

Dr. Puneet Azad

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Dr. Puneet Azad is working in this Institute since 2002. He fulfills all his duties of teaching, administration and research with keen interest. He has taught several courses to B.Tech students such as Communication systems, Digital Communication, Electronic devices, Digital Electronics, Signals and Systems, Digital signal processing, Wireless Communication, Analog Electronics, Telecommunication Networks. In research, he has explored different electronic materials for a variety of applications in low power electronics. His main contribution is towards designing electronic circuits for power optimization suitable for sensors. Energy-harvesting techniques such as triboelectricity, pyroelectricity, piezoelectricity and thermoelectricity have been used to harvest energy. His group is actively involved to sustainable energy solutions with main focus on materials engineering and designing energy efficient circuits. These technologies will be playing important role towards make in India mission and these devices are next generation technological solutions. His aim is to demonstrate proof of concepts based on above mentioned concepts. Various prototypes have been fabricated and reported in various journals of international repute.

Dr. Puneet has authored and published **15 research** papers in SCI indexed journals and contributed his work in eleven conferences He is currently supervising three students registered at GGSIPU University, Delhi. He has been awarded **Best Faculty Award** outstanding performance in academics and administration in MSIT in the year 2014. He also received **Research Excellence Certificate** in the year 2018 and 2019 for his contribution in research.

Dr. Puneet was the HOD of ECE Department during the year 2013-2019 and is currently the Dean Academics of our Institute. As HOD, he conducted various Seminars, Workshops, Industrial Visits for students and FDP for faculty. He has contributed significantly in the administration of the Institute and has played active role as convener of Joint Assessment Committee (JAC) for 4 years, GGSIPU Affiliation Committee, AICTE Approvals, MSIT Alumni Association, Inter College B.Tech Competition etc.

EDUCATION AND DEGREES AWARDED

- **Ph.D.** in “Energy Efficient Clustering Algorithms for Wireless Sensor Networks” from **Gautam Buddha University**, Greater Noida in 2014.
- **Master of Engineering (M.E.)** in Electronics and Communication from **Delhi College of Engineering**, Delhi in 2000.

- **B.E.** in Electronics from **Bhilai Institute of Technology** (Pt. Ravi Shankar Shukla University, Raipur), in 1999

AWARDS AND HONORS

- **Guest Editor Special Issue "Ferroelectric Materials for Energy Harvesting" of Crystals** (https://www.mdpi.com/journal/crystals/special_issues/Energy_Harvest)
- **Award of INSA Visiting Scientist Programme 2020-21**
- **Research Excellence Certificate** in recognition of an outstanding contribution to the quality of research in 2018 and 2019 in MSIT
- **Best Faculty Award 2014** for outstanding performance in academics and administration in MSIT
- **Graduate Aptitude Test of Engineering** (Gate' 99) with 94.7 percentile in 1999
- **Microsoft Certification** in desktop application in VC++ (MCSD)
- **Merit Certificate** in Mathematics in XII standard in 1994

KEY PUBLICATIONS

SCI Indexed Journals

1. Parul Chaudhary and **Puneet Azad**, "Energy harvesting from human biomechanical energy for health monitoring devices," **IETE Journal of Research (Taylor & Francis)**, vol.67, pp. 74-81, 2021 (Impact Factor: 1.125)
2. Deepshikha Yadav, **Puneet Azad** and Rahul Vaish, "Solar energy harvesting using candle-soot-coated thermoelectric materials," **Global Challenges (Wiley)**, vol.4, <https://doi.org/10.1002/gch2.201900080>, 2020 (Impact Factor: 4.306)
3. Parul Chaudhary, **Puneet Azad**, Energy harvesting using shoe embedded with piezoelectric material, **Journal of Electronic Materials (Springer)**, vol. 49, pp. 6455-64, August 2020 (Impact Factor: 1.774)
4. Khushboo and Puneet Azad, "Design and Analysis of a Synchronized Interface Circuit for Triboelectric Energy Harvesting," **Journal of Electronic Materials (Springer)**, vol. 49, pp. 2491–2501, 2020 (Impact Factor: 1.774)
5. **Puneet Azad**, Samriddhi Raut and Rahul Vaish "Candle soot coated egg carton material for oil water separation and detergent adsorption," **Bulletin of Material Science (Indian Academy of Sciences)**, vol.43, Article-7, 2020 (Impact Factor: 1.392)
6. Anuruddh Kumar, Sidhant Kumar, Satyanarayan Patel, Moolchand Sharma, **Puneet Azad**, Rahul Vaish, Rajeev Kumar, K.S. Srikanth, "Pyroelectric energy conversion harvesting using $Ba_{0.85}Sr_{0.15}Zr_{0.1}Ti_{0.9}O_3$ ceramics and its cement based composites," **Journal of Intelligent Material Systems and Structures (SAGE Publications)**, vol. 30, pp.869-877, 2019 (Impact Factor: 2.410)
7. **Puneet Azad**, Khushboo and Rahul Vaish, "Solar energy harvesting using pyroelectric effect associated with piezoelectric buzzer," **Physica Status Solidi (a) (Wiley)**, vol. 216, doi:10.1002/pssa.201900440, 2019 (Impact Factor: 1.759)
8. **Puneet Azad**, Moolchand Sharma and Rahul Vaish, "Diesel exhaust emission coated pyroelectric materials for improved thermal energy harvesting," **Global Challenges (Wiley)**, vol.3, 1800089, 2019 (Impact Factor: 4.306)

9. Khushboo and **Puneet Azad**, "Triboelectric energy harvester using human biomechanical motion for low power electronics," **Bulletin of Materials Science (Indian Academy of Sciences)**, vol. 42, <https://doi.org/10.1007/s12034-019-1801-9>, 2019 (Impact Factor: 1.392)
10. **Puneet Azad**, "Temperature controlled voltage regulated boost converter for thermoelectric energy harvesting," **IETE Journal of Research (Taylor & Francis)**, doi:10.1080/03772063.2019.1651678, 2019 (Impact Factor: 1.125)
11. Deepshikha Yadav and **Puneet Azad**, "Low-cost triboelectric sensor for speed measurement and weight estimation of vehicles," **IET Intelligent Transport Systems**, vol. 12, pp. 958-64, 2018 (Impact Factor: 2.48)
12. **Puneet Azad**, V.P. Singh and Rahul Vaish, "Candle soot-driven performance enhancement in pyroelectric energy conversion," **Journal of Electronic Materials (Springer)**, vol. 47, pp. 4721-30, 2018 (Impact Factor: 1.774)
13. Moolchand Sharma, V.P. Singh, Shatrughan Singh, **Puneet Azad**, Bouraoui Ilahi and Niyaz Ahamad Madhar, "Porous $Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O_3$ ceramics for pyroelectric applications," **Journal of Electronic Materials (Springer)**, vol. 47, pp. 4882-91, 2018 (Impact Factor: 1.774)
14. **Puneet Azad** and Rahul Vaish, "Portable triboelectric based wind energy harvester for low power application," **European Physical Journal Plus (Springer)**, vol. 132, pp.253-259, 2017 (Impact Factor: 3.228)
15. **Puneet Azad** and Vidushi Sharma "Pareto optimal clustering scheme using data aggregation for wireless sensor networks," **International Journal of Electronics (Taylor & Francis)**, vol. 102, No.7, pp.1165-1176, 2015 (Impact Factor: 1.004)

SCOPUS and Other referred Journals

1. **Puneet Azad** and Vidushi Sharma, "Energy efficient clustered scheme for Wireless sensor networks using multi-criteria decision making approach," **International Journal of Computer Aided Engineering and Technology, Inderscience**, vol. 6, No.3, pp.324-336, 2014
2. **Puneet Azad** and Vidushi Sharma "Cluster head selection in wireless sensor networks under fuzzy environment," **ISRN Sensor Networks, Hindawi Publishing Corporation**, vol. 2013, Article ID- 909086, [dx.doi.org/10.1155/2013/909086](https://doi.org/10.1155/2013/909086), pp.1-8, 2013
3. **Puneet Azad** and Vidushi Sharma "Maximum residual energy based clustering scheme for wireless sensor networks," **Advanced Science Focus, American Scientific Publishers, USA**, vol. 1, pp. 111-119, 2013

PAPERS IN INTERNATIONAL CONFERENCES

1. **Puneet Azad** and Rahul Vaish, "Large energy harvesting using simultaneous application of pyroelectric and thermoelectric materials," **IEEE Joint ISAF-ICE-EMF-IWPM-PFM conference - 2019 f2cπ2**, Lausanne, Switzerland, 14-19, 2019
2. Deepshikha Yadav and **Puneet Azad**, "Experimental analysis of power generation for ultra-low power wireless sensor nodes using various coatings on thermoelectric energy harvester," **IEEE 6th International Conference on Signal Processing and Integrated Networks (SPIN)**, Amity University, Noida, Mar 7-8, 2019
3. Khushboo and **Puneet Azad**, "Comparison of two design methods of triboelectric nanogenerator for building efficient energy harvesting and storage techniques," **Int. Conf.**

- Manufacturing, Advance Computing, Renewable Energy and Communication (MARC 2018), Springer**, HMR Institute of Technology and Management, July 19-20, 2018
4. Khushboo and **Puneet Azad**, "Design and implementation of conductor to dielectric lateral sliding TENG mode for low power electronics," **Int. Conf. of Signals, Machines and Automation (SIGMA 2018), Springer**, Netaji Subhash Institute of Technology, New Delhi, pp. 1499-1502, February 23-25, 2018.
 5. Deepshikha Yadav and **Puneet Azad**, "Design and implementation of robust low cost and low power prototype for generic counting system" **IEEE International Conference on Computing Communication and Automation (ICCCA2017)**, Galgotias University, G. Noida, pp. 1493-1498, May 5-6, 2017
 6. Parul Chaudhary and **Puneet Azad**, "Demonstration of double electrode vertical-sliding triboelectric generator" **IEEE International Conference on Computing Communication and Automation (ICCCA2017)**, Galgotias University, pp. 1483-1487, May 5-6, 2017
 7. Khushboo and **Puneet Azad**, "Triboelectric Nanogenerator based on Vertical Contact Separation Mode for Energy Harvesting" **IEEE International Conference on Computing Communication and Automation (ICCCA2017)**, Galgotias University, May 5-6, 2017
 8. **Puneet Azad**, "Single and double electrode based Nanogenerators for energy harvesting from different materials" **IEEE International conference on Computing for Sustainable Global Development (INDIACom)**, Bharati Vidyapeeth's College of Engineering, New Delhi, March 1-3, 2017
 9. **Puneet Azad**, "Energy harvesting from different materials using mechanical motion" **RSC-NPL Symposium on Advanced Nanomaterials for Energy**, October 7, 2016
 10. **Puneet Azad** and Vidushi Sharma "Clusterhead selection using multiple attribute decision making (MADM) approach in wireless sensor networks", **QSHINE 2013 - 9th International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness, Springer**, Gautam Buddha University, pp. 141-154, 11-12 January, 2013.

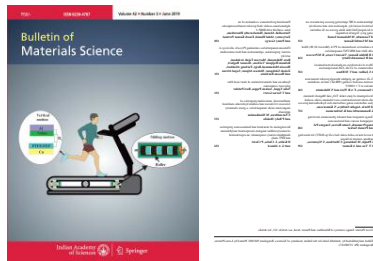
PAPERS IN NATIONAL CONFERENCES

1. **Puneet Azad** and Brahmjit Singh "Energy Efficient Clustering Scheme for Wireless Sensor Networks" National conference on Advancements in Communications, Computing and Signal Processing, Commune & School of Information and Communication Technology, Gautam Buddha University, pp. 25-28, April 2011
2. **Puneet Azad** and Vidushi Sharma, "A Multi-criterion Approach for Lifetime Enhancement using Pareto Optimal Solution in WSNs" Commune Conference on Advancements in Communications & Computing Systems (CACCS 2012), ITS Engineering College, G. Noida, 24-25 March 2012

PATENTS PUBLISHED

1. **IoT BASED SMART COMPLAINT BOX** (Patent filed on 15/01/2021 & Published on 22/01/2021, Application No: 202111001925, The Patent Office Journal No. 04/2021 dated 22/01/2021, Part 1 & Page No: 3103)

ARTICLES PUBLISHED ON COVER PAGE OF JOURNALS



Khushboo and **Puneet Azad**, “Trieboelectric energy harvester using human biomechanical motion for low power electronics,” **Bulletin of Materials Science (Indian Academy of Sciences)**, vol. 42, <https://doi.org/10.1007/s12034-019-1801-9>, 2019

BOOK CHAPTERS

- **Puneet Azad** and Vidushi Sharma, “**Clustering for Energy Efficiency in Wireless Sensor Networks**” Energy-Efficient Wireless Sensor Networks, CRC Press, Taylor & Francis Group, 2017
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