

## Dr. Nihit Bhatnagar

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## Work Experiences (4 Years):

- Working as Assistant Professor in Jodhpur Institute of Engineering and Technology, Jodhpur (From 08 November 2021 - 13 January 2022).
- Working as Assistant Professor (Contract) in Samrat Ashok Technological Institute, Vidisha (From 01 October 2021 - 01 November 2021).
- Working as Assistant Professor (NPIU under TEQIP-III Project) in Samrat Ashok Technological Institute, Vidisha (From 15 October 2018 - 30 September 2021).
- Worked as Guest Faculty in Govt. College of Engineering & Technology, Bikaner (From 01. August. 2015 – 18. February. 2016).
- Worked as Guest Faculty in Govt. College of Engineering & Technology, Bikaner (From 07. August. 2014 – 31. May. 2015).

## Publications:

### • Journals:

1. **N. Bhatnagar** and S. Joshi, “Stochastic diffusivity with time-varying trajectory in mobile molecular communication: Performance analysis and channel modeling,” *IEEE Transactions on Molecular, Biological, and Multi-Scale Communications*, vol. 11, no. 3, pp. 359-370, Sept. 2025.
2. **N. Bhatnagar** and S. Joshi, “Characterization and performance optimization of heterogeneous media-based mobile molecular communication systems,” *IEEE Transactions on Molecular, Biological, and Multi-Scale Communications*, vol. 11, no. 1, pp. 128-133, Mar. 2025.
3. **N. Bhatnagar**, A. Roy, and S. Joshi, “Silence-based multi-type hybrid transmission scheme for mobile molecular communication system,” *IEEE Transactions on NanoBioscience*, vol. 25, no. 1, pp. 70-79, Jan. 2026.
4. **N. Bhatnagar** and S. Joshi, “Time varying heterogeneous mobile molecular communication in fluid medium: A stochastic diffusivity approach,” *IEEE Transactions on Molecular, Biological, and Multi-Scale Communications*. (under review)
5. D. Sheth, **N. Bhatnagar**, S. Joshi, and S. Tripathi, “Optimizing signal fidelity using time-reversal in molecular communication systems,” *IEEE Transactions on NanoBioscience*. (under review)
6. **N. Bhatnagar** and S. Joshi, “Time Varying Channel Modelling of Heterogeneous MIMO Mobile Molecular Communication Systems,” *IEEE Transactions on Communication*. (under review)

## • Conferences:

1. **N. Bhatnagar** and S. Joshi, “Performance and statistical characterization of stochastic diffusion-based molecular communication system,” in *Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Valencia, Spain, Sept. 2024, Page No. 1-6.
2. **N. Bhatnagar** and S. Joshi, “Characterization of stochastic diffusivity-based information particles in molecular communication systems,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*, Dubai, United Arab Emirates, Apr., 2024, Page No. 1-6.
3. **N. Bhatnagar** and S. Joshi, “Error analysis of molecular communications system with hybrid channel transmission scheme,” in *Proc. IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)*, Jaipur, India, Dec. 2023, Page No. 668-673.
4. **N. Bhatnagar**, A. Sirvee, and M. M. Sharma, “Energy efficient communication schemes in multi-relay WSNs with power allocation,” *12<sup>th</sup> International Annual IEEE India Conference (INDICON)*, Dec. 2015, pp. 1-6.
5. **N. Bhatnagar**, A. Singh, and S. Joshi, “Rotational Diffusion-based Transmission Scheme for Mobile Molecular Communication System” in *Proc. IEEE International Conference on Communications (ICC)*. (under review)

## Professional Achievements and Awards:

- Received the BITS International Travel Award (ITA) to present the paper titled “Performance and statistical characterization of stochastic diffusion-based molecular communication system,” at the IEEE PIMRC 2024, held in Valencia, Spain, from September 02-05, 2024.
- Received “Special Mention Award” for Three Minute Thesis (3MT) presentation titled “*Modeling of Diffusive Mobile Molecular Communication in Heterogeneous Media*” at Research Scholars’ Day, BITS Pilani (July 23, 2025).

## Academic Record

### 1. Ph.D. **Beyond 5G Communication (Department of Electrical and Electronics Engineering)**

**Thesis title: Modeling and Analysis of Molecular Communication-Based Next-Generation Networks**

**Supervisor: Prof. Sandeep Joshi, Associate Professor EEE Department, BITS Pilani (Pilani Campus)**

Institution Name	Year of passing	CGPA	Division
Birla Institute of Technology and Science Pilani, (Pilani Campus), Rajasthan, India	2025	10	Ist

## 2. M. Tech.

### Computer Science and Engineering (Specialization: Digital Communication)

Institution Name	Year of passing	CGPA	Division
ABV- Indian Institute of Information Technology and Management, Gwalior, India	2014	7.9	I <sup>st</sup>

### M. Tech. Research Project:

- “Energy Efficient Communication Schemes in Multi-Relay WSNs with Power Allocation” as a M. Tech. thesis under the guidance of Professor Aditya Trivedi (IIT Gwalior) and Professor Matadeen Bansal (IIT Jabalpur).

## 3. B. Tech.

### Branch: Electronics and Communication Engineering

Institution Name	Year of passing	% Of marks obtained	Division
College of Engineering & Technology Bikaner (Rajasthan Technology University, Kota), India	2011	72.75%	I <sup>st</sup>

### International Research Exposure:

- Visited Spain to present the paper titled “Performance and statistical characterization of stochastic diffusion-based molecular communication system,” at the *IEEE PIMRC 2024*, held in **Valencia, Spain**, from September 02/08/2024 to 05/08/2024.

### Travel Grant and Fellowships:

- Ph.D. Institute fellowship for pursuing Ph.D. by BITS Pilani.
- BITS international travel grant (up to 1.5 lakh) to present the conference paper at the *IEEE PIMRC 2024*, held in **Valencia, Spain**, from September 02-05, 2024.
- BITS travel grant for national conference to present the conference paper at the *IEEE ANTS 2023*, held in Jaipur, India, from December 17-20, 2024.
- GATE scholarship for pursuing M.Tech. by Ministry of Human Resource Development, Govt. of India.

#### 4. Pre – Engineering

Level	Name of the Institution/ Board	% Of marks obtained	Division
12 <sup>th</sup>	B. N. Sr. Sec. School, Bikaner (Board of Secondary Education, Ajmer)	69.23%	I <sup>st</sup>
10 <sup>th</sup>	R. T. R. R. Sr. Sec. School No.4, Bikaner (Board of Secondary Education, Ajmer)	69.33%	I <sup>st</sup>

#### 5. Software Skills (Programming languages / Operating Systems / Application Packages, etc.)

Languages	C
Simulation Tools/Software	MATLAB, Overleaf (Scientific Writing Tool)
Operating System	Windows

#### Competitive Exam Qualified:

- Secured 97.38, 95.97, 96.47, and 95.67 percentile in GATE-2012, GATE-2017, GATE-2018, and GATE-2020 respectively. GATE qualified in: 2013, 2016.

#### Academic duties:

- Lab instructor during Ph.D. in Analog Electronics, Digital Electronics, and Communication System.
- Worked as exam coordinator in departmental exams committee for B. Tech. and M. Tech. semester exams in SATI, Vidisha.

#### Personal skills:

- Dedicated to teaching & research profession.
- Comprehensive problem-solving abilities.
- Good verbal and written communication skills.
- Willingness to learn and a good team player.

#### **Personal Details:**

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Father's Name : Mr. Rakesh Kumar Bhatnagar  
Mother's Name : Mrs. Minakshi Bhatnagar  
Spouse : Mrs. Priyanka Saxena

Nationality : Indian  
Date of Birth : 13<sup>th</sup> October 1990  
Languages known : English, Hindi  
Religion : Hindu  
Marital Status : Married

**Declaration:**

I hereby declare that the above information is true and correct to the best of my knowledge.

Date: 16/01/2026

Dr. Nihit Bhatnagar