PROF. SIRAJ AHMED

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AREAS OF INTEREST & RESEARCH

- **Wind Energy:** Resource Assessment, Flow Modeling, Remote Sensing, Wind Turbine Design and Performance Prediction, Site Selection, Wind-Farm Design, Project Development and Assessment.
- **Mechanical Engineering Design:** General Mechanical Engineering Design, Design of Mechanical Equipment, and Design against Fatigue & Fracture.

EDUCATIONAL QUALIFICATIONS

2005	**Ph.D.** — Rajiv Gandhi Proudyogiki Vishwavidyalaya (RGPV) Thesis: *Some Studies on Design and Performance of Horizontal Axis Wind Turbine Generators*
1992	**M.Tech. in Design of Mechanical Equipment** — Indian Institute of Technology, Delhi (IIT D)
1987	**B.E. in Mechanical Engineering** — MANIT Bhopal (formerly MACT) *Graduated with Distinction*
1982	**HSSCE** — PLSJ Model Government School, Jabalpur *Awarded Merit Scholarship*

RESEARCH & MENTORSHIP METRICS

> **Publications Summary:** Forty-five (45) Scopus-indexed research papers | **h-index:** 13 | **Citations:** 765
> **Research Mentorship:** 10 Ph.D. Scholars Graduated | 2 Currently Mentoring in Wind Energy.

PATENTS GRANTED

- **Disc on Disc Type Rolling Wear Testing Machine** (Patent No. 521250, Granted: 07.03.2024) — The Patent Office, Government of India.
- **Dual Wear Tribometer** (Patent No. 422991, Granted: 24.02.2023) — The Patent Office, Government of India.

BOOKS AUTHORED

- Siraj Ahmed, **WIND ENERGY: Theory and Practice**, 3rd Edition (2016), PHI Learning, Eastern Economy Edition, New Delhi. ISBN: 978-81-203-5163-9.
- Siraj Ahmed, **MECHANICAL ENGINEERING DESIGN**, (2014), PHI Learning, Eastern Economy Edition, New Delhi. ISBN: 978-81-203-4931-5.
- Pramod Sharma, Vilas Warudkar, and Siraj Ahmed, **DESIGN AND OPTIMIZATION OF 150 m WIND MONITORING TOWER In Indian Condition**, (2019), Lambert Academic Publishing. ISBN: 978-620-0-45608-3.
- Manish Vishwakarma, Amit Khare, and Siraj Ahmed, **Experimental Investigations to study the Effect of Coatings to Reduce Hydrogen Embrittlement of High-Strength Steels**, (2023), Walnut Publication. ISBN: 978-935911476-7.

BOOK CHAPTERS

- "Application of Remote Sensing in Wind Resource Assessment" (2020), *Encyclopaedia of Renewable and Sustainable Materials*, Vol. 3, pp. 265–276, Oxford: Elsevier.
- "Advancement in remote sensing of wind energy", *Advances in Clean Energy Technologies* (2021), pp. 207-233, Academic Press.
- "Tribological Behaviour of Carbide-Free Bainite in High Silicon Steel" (2021), *Advanced Materials and Manufacturing Processes*, 1st Edition, CRC Press, eBook ISBN: 978003093213.
- "Wind Resource Assessment" (2026), *Next-Generation Wind Energy Technology: Advances, Challenges, and Applications*, AAP Advances in Green Technologies for Sustainable Energy Solutions, Apple Academic Press.
- "Wind Data Processing and Analysis" (2026), *Next-Generation Wind Energy Technology: Advances, Challenges, and Applications*, AAP Advances in Green Technologies for Sustainable Energy Solutions, Apple Academic Press.

SPONSORED R&D AND CONSULTANCY PROJECTS

- **Sponsored R&D Projects:** Completed multiple external sponsored projects funded by prestigious government bodies including the Board of Research in Nuclear Sciences (BRNS, BARC, GoI), Ministry of Human Resource Development (MHRD, GoI), Department of Science and Technology (DST, GoI), Ministry of Science and Technology (MST, GoI), and the Science and Engineering Research Council (SERC) Scheme for Young Scientists.
- **Consultancy Projects:** Successfully completed more than 15 major industrial consultancy projects, primarily specializing in wind energy resource assessment and system design.

SUBJECTS TAUGHT

B.Tech. Level	Wind Energy Technology, Design of Machine Elements, Machine Design, CADD, Advanced Machine Design

M.Tech. Level	Wind Turbine Design, Design of Mechanical Equipment, Design against Fatigue & Fracture

TECHNICAL TRAINING

- **Remote Sensing for Wind Energy** (2013) — DTU Wind Energy, Technical University of Denmark, Denmark.
- **Wind Energy Systems** (1995-1996) — University of Salford, United Kingdom (6-Month Advanced Training).

ADMINISTRATIVE EXPERIENCE & LEADERSHIP

- **Head of the Department (2013–2015):** Department of Mechanical Engineering, MANIT Bhopal. Successfully led the B.Tech. Mechanical Engineering programme to achieve a prestigious 5-year 'Grade-A' Accreditation from the National Board of Accreditation (NBA).
- **Institutional Leadership & Coordination:** Extensive experience as PG Programme Coordinator, Research Committees Member, Faculty Recruitment & Scrutiny Committees Member, Warden, Chairman of the Council of Wardens, and Joint Controller of Examinations.
- **External Governance & Panels:** Served as Senate Member (External Expert) for NIT Raipur; Member of the Service Selection Board (SSB); Empaneled Subject Expert for Ph.D. Research Examinations at Anna University, Osmania University, NIT Hamirpur, NIT Jaipur, NIT Srinagar, NIT Raipur, among others.
- **Conferences & STTPs:** Organized 3 International Conferences on Renewable Energy serving as Chairman/Secretary. Conducted 5 Short Term Training Programmes (STTPs) focused on Wind Energy Technology, collaborating directly with IIT BHU and NIT Allahabad.

SELECTED INVITED, EXPERT & GUEST LECTURES

Delivered **more than 100 invited/expert lectures** on various advanced aspects of Wind Energy Technology across prominent institutions globally and domestically:

- **International:** University of Jordan (Amman), University of Malaysia (Kuching), Institution of Engineers Sri Lanka (Colombo), etc.
- **National:** Various IITs, NITs, Indian Institute of Forest Management (IIFM), Institution of Engineers India (IEI), Delhi Technological University (DTU), Bharat Heavy Electricals Limited (BHEL), etc.
- **Key Lecture Series:**
  - **2026:** Online series on "Wind Resource Assessment and Aerodynamic Design of Wind Turbine" under the Advanced Programme in Renewable & Sustainable Energy Management, DTU Delhi.
  - **2017–2024:** Series on "Wind Energy Technology, REM, and Sustainable Energy Transition" for the PGDFM Program, IIFM Bhopal.
  - **2015–2016:** Series on "Machine Design (Fatigue, Gear, and Design of Shaft)" for Trainee Engineers at BHEL HRD Centre, Bhopal.

INTERNATIONAL EXPOSURE & VISITS

- **Jordan (2013):** Keynote Speaker on Wind Energy at the International Conference on Renewable Energy (GCREEDER 2013), University of Jordan, Amman.
- **Denmark (2013):** Technical Training in Remote Sensing in Wind Energy at DTU Wind Energy.
- **Sri Lanka (2012):** Resource Person for Wind Energy at the International Conference on Clean and Green Energy.
- **Malaysia (2011):** Invited Presenter at the International Conference on Renewable Energy.
- **USA (2008 & 2009):** Industrial engagement for a Consultancy Project on Wind Energy Development.
- **China (2007):** Participant & Speaker at the International Conference on Wind Energy.
- **United Kingdom (1995-96):** Six-month intensive Technical Training on Wind Energy at the University of Salford.

INSTITUTIONAL MOUS EXECUTED

- **National Institute of Wind Energy (NIWE, MNRE GoI), Chennai (2003-05):** Established a Wind Energy Laboratory, developed a Wind Resource Assessment Facility, and installed active Wind Monitoring Stations.
- **Environmental Assessment Division, BARC, Mumbai (2010-13):** Collaborated on "Dust Emission Monitoring and its Modelling (Wind Related Studies)" focusing on dust emission assessment at Jaduguda Uranium Mines, Jharkhand.

SELECTED NATIONAL ARTICLES PUBLISHED

Published several articles of national importance on Wind Energy developments in the Ministry of New and Renewable Energy (MNRE, GoI) official publication, **Akshay Urja**:

- "Remote Sensing Application in Wind Energy" [2014]
- "Re-Powering the Wind Power" [2015]
- "Wind!" [2016]
- "Vibrant Winds Blowing Across India" [2016]

AWARDS & APPRECIATIONS

- **Letter of Appreciation (2014):** Conferred by MANIT Bhopal for outstanding "Contribution to MANIT to Aim for Centre of Excellence".