


Brief Biodata

Name: Dr. Anshul Varshney

Designation:	Scientist	
DP No. and Name:	D#1.08, Fluid Flow Metrology Section	
DU No. and Name:	D#1.0, Physico-Mechanical Metrology Division	
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Date of Joining CSIR-NPL:	14-10-2020	
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Research Area/ Interest

- Fluid Flow Metrology
- Renewable Energy Applications
- Electrical Machines and Drives
- Electric Vehicles
- Designing of Power Electronics Converters
- Modeling and simulation of AC/DC, DC/DC and DC/AC power converters and control of electric drives.

Educational Qualifications

(Please write latest qualification first)

Degree	Subject	University/ Institute	Year
Ph.D.	Electrical Engineering (Power Electronics, Electrical Machines and Drives)	Indian Institute of Technology Delhi, new Delhi	2022
M.Tech (University Gold Medalist)	Instrumentation & Control Engineering	Sant Longowal Institute of Engineering and Technology Longowal (CFTI/Deemed University), Sangrur, Punjab	2010
B.Tech (First Division)	Electronics & Communication Engineering	Uttar Pradesh Technical University Lucknow, Uttar Pradesh	2008
Diploma (Gold Medalist)	Chemical Technology	Board of Technical Education, Uttar Pradesh	2005

No. of Publications in SCI Journals	No. of Publications in non-SCI Journals	No. of Publications in Conference Proceedings	Books	Total
9	-	25		34

Academic / Research Experience

Grade / Post	Institute	Duration		Research Field
		From	To	
Scientist	CSIR-National Physical Laboratory, New Delhi	14-10-2020	Present	Research and development in Fluid Flow metrology
JRF	Indian Institute of Technology Delhi	January 2015	December 2017	R & D in Renewable Energy Applications, Power Electronics, Electrical Machines and Drives
SRF	Indian Institute of Technology Delhi	January 2018	October 2020	R & D in Renewable Energy Applications, Power Electronics, Electrical Machines and Drives
Assistant Professor (Electrical Engineering)	Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur, Punjab, India.	August 2012	January 2015	Teaching (Diploma, UG and PG courses) and Administration Assistant Professor (Electrical Engineering)

No. of Publications-28

Selected Publications

- [1] Saurabh Mishra, Bhim Singh and **Anshul Varshney**, "Adaptive Flux Based Speed Estimation of Syn-Rel Motor Drive for Electric Vehicle with Solar-PV Assistance," *IEEE Transactions on Industry Applications*, March, 2024.
- [2] **Anshul Varshney**, N. Garg, K. S. Nagla, T. S. Nair, S. K. Jaiswal, S. Yadav and D. K. Aswal, "Challenges in Sensors Technology for Industry 4.0 for Futuristic Metrological Applications," *MAPAN-Journal of Metrology Society of India*, April 2021(online), DOI: 10.1007/s12647-021-00453-1.
- [3] **Anshul Varshney**, Utkarsh Sharma and Bhim Singh, "Adaptive d-Axis Current Control of RSM for Photovoltaic Water Pumping Incorporating Cross Saturation," *IEEE Transactions on Industrial Informatics*, vol. 16, no. 10, pp. 6487-6498, Oct. 2020.
- [4] **Anshul Varshney**, Utkarsh Sharma and Bhim Singh, "An Intelligent Grid Integrated Solar PV Array Fed RSM Drive Based Water Pumping System," *IEEE Transactions on Industry applications*, vol. 57, no. 2, pp. 1818-1829, March 2021.

Patents-5

- [1] **Bhim Singh**, Saurabh Mishra and Anshul Varshney, "System for Enhancing Driving Range of a Light Electric Vehicle Based on Synchronous Reluctance Motor," **Granted Indian Patent No. 529320 on March 20, 2024.**
- [2] **Bhim Singh**, and Anshul Varshney, "Hybrid Water Pumping System," **Granted Indian Patent No. 501201 on January 19, 2024.**
- [3] **Bhim Singh** and Anshul Varshney, "A Single Stage Solar PV Array Fed Water Pumping System and Method Thereof," **Granted Indian Patent No. 461533, on October 23, 2023.**
- [4] **Bhim Singh**, Anshul Varshney and Utkarsh Sharma, "A Grid Integrated Solar Photovoltaic Based Water Pump Driven by Synchronous Reluctance Motor," **Granted Indian Patent No. 439419, on July 19, 2023.**
- [5] **Bhim Singh**, Anshul Varshney and Utkarsh Sharma, "A Single Phase Grid Interactive Synchronous Reluctance Motor Driven Multipurpose and Multifunctional Solar Water Pump," Pending Indian Patent No. **202111039134**, filed on August 30th, 2021.

Current Activities

(Not more than 100 words)

Research in the area of Power Electronics, Electrical Machines & Drives, Renewable Energy Applications, Electric Vehicle, Smart Grid and Microgrid, Research and development in water flow metrology (**Primary Water Flow Calibration Facility**), participation in intercomparison exercises, operation, maintenance, upgradation and dissemination of the standards and measurement capabilities to various users, Operation, maintenance, upgradation and dissemination of the **Primary Water Meter Testing Facility** to various users and Participation in, operation, maintenance, upgradation and dissemination of the **Gas Flow Calibration System/ Facility** capabilities to various users.

Honour(s)/Award(s)/ Fellowship(s)

- Recipient of 2nd Helping Others Programme (HOPE) Award at 1st IEEE Industrial Electronics Society Annual On-Line Conference (ONCON) 2022 during 9-11 December 2022.
- Participated in BRICS young scientist conclave organized by DST India, held at Xieman, China.
- Editor of IETE Journal of Research
- University Gold Medalist in M.Tech
- Gold Medalist in Diploma
- Best Paper Award in National conference on Computational Techniques in Renewable Energy Systems (CTRES-2019), SLIET Longowal.
- Executive Committee member of IEEE Delhi Section since 2023.
- Executive Committee member of IEEE Power Electronics-Industrial Electronics Delhi Chapter since 2022.

Contributions to AcSIR

- ❖ Assistant Professor, AcSIR
- ❖ Deputy Warden, JRF Hostel

Membership of Professional Societies/ Institutions

- Life Fellow, IETE
- Senior Member, IEEE, U.S.A and Associated Societies.
- Life Member, Metrology Society of India.
- Member, International Association of Engineers.

Any other Information

(Not more than 100 words)

- Board of Studies Member of DAV University Jalandhar.
- Board of Studies Member of NIT Uttarakhand.
- External Expert Member of Board of Studies, EIE Department SLIET Longowal (2018 & 2019).
- Technical Program Committee Associate Member at IEEE IEEMA Engineer Infinite Conference (eTechNxT-2018), New Delhi.
- Managed procurement, installation, working and documentation for many projects sponsored by DST.
- Participated in young scientist conference at India International Science Festival in 2015 and 2016.
- Member of BOS, EIE Department SLIET Longowal (2013-2014).
- Member of University Examination Co-ordination Committee at SLIET Longowal.
- Convener of Technical Committee in national conference on RACTEE-2010, SLIET, Longowal.
- Participated In N.S.S Programme.