Hardness and Microstructural Analysis of A356/Si3N4 Stir Casting Composites", The first International Conference on Energy, Thermofluids and Materials Engineering, ICETME 2021 held online from 18 to 20 December, 2021.
9. PS Arshi Banu, IM Mahbubul, **Md Azhar** "Solar-operated vapor absorption cooling system" Energy Production and Distribution Volume 2, 2023, Elsevier, <https://doi.org/10.1016/B978-0-443-18439-0.00012-4>

**Google Drive Link:** <https://drive.google.com/drive/folders/1KnNuOmfl4CsbPEgRzrggapPFDEQ6pace?usp=sharing>  
(For all Papers)

## RECOMMENDATIONS

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**Ph.D. Supervisor Name:** Prof. Mohammad Altamush Siddiqui

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**Ph.D. Examiner Name:** Prof. Andalib Tariq

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## PERSONAL DETAILS

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Father's name: Dr. Md. Ishtiyaque  
Date and Place of birth: Dec 03<sup>rd</sup>, 1985 (Gaya, Bihar)  
Nationality: Indian  
Status: Married  
Corresponding Address: Flat No-7, Mansoorra Campus, Malegaon, Maharashtra (India)  
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Date: 11<sup>th</sup> Jan. 2023

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