

# National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

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## Curriculum Vitae



### Brief Profile:

**Dr. Hemant Kumar** obtained his BTech (with Honors) in ECE from Kurukshetra University in 2010 and Ph.D. in Electrical Engineering from IIT Bombay in 2018. He has worked on various consultancy projects sponsored by government organizations and private industries during his Ph.D. at IIT Bombay. He has been rewarded for his commendable engagement as a teaching assistant for the course “Antennas” offered through MOOCs, NPTEL, IIT Bombay. He has delivered many guest lectures and invited talks in the field of Antennas and Microwave Circuits in various FDP/STTP/QIP programs.

Currently, He is working as an Assistant Professor in the Department of Electronics and Communication Engineering at NIT Tiruchirappalli. His research interests include antennas, microwave passive circuits, monopulse radar, and microwave imaging. He is serving as an Editor at the IETE Journal of Research. He is also a reviewer in a number of national/international journals including IEEE Access, IET MAP, IETE, etc. He is a senior member of IEEE, life member of IETE, ATMS, and IEI. He has more than 20 research articles in reputed national/international journals and conferences, and one Indian patent is being filed.

1. Name : Dr. Hemant Kumar
2. Designation: : Assistant Professor
3. Office Address: : #216, Department of ECE
4. Telephone (Direct) (Optional):  
Telephone : Extn (Optional):  
0431 250 3328  
Mobile (Optional): 08369070783
5. Email (Primary): hemant@nitt.edu Email (Secondary) :  
hemant.kumar.c2018@iitbombay.org
6. Field(s) of Specialization:  
Antennas and Microwave Circuits, Radar, and  
MicrowaMillimeter-wave Imaging

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### 7. Employment Profile

Job Title	Employer	From	To
Assistant Professor	NIT Tiruchirappalli	19-06-2020	Till Now
Assistant Professor	IIIT Allahabad	03-12-2019	15-06-2020
Assistant Professor	IIIT Nagpur	22-07-2019	02-12-2019
Assistant Professor	VJTI Mumbai	26-07-2018	05-07-2019
Research Associate	IIT Bombay	01-01-2018	30-06-2018

### 8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	IIT Bombay, Maharashtra	2013-18	<b>CPI = 9.28</b>	Electrical Engg. (RF & Microwave)
B.Tech.	Kurukshetra University, Haryana	2006-10	<b>80.5% (Gold Medalist)</b>	Electronics & Communication Engg.
Intermediate / +2	HBSE, Bhiwani, Haryana	2005-06	<b>GPA = 9.8 (Rank = 1)</b>	--
Matriculation	HBSE, Bhiwani, Haryana	2003-04	76.3%	--

### 9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
Coordinator	Virtual Lab	2020	2022
Member	UG/PG NBA Committee	2020	Present
Member	PG/PhD Academic Reform Committee	2020	Present

### 10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
Editor	IETE Journal of Research	August 2022	Present
Hostel Warden	IIIT Nagpur	August 2019	November 2019

### 11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2018	Young Scientist Speaker	IEEE-INAE Workshop on Electromagnetics (IWE 2018)

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2021	Senior Member, IEEE	IEEE
2016	Excellence in Teaching Assistant	IIT Bombay
2018	Hostel Organizational Color and Roll of Honour	IIT Bombay
2010	Gold Medal by Haryana State Governor	Kurukshetra University

### 12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
2013	PhD Fellowship	MHRD	Jan. 2013	Dec. 2017

### 13. Details of Academic Work

(i) Curriculum Development:

Microwave Passive Circuits, Antennas Design

(ii) Courses taught at Postgraduate and Undergraduate levels

Microwave Components and Circuits, July 2022-23

Network Analysis, July 2022-23

Transmission Lines and Waveguides, Jan. 2021-22

RF MEMS Circuit Design (IIIT Trichy, Jan. 2021-22)

Electrodynamics and Electromagnetic Waves, July 2020-21, July 2021-22

Microwave Electronics, July 2021-22

Communication Systems, July 2020-21

Basics of Electrical and Electronics Engineering, July 2020-21

Principles of Communication Engineering, Jan. 2019-20

Basics of Electrical Engineering, July 2019-20

Signals and Systems, Jan. 2018-19

Antenna Design, Jan. 2018-19

Electromagnetic Fields and Waves, July 2018-19

Electromagnetic Wave Engineering, July 2018-19

(iii) Projects guided at Postgraduate level

Antenna Design And Optimization Using Machine Learning, Dual band slotted

Microstrip antenna for Wi-fi and Wi-max applications, RF Energy Harvesting

System using 180nm MOS Technology

(iv) Other contribution(s)

### 14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Desing and Development of Low-Cost Planar Broadband Antennas	NIT Tiruchirappalli	04/2021	03/2023	Ongoing

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### 15. Number of PhDs guided - NA

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award

### 16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue

### 17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue
Five-Day Training Program on “Antenna and Microwave Circuits Design Using CST and TaraNg”	National	29/10/2021 to 02/11/2021	Coordinator	ECE, NITT
one-week workshop on Electromagnetic Fields and Waves: Theory and Applications	National	1st-5th July, 2019	Co-Coordinator	IIT Bombay

### 18. Invited Talks delivered

Topic	Date	Inviting Organization

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### 19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member )	Organization	Membership No. with date
Senior Member	IEEE	Since July 2021
Lifetime Corporate Member	IETE	Since May 2020
Lifetime Corporate Member	IEI	Since Jan 2021
Lifetime Member	ATMS	Since March 2021

### 20. Academic Foreign Visits

Country	Duration of Visit	Programme
France	One week - 2017	EuCAP Conference
Germany	One week – 2015	ISMOT Conference

### 21. Publications

#### (A) Refereed Research Journals:

1. Hemant Kumar and Girish Kumar, “Coaxial Feed Pyramidal Horn Antenna with High Efficiency”, in IETE Journal of Research, Vol. 64(1), pp. 51-58, Jan. 2018.
2. Hemant Kumar, Mahima Arrawatia and Girish Kumar, “Broadband planar Log-periodic Dipole Array Antenna based RF Energy Harvesting System”, in IETE Journal of Research, Vol. 65(1), pp. 39-43, Jan. 2019.
3. Hemant Kumar and Girish Kumar, “A Broadband Planar Modified Quasi-Yagi Based on Log-Periodic Antenna”, Progress in Electromagnetics Research Letters, Vol. 73, pp. 23-30, Jan. 2018.
4. Hemant Kumar and Girish Kumar, “Monopulse Comparators [Application Notes],” in IEEE Microwave Magazine, vol. 20, no. 3, pp. 13-100, March 2019.
5. H. Kumar and G. Kumar, "Broadband monopulse microstrip antenna array for X-band monopulse tracking," in IET Microwaves, Antennas & Propagation, vol. 12, no. 13, pp. 2109-2114, 31 10 2018.
6. Suman P. Wadkar, S. M. Rathod, Hemant Kumar, Girish Kumar and B. G. Hogade, “Normal Mode Helical Antenna on Small Circular Ground Plane” in IETE Journal of Research, Vol. 66(5), pp. 617-624, May 2020.
7. Ankit Nimbolkar, Hemant Kumar & Girish Kumar (2021) Alternatives to Metamaterial Based Antennas for Gain and Bandwidth Enhancement, IETE Journal of Research, DOI: 10.1080/03772063.2021.1886878

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8. Syed Maaiz Syed Shabbeer Basha, Srivatsan Sridhar, Sandeep Kaushik, and Hemant Kumar, "MilliNet: Applied Deep Learning Technique for Millimeter Wave Based Object Detection and Classification" accepted and published in IETE Journal of Research 2022.

### (B) Conferences/Workshops/Symposia Proceedings

1. M. Gupta and H. Kumar, "Compact and Broadband Uniplanar Quasi-Yagi Microstrip Antenna", accepted and presented in 2021 IEEE Indian Conference on Antennas and Propagation (InCAP), Jaipur, India, 2021.
2. V. Dinakaran and H. Kumar, "Analyzing 3D Smith Chart Using MATLAB: An Insightful and Illustrative Approach", accepted and presented in 2021 IEEE Indian Conference on Antennas and Propagation (InCAP), Jaipur, India, 2021.
3. H. Kumar and G. Kumar, "Cavity Backed Substrate Integrated Waveguide Horn Antenna with Enhanced Gain for 5G Applications," 2018 IEEE Indian Conference on Antennas and Propagation (InCAP), Hyderabad, India, 2018, pp. 1-4.
4. Hemant Kumar and Girish Kumar, "Coaxial fed Substrate Integrated Waveguide (SIW) H-plane Horn Antenna with Air-filled Concave Structure," in IEEE International Symposium on Antennas and Propagation (APSURSI), Boston, USA, July 2018, pp. 1919-1920.
5. S. M. Rathod, Suman P. Wadkar, Hemant Kumar, Girish Kumar and B. G. Hogade, "Effect of variation of height on the performance of normal mode helical antenna," in 2017 IEEE Applied electromagnetics conference, Aurangabad, Maharashtra, Dec. 2017.
6. Arun Kumar Singh, Hemant Kumar, Girish Kumar, and Malay Ranjan Tripathy, "Seven Element Wideband Planar Log-periodic Antenna for TVWS Base Station," Progress in Electromagnetics Research Symposium (PIERS), Singapore, Nov. 2017.
7. Hemant Kumar and Girish Kumar, "Compact planar log-Periodic dipole array based Yagi- Udaantenna," 2017 IEEE International Symposium on Antennas and Propagation (APSURSI), San Diego, USA, July 2017, pp. 2157-2158.
8. Hemant Kumar and Girish Kumar, "Compact planar Yagi-Uda antenna with improved characteristics," 2017 11th European Conference on Antennas and Propagation (EUCAP), Paris, 2017, pp. 2008-2012.
9. Suman P. Wadkar, S. M. Rathod, Hemant Kumar, Girish Kumar and B. G. Hogade, "Normal mode helical antenna at 1.8 GHz with small circular ground plane", 2016 International Symposium on Antennas and Propagation (APSYM), Cochin, 2016, pp. 1-4.
10. Sumit Sharma, Hemant Kumar and Girish Kumar, "Single feed dual band circularly polarized stub loaded tunable microstrip patch antenna", 2016 Asia-Pacific Microwave Conference (APMC), New Delhi, Dec. 2016, pp. 1- 4.

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11. Hemant Kumar and Girish Kumar, "An inverted suspended microstrip antenna array integrated with ratrace comparator at X-Band for monopulse tracking," 2016 Asia-Pacific Microwave Conference (APMC), New Delhi, Dec. 2016, pp. 1- 4.
12. H. Kumar, G. Kumar, Y. Verma and P. K. Mishra, "Compact waveguide monopulse comparator at Ka- band for monopulse tracking," 2016 IEEE International Symposium on Antennas and Propagation (APSURSI), Fajardo, USA, July 2016, pp. 1357-1358.
13. Hemant Kumar and Girish Kumar, "Microstrip antenna array with ratrace comparator at X-band for monopulse tracking radar," 2016 IEEE International Symposium on Antennas and Propagation (APSURSI), Fajardo, USA, July 2016, pp. 513-514.
14. Hemant Kumar and Girish Kumar, "Design and Parametric Analysis of Pyramidal Horn Antenna with High Efficiency," proceeding of International Symposium on Microwave and Optical Technology ISMOT 2015, Dresden, Germany, pp. 134-137.