

# CURRICULUM VITAE

1. **Name in full** : DR. VINAY KUMAR
2. **Father's Name** : Mr. Ram Prit Tripathi
3. **Date of Birth** : 01-02-1981
4. **Nationality** : Indian
5. **Address for Communication:** : Dr. Vinay Kumar  
Department of Electronics & Communication Engineering  
MNNIT Allahabad, Prayagraj, Uttar Pradesh- 211 004, India
6. **Email address and Links** : [vinay.k@mnnit.ac.in](mailto:vinay.k@mnnit.ac.in), [vinayrel01@gmail.com](mailto:vinayrel01@gmail.com)  
Google Scholar: (<http://scholar.google.co.in/citations?user=1dAf-DwAAAAJ&hl=en>)  
Research Gate: ([https://www.researchgate.net/profile/Vinay\\_Kumar342](https://www.researchgate.net/profile/Vinay_Kumar342))  
ORCID ID (<https://orcid.org/0000-0002-3759-9091>)  
Researcherid: (<http://www.researcherid.com/rid/T-8137-2018>)
7. **Contact Nos.** : +91-8830156094 (MOBILE)
8. **Post.** : Assistant Professor Grade-I
9. **International Collaboration** : Thailand, Russia, France and Finland

**10. Educational qualifications:**

| <b>Examination Passed</b>                      | <b>Board/University</b>                                   | <b>Year</b> | <b>Percentage of Marks obtained &amp; Division</b> | <b>Subjects/Specialization</b>      |
|--|---|-------------|--|-------------------------------------|
| B. Tech. (Electronics and Communication Engg.) | Uttar Pradesh Technical University Lucknow                | 2006        | 71.18 with 1st Division                            | Electronics and Communication Engg. |
| M. Tech. (Digital System)                      | Motilal Nehru National Institute of Technology, Allahabad | 2010        | 8.44 CGPA with 1st Division                        | Communication Engg.                 |
| Ph.D. (Electronics & Communication Engg.)      | Motilal Nehru National Institute of Technology, Allahabad | 2015        | --   | Electronics & Communication Engg.   |

**11. Field/Area of Specialization** : Communication Engineering and Networking

**12. List of all previous employment:**

| <b>S.No.</b> | <b>Position held</b>  | <b>Pay Scale</b>   | <b>Experience</b>           |                            |  |
|--------------|---|--|-----------------------------|----------------------------|--|
|              |   |  | <b>From</b>                 | <b>To</b>                  | <b>Nature of Work performed in Academic/Industry</b> |
| (i)          | Assistant Professor-Grade I (Motilal Nehru National Institute of Technology, Allahabad) | Basic Pay Rs. 101500 (as per 7 <sup>th</sup> CPC) Level 12 | 16 <sup>th</sup> July 2019  | Till date                  | Teaching, Research and Administrative                |
| (ii)         | Assistant Professor-Grade II (Visvesvaraya National Institute of Technology, Nagpur)    | Basic Pay Rs. 66,000 (as per 7 <sup>th</sup> CPC)          | 29 <sup>th</sup> March 2012 | 15 <sup>th</sup> July 2019 | Teaching, Research and Administrative                |

### 13. Administrative Experience:

| Designation                            | Number of Years of Experience | Details                                |
|--|-------------------------------|--|
| In charge of Telephone and Maintenance | 1 Years                       | Telephone Maintenance                  |
| Warden (Boys Hostel)                   | 05 Years                      | Hostel Administration of the Institute |

### 14. Externally Sponsored R&D Project[s] as PI/Co-PI

| Sl. No. | Title of Project   | Period                               | Sponsoring Organisation   | Amount [in lakhs]  | Co-Investigator[s], if any  | Role |
|---------|--|--------------------------------------|---|--------------------|---|------|
| 1.      | Design and Development of Underwater Sensor Networks using Magnetic Induction based Communications   | March – 2017 to March -2020          | SERB, Govt. of India  | Approx. 25.00      | ....  | PI   |
| 2.      | To develop a testbed based on Magnetic Induction (MI) communications for Agricultural soil condition monitoring (water concentration, minerals, and toxic chemicals) | December-April 2019 to December-2022 | MEITY, Govt. of India   | Approx. 41.00      | Dr. Rajeev Tripathi, Director, MNNIT, Allahabad<br><br>Dr. Joydeep Sengupta, Asst. Professor, VNIT, Nagpur. | PI   |
| 3       | Wireless Body area Networks: A magnetic Induction Communication Perspective  | May 2019-May 2022                    | International Project Between Govt of India and Govt. of Thailand | Approx. 20.00 Lakh | S.B.Dhok and P.S.Dhule  | PI   |

## 15. Patent[s]

| Sl. No. | Name of Patent  | Registration No. | Date of Award/ Application        | Awarding Country | Co-Awardee[s], if any  |
|---------|---|------------------|-----------------------------------|------------------|--|
| 1.      | Design and Implementation of Wireless Optical Communication Transmitter and Receiver Modules for Indoor Environment | 201621020527     | 16 Jun 2016<br><b>(Published)</b> | INDIA            | Sirra Ajith Prakash, Saugata Sinha, Joydeep Sengupta   |
| 2.      | Design and Implementation of physiological health monitoring wearable device  | 201721008921     | 15 Mar 2017<br><b>(Published)</b> | INDIA            | Joydeep Sengupta   |
| 3.      | Wireless sensor Networks for Smart Temperature and Humidity Control and Monitoring                                  | 201721010138     | 23 Mar 2017<br><b>(Published)</b> | INDIA            | Joydeep Sengupta   |
| 4.      | Design of full duplex Light Fidelity system in underwater scenario using laser diodes                               | 201721015837     | 04 May 2017<br><b>(Published)</b> | INDIA            | Shubham P. Khedkar, Sourabh V. Shende, Gaurav Ghode, Joydeep Sengupta, Pankaj Shriram Dhule  |
| 5.      | Design of Light Fidelity based system for shopping complex and its parking  | 201721015838     | 04 May 2017<br><b>(Published)</b> | INDIA            | Sanjana Pai, Shweta Pradeep Kulkarni, Surabhi Porwal, Joydeep Sengupta, Pankaj Shriram Dhule |
| 6.      | Energy dissipation Model based on Magnetic Induction Communication for Nonconventional media                        | 201721016878     | 14 May 2017<br><b>(Published)</b> | INDIA            | Sudhir Kumar, S.B. Dhok, Rajeev Tripathi, Sudarshan Tiwari                                   |
| 7       | 3D-Imaging based Artificial Intelligence (AI) System for Screening of Thyroidism                                    | 201821031886     | 25 Aug. 2018<br><b>(FILED)</b>    | INDIA            | Sanjay Dhok and Pankaj Dhule   |
| 8       | Superconductor based Magneto-Inductive modeling for Wireless Non-Conventional Media Communication                   | 201821021911     | 12 June 2018<br><b>(FILED)</b>    | INDIA            | Sanjay Dhok and Akshay Kulkarni  |

**16.Details of Ph.D. Thesis supervised (awarded / thesis submitted) as Sole Supervisor / 1<sup>st</sup>**

**Supervisor / Co-supervisor**

| Sl. No. | Title of Ph.D. Thesis                                       | Role            | Institute   | Name of student[s] | Co-Supervisor[s], if any | Year  | Status [Awarded/ Submitted] |
|---------|---|-----------------|-------------|--------------------|--------------------------|-------|-----------------------------|
| 1       | Energy Efficient Design for UWSNs                           | Principal Guide | VNIT Nagpur | Mr. Sadanand Yadav | NO                       | 2019  | Submitted                   |
| 2       | Energy Efficient Design for UWSNs based on MI Communication | Principal Guide | VNIT Nagpur | Mr. D. N. Sandeep  | Yes                      | ..... |                             |

**17. International Journal Publications:**

|   |  |
|---|--|
| 1 | Sadanand Yadav and <b>Vinay Kumar</b> “Energy Efficient Design of 3D-UWSNs Leveraging Compressive Sensing and Principal Component Analysis: A Communication Techniques Perspective” International Journal of Communication System, Wiley, In press 2019<br><b>(Impact Factor: 1.278)</b>             |
| 2 | Sadanand Yadav, <b>Vinay Kumar</b> , S. B. Dhok and Nalin Jaykody “Energy-Efficient Design of MI Communication-Based 3-D Non-Conventional WSNs” IEEE Systems Journal, Published Online, 2019<br><b>(Impact Factor: 4.463)</b>  |
| 3 | Laxmi Prasanna, <b>Vinay Kumar</b> and S.B.Dhok “Cooperative Communication and Energy-Harvesting-Enabled Energy-Efficient Design of MI-Based Clustered Nonconventional WSNs” IEEE Systems Journal, Published Online, 2019<br><b>(Impact Factor: 4.463).</b>  |
| 4 | Sadanand Yadav and <b>Vinay Kumar</b> “Hybrid Compressive Sensing Enabled Energy Efficient Transmission of Multi-Hop Clustered UWSNs” AEU, International Journal of Electronics and Communication Engineering (Elsevier), Published Online, 2019.<br><b>(Impact Factor: 2.853).</b>                  |
| 5 | <b>Vinay Kumar</b> , Rutuja Bhusari, Sanjay B Dhok, Arun Prakash, RajeevTripathi, Sudarshan Tiwari “Design of Magnetic Induction Based Energy-Efficient WSNs for Nonconventional Media Using Multilayer Transmitter-Enabled Novel Energy Model” IEEE SYSTEM JOURNAL, Vol. 99, PP. 1932 – 8184, 2018. |

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|----|---|
|    | <b>(Impact Factor: 4.463)</b>   |
| 6  | S.Tambe, <b>Viny Kumar</b> and R. Bhushari “Magnetic Induction based Cluster Optimization in Non-conventional WSNs: A Cross Layer Approach” International Journal of Electronics and Communication Engineering (Elsevier), Vol. 98, PP.53-62, 2018<br><b>(Impact Factor: 2.853)</b>   |
| 7  | Vishal Kumar, <b>Vinay Kumar</b> , DN Sandeep, S Yadav, RK Barik, R Tripathi, S Tiwari “Multi-hop Communication based Optimal Clustering in Hexagon and Voronoi Cell Structured WSNs” International Journal of Electronics and Communication Engineering (Elsevier), Vol. 93, PP. 305-316, 2018.<br><b>(Impact Factor: 2.853)</b> |
| 8  | P. K. Pedapolu, P. Saraf, P. Kumar, V. Harish, S. Venturi, S. K.Bharti, <b>Vinay Kumar</b> , and <b>S. Kumar</b> “Regression Based Mobility Estimation Method Using Received Signal Strength” Wireless Personal Communication, Springer, Vol. 101, PP. 359-374, 2018. <b>(Impact Factor: 0.929)</b>                               |
| 9  | A. Kumar, S. Yadav, S. Dandu, <b>Vinay Kumar</b> , J.Sengupta, S.B. Dhok and S. Kumar “Magnetic Induction-Based Non- Conventional Media Communications: A Review” IEEE Sensor Journal, Vol. 17, Issue 4, PP. 926 – 940, 2017.<br><b>(Impact Factor: 3.076)</b>  |
| 10 | Sadanand Yadav and <b>Vinay Kumar</b> “Optimal Clustering in Underwater Wireless Sensor Networks: Acoustic, EM and FSO Communication Compliant Technique” IEEE Access, 5, 2169-353, 2017<br><b>(Impact Factor: 4.098)</b>   |
| 11 | D. N. Sandeep and <b>Vinay Kumar</b> “Review on Clustering, Coverage and Connectivity in Underwater Wireless Sensor Networks: A Communication Techniques Perspective” IEEE Access, 5, 11176-111999, 2017.<br><b>(Impact Factor: 4.098)</b>  |
| 12 | S. Rao, <b>Vinay Kumar</b> , S.Kumar, S. Yadav, V. K. Ancha and R. Tripathi “Power Efficient and Coordinated eCIC-CPC- ABS Method for Downlink in LTE Advanced Heterogeneous Networks”Physical Communication (Elsevier), 24, 1874-4907, 71–82, 2017.<br><b>(Impact Factor: 1.451)</b>   |
| 13 | <b>Vinay Kumar</b> , S.B.Dhok, R.Tripathi and S. Tiwari “Cluster Size Optimization with Tunable Elfas Sensing model for Single and Multihop WSNs” International Journal of Electronics, Taylor and Francis USA. 104, Issue 21, 312-327, 2017<br><b>(Impact Factor: 1.070)</b>   |
| 14 | R. Chatterjee and <b>Vinay Kumar</b> “Energy Efficient Routing Protocol Via Chain Formation in Gaussian Distributed Wireless Sensor Networks” International Journal of Electronics letter, Taylor and Francis USA, 5, Issue 4, 449-462, 2017.<br><b>(Impact Factor: 1.070)</b>  |
| 15 | Sriram Naik and <b>Vinay Kumar</b> “Modulation Aware Cluster Size Optimization in Wireless Sensor Networks International Journal of Electronics, Taylor and Francis USA” 104, Issue 7, 1161-1177, 2017.<br><b>(Impact Factor: 1.070)</b>  |

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|----|---|
| 16 | N. Kothapalli, P. Sharma and <b>Vinay Kumar</b> "Performance of a Bi-Directional Relaying System with One Full Duplex Relay" International Journal of Electronics and communication Engineering (Elsevier).70, Issue 10, 1426 - 1432, 2016.<br>(Impact Factor: 2.853) |
|----|---|

### 18. Papers published/accepted in Scopus Indexed Journals

| Sl. No | Author (s)  | Role (First author / Main Supervisor / Co-author) | Title of the paper   | Name of Journal   | Vol. No.   | ISBN/ISSN No. | Page No. From to | Year |
|--------|---|---|--|---|------------|---------------|------------------|------|
| 1      | <b>Vinay Kumar</b> and S. Tiwari  | First author                                      | Routing in IPv6 over Low-Power Wireless Personal Area Networks (6LoWPAN) : A Survey                            | Journal of Computer Networks and Communications, Hindawi Publication, USA (Under charge free scheme of Hindawi) | 2012       | 2090-715X     | ..               | 2012 |
| 2.     | <b>Vinay Kumar</b> , S. B. Dhok, R. Tripathi and S. Tiwari  | First author                                      | Cluster Size Optimization in Gaussian Distributed Wireless Sensor Networks                                     | International Journal of Engineering and Technology (IJET).   | 6, Issue 3 | 0975-4024     | 1581 - 1592      | 2014 |
| 3      | Akshay Kulkarni, <b>Vinay Kumar</b> , Pankaj Dhule, Sanjay Kumar Mishra, Anvita Tripathi and Rabindra Barik | Main Supervisor                                   | Optical Filter Enabled Continuous Disinfection of Hospital Rooms using MultiSensor Feedback Aided Light Source | Procedia Computer Science, Elsevier   | 125        |               | 459-467          | 2018 |

|   |  |             |  |   |          |  |         |      |
|---|--|-------------|--|---|----------|--|---------|------|
| 4 | Rabindra Barik, Amaresh Chandra Dubey, T Pratik, Rakesh Kumar Lenka, Harishchandra Dubey, Kunal Mankodiya and <b>Vinay Kumar</b> | Co-author   | MistData: Leveraging Mist Computing for Secure and Scalable Architecture for Smart and Connected Health, | Procedia Computer Science, Elsevier   | 125      |  | 647-653 | 2018 |
| 5 | <b>Vinay Kumar</b> , A. Laxmi Prasanna, Dush Nalin K. Jayakody, Akhilendra Pratap Singh and Indrasen Singh                       | Main Author | Compressive Data Gathering for MI Based Clustered Non-Conventional WSNs                                  | Publication in <i>special Issue</i> of PHYCOM/ other SCI & indexed journals of Wiley's "Internet Technology Letters", International Journal of Distributed Sensor Networks and MDP I Information(As per the conference ETIC-2019) | Accepted |  |         | 2019 |

**19. Papers published/accepted in Conference Proceedings indexed in SCI/Scopus/ Web of Science:**

| Sl. No. | Author(s)                  | Title of the paper   | Name of Conference and dates  | Vol. No. of the proceedings          | ISBN/ISSN No. | Indexed in |
|---------|----------------------------|--|---|--------------------------------------|---------------|------------|
| 1.      | Lakshmi P, Vinay Kumar etc | Link Energy Minimization in Magnetic Induction based on Non Conventional | Sixteenth international conference Electrical engineering, Computer, Telecommunic | It will be uploaded on IEEE Explorer |               | Scopus     |

|    |   |   |   |                                      |        |
|----|---|---|---|--------------------------------------|--------|
|    |   | Wireless Sensor Networks  | ations and Information Technology or ECTI-CON 2019  |                                      |        |
| 2. | Lakshmi P, Vinay Kumar etc  | Compressive Data Gathering for MI Based Clustered NonConventional Wireless sensor network   | Emerging Technologies of Information and Communication (ETIC) o                             | It will be uploaded on IEEE Explorer | Scopus |
| 3. | Aniket Dhok, I. Sagote, <b>Vinay Kumar</b> and S. Thote   | Design of Efficient M <sup>2</sup> I Coil Structure for Underground Sensor Networks         | International Conference on VLSI, Communication and Signal Processing, MNNIT Allahabad-2018 | It will be uploaded on IEEE Explorer | Scopus |
| 4. | Sadanand Yadav, <b>Vinay Kumar</b> , Sanjay Dhok, Gaurav Srivastava, Akhilendra Pratap Singh and M. Gupta | Performance Evaluation of Modulation Techniques for UW-FSO Communication System             | International Conference on VLSI, Communication and Signal Processing, MNNIT Allahabad-2018 | It will be uploaded on Springer      | Scopus |
| 5. | A. Laxmi Prasanna and <b>Vinay Kumar</b>  | Modified Cluster Head Election Scheme Based On LEACH Protocol For MI Driven UGWSNs          | International Conference on VLSI, Communication and Signal Processing, MNNIT Allahabad-2018 | It will be uploaded on Springer      | Scopus |
| 6. | Devesh Shukla, <b>Vinay Kumar</b> and Arun Prakash  | Performance evaluation of IEEE 802.11p physical layer for efficient vehicular communication | International Conference on VLSI, Communication and Signal Processing,                      | It will be uploaded on Springer      | Scopus |

|     |   |   |   |                                    |              |        |
|-----|---|---|---|------------------------------------|--------------|--------|
|     |   |   | MNNIT<br>Allahabad-2018   |                                    |              |        |
| 7.  | Yogesh<br>Tripathi, <b>Vinay<br/>Kumar</b> and Arun<br>Prakash                              | A Robust Energy<br>Efficient Cluster<br>Based Routing<br>Protocol for Mobile<br>Wireless Sensor<br>Network                                    | International<br>Conference on<br>VLSI,<br>Communication<br>and Signal<br>Processing,<br>MNNIT<br>Allahabad-2018                          | It will be uploaded<br>on Springer |              | Scopus |
| 8.  | Akshay<br>Kulkarni, <b>Vinay<br/>Kumar</b> and<br>Sanjay Dhok                               | Enabling<br>Technologies for<br>Range<br>Enhancement of<br>MI based Wireless<br>Non-Conventional<br>Media<br>Communication                    | 9th<br>International<br>Conference on<br>Computing,<br>Communication<br>and Networking<br>Technologies<br>(ICCCNT), IISc<br>Banglore-2018 | IEEE<br>Explor<br>er               | -----        | Scopus |
| 9.  | Vivek<br>Pathak, <b>Vinay<br/>Kumar</b> and<br>Rabindra Barik                               | Magnetic<br>Induction<br>Communication<br>based Transceiver<br>coil and wave<br>guide structure<br>modelling for non-<br>conventional<br>WSNs | 9th<br>International<br>Conference on<br>Computing,<br>Communication<br>and Networking<br>Technologies<br>(ICCCNT), IISc<br>Banglore-2018 | IEEE<br>Explor<br>er               | -----        | Scopus |
| 10. | V.Munde, J.<br>Sengupta and V.<br>Kumar   | Design of a Via-<br>Less, Compact<br>CPW-fed ZOR<br>Antenna for<br>WLAN<br>Applications   | National<br>Conference on<br>Communication<br>s (NCC) -2017,<br>at<br>IIT Madras  | IEEE<br>Explor<br>er               | -----        | Scopus |
| 11. | M. Tarun, <b>Vinay<br/>Kumar</b> , Sudhir<br>Kumar, M. Jajoo,<br>S. Rahman, J.<br>Sengupta, | GPS-GSM based<br>Rail Signalling<br>and Tracking<br>System.   | International<br>Conference on<br>Control,<br>Decision<br>and Information<br>Technologies,<br>Barcelona, April<br>2017.                   | IEEE<br>Explor<br>er               | -----<br>--- | Scopus |

|     |   |   |                   |            |              |        |
|-----|---|---|-------------------|------------|--------------|--------|
|     |   |   |                   |            |              |        |
| 12. | Pavan Kumar Pedapolu, Pradeep Kumar, Vaidya Harish, Satvik Venturi, Sushil K Bharti, <b>Vinay Kumar</b> , Sudhir Kumar    | Mobile Phone User's Speed Estimation using WiFi Signal-to-Noise Ratio                                 | ACM MobiHoc-2017  | ACM online | -----<br>--- | Scopus |
| 13. | <b>Vinay Kumar</b> , Sadanand Yadav, Joydeep sengupta, sudhir kumar, Rajeev tripathi, Sudarshan Tiwari and Rabindra Barik | TMSM-based Optimal Clustering in a Gaussian Distributed Wireless Sensor Network                       | TENCON, IEEE 2017 | Explorer   | -----<br>--  | Scopus |
| 14. | Vivek Pathak, D.N. Sandeep and <b>Vinay Kumar</b> , Ravindra K. Barik   | Tunable Multilevel Probabilistic Sensing Model based Intrusion Detection in Gaussian Distributed WSNs | INDICON-2017      | Explorer   | -----<br>--- | Scopus |
| 15. | Rabindra K. Barik, Satish Kumar Gudey, Gujji Giridhar Reddy, Harishchandra Dubey, Kunal Mankodiya, <b>Vinay Kumar</b>     | FogGrid: Leveraging Fog Computing for Enhanced Smart Grid Network                                     | INDICON-2017      | Explorer   | -----<br>--- | Scopus |

**20. Departmental activities identified by HODs like lab in charge, or department level committee**

| Sl. No. | Activity   | Period      |              |
|---------|--|-------------|--------------|
|         |  | From        | To           |
| 1.      | Departmental Examination Controller                                  | 01 Jul 2012 | 30 Jun 2014  |
| 2.      | PG NBA SAR preparations  | 09 Feb 2016 | 9 March 2017 |
| 3.      | PG Faculty advisor, admission, project allotment, project exam etc., | 09 Jun 2015 | 10 Jun 2017  |
| 4.      | UG Project coordinator   | 09 Jun 2012 | 09 Jul 2014  |
| 5.      | Compilation of students' feedback data                               | 11 Dec 2014 | 10 Dec 2015  |
| 6.      | Lab in charge of DSP   | 01 Jul 2014 | Till Date    |
| 7.      | Load allocation and Time table in charge                             | 01 Jul 2015 | 01 Jul 2017  |
| 8.      | Class committee meeting and weak student identification reporting    | 09 Jun 2015 | 09 Jul 2016  |

**21. Workshop/FDP/Short term courses of min 05 working Days duration offered as coordinator or convener**

| Sl. No. | In the Capacity of | Title                              | Period      |             | Organised at | Sponsored by  | Amount [in lakhs] |
|---------|--------------------|------------------------------------|-------------|-------------|--------------|---------------|-------------------|
|         |                    |                                    | From        | To          |              |               |                   |
| 1.      | Co-ordinator       | Analog Electronics                 | 04 Jun 2013 | 14 Jun 2013 | VNIT NAGPUR  | MHRD          | -----             |
| 2.      | Co-ordinator       | Digital signal processing workshop | 05 May 2014 | 09 May 2014 | VNIT NAGPUR  | Self-Financed | -----             |
| 3.      | Co-ordinator       | Role of Mathematics in Engineering | 26 Sep 2016 | 30 Sep 2016 | VNIT NAGPUR  | TEQIP-III     | -----             |

## 22. Establishment of New Lab(s)

| Sl. No. | Name of Lab                      | Year of Establishment | Department/Institute    |
|---------|----------------------------------|-----------------------|-------------------------|
| 1.      | Signals and Systems analysis Lab | 2015                  | Department of ECE, VNIT |
| 2.      | Wireless Sensor Networks Lab     | 2017                  | Department of ECE, VNIT |

## 23. PG Dissertation Guided

| Sl. No. | Title of Dissertation/Project   | Department/ Institute |  | Name of student[s]  | Co-Supervisor[s], if any | Year |
|---------|---|-----------------------|--|---------------------|--------------------------|------|
| 1.      | Estimation of Optimal Number of Clusters in Wireless Sensor Networks  | Department of ECE     | Visvesvaraya National Institute of Technology Nagpur | Sriram Naik         | ...                      | 2014 |
| 2.      | Enhancement of Network Lifetime in Wireless Sensor Network  | Department of ECE     | Visvesvaraya National Institute of Technology Nagpur | Gayatri Devi        | ...                      | 2015 |
| 3.      | Development of Test Bed Based On Magnetic Induction (Mi) Communication for Non-Conventional Media Application | Department of ECE     | Visvesvaraya National Institute of Technology Nagpur | Ashish Kumar Sharma | ...                      | 2016 |
| 4.      | Performance Analysis of Bi-Directional Relay System In Rayleigh Fading  | Department of ECE     | Visvesvaraya National Institute of Technology Nagpur | Nagendra Banu       | Prabhat Kumar Sharma     | 2016 |
| 5.      | Power Efficient and Coordinated Eicic-CPCABS Method for Downlink in LTE-Advanced Heterogeneous Networks       | Department of ECE     | Visvesvaraya National Institute of Technology Nagpur | Srinivasa Rao       | ...                      | 2016 |

|    |  |                   |   |                  |     |      |
|----|--|-------------------|---|------------------|-----|------|
| 6. | Lifetime Enhancement Using Multi-Hop Communication in Hexagon and Voronoi Clustered Wireless Sensor Networks             | Department of ECE | Visvesvaraya National Institute of Technology Nagpur  | Vishal Kumar     | ... | 2017 |
| 7. | Super-conductor-based Magneto-Inductive Modelling of Transmitter Coil and Waveguide Structure for Non-Conventional Media | Department of ECE | Visvesvaraya National Institute of Technology Nagpur. | Akshay Kulkarni  | NIL | 2018 |
| 8  | Magnetic Induction Communication based Transceiver Coil and Waveguide Structure Modelling for Non-Conventional WSNs      | Department of ECE | Visvesvaraya National Institute of Technology Nagpur. | Vivek Pathak     | NIL | 2018 |
| 9  | Platform Debug Utility for x86 Platforms Across all the Segments   | Department of ECE | Visvesvaraya National Institute of Technology Nagpur. | Annapurna Varada | NIL | 2018 |

#### 24. UG Dissertation Guided

| Sl. No. | Title of Dissertation/Project    | Department/<br>Institute                                  |  | Year |
|---------|----------------------------------|---|--|------|
| 1.      | LEACH clustering protocol        | Department of Electronics and Communications Engineering, | Visvesvaraya National Institute of Technology Nagpur | 2014 |
| 2.      | Link Energy Minimization in WSNs | Department of Electronics and Communications Engineering, | Visvesvaraya National Institute of Technology Nagpur | 2014 |

|    |   |   |  |      |
|----|---|---|--|------|
| 3. | Pipeline Leakage Detection Using Pressure sensors   | Department of Electronics and Communications Engineering, | Visvesvaraya National Institute of Technology Nagpur | 2014 |
| 4. | Smart Zone Based Vehicle Speed Control Using RF and obstacle Detection to prevent Accidents.                | Department of Electronics and Communications Engineering, | Visvesvaraya National Institute of Technology Nagpur | 2015 |
| 5. | Automation in Railway using GPS & GSM   | Department of Electronics and Communications Engineering, | Visvesvaraya National Institute of Technology Nagpur | 2016 |
| 6. | Light Fidelity (Li-Fi) Implementation using LED and LASER   | Department of Electronics and Communications Engineering, | Visvesvaraya National Institute of Technology Nagpur | 2017 |
| 7. | Hardware implementation of Magnetic induction based communication in Non-Conventional Media                 | Department of Electronics and Communications Engineering  | Visvesvaraya National Institute of Technology Nagpur | 2018 |
| 8. | Magnetic Induction based Cluster Optimization in Non-Conventional WSNs: A Cross-Layer Approach              | Department of Electronics and Communications Engineering  | Visvesvaraya National Institute of Technology Nagpur | 2018 |
| 9. | Efficient practical design of Metamaterial-based Magnetic induction communication in Non-conventional media | Department of Electronics and Communications Engineering, | Visvesvaraya National Institute of Technology Nagpur | 2018 |

**25. Text/Reference Books Published on relevant subjects from reputed national publishers or book chapters in the book published by reputed international publishers**

| Sl. No. | Author(s)   | Year of Publication | Book Title   | Title of Chapter, if any  | National / International |               | Publisher                          |
|---------|---|---------------------|--|---|--------------------------|---------------|------------------------------------|
|         |   |                     |  |   |                          |               |                                    |
| 1       | Vinay Kumar, Sadanand Yada etc.   | 2019                | Frontiers in Intelligent Computing : Theory and Applications | Optimal Cluster Count and Coverage Analysis in a Gaussian Distributed WSNs Using TESM       | .....                    | International | Springer Nature Singapore Pte Ltd. |
| 2       | Vinay Kumar, Sadanand Yadav, D N Sandeep, S B Dhok, Rabindra Kumar Barik, and Harishchandra Dubey | 2017                | Advances in Intelligent Systems and Computing                | 5G Cellular: Concept, Research Work and Enabling Technologies                               | 2194-5357                | International | (AISC) series of Springer          |
| 3       | Vinay Kumar, Sadanand Yadav, Vishal Kumar, Jaydeep Sengupta, Rajeev Tripathi, Sudarshan Tiwari    | 2017                | Advances in Intelligent Systems and Computing                | Optimal Clustering in Weibull Distributed WSNs based on Realistic Energy Dissipation Model, | 2194-5357                | International | Springer                           |
| 4       | R. K. Barik, A. Tripathi, H. Dubey, R. K. Lenka, T  | 2017                | Advances in Intelligent                                      | MistGIS: Optimizing Geospatial Data   | 2194-5357                | International | Springer                           |

|   |  |      |  |   |           |               |           |
|---|--|------|--|---|-----------|---------------|-----------|
|   | Pratik, S. Sharma, and K. Mankodiya, and Vinay kumar                                     |      | Systems and Computing                  | Analysis Using Mist Computing   |           |               |           |
| 5 | Rabindra Barik, Rojalina Priyadarshini, Harishchandra Dubey, Dr.Vinay Kumar and S. Yadav | 2017 | Lecture Notes in Networks and Systems  | Leveraging Machine Learning in Mist Computing Telemonitoring System for Diabetes Prediction | 2367-3370 | International | Springer. |
| 6 | Rabindra Barik, Rojalina Priyadarshini, Harishchandra Dubey, Dr.Vinay Kumar and S. Yadav | 2017 | Lecture Notes in Networks and Systems. | Leveraging Machine Learning in Mist Computing Telemonitoring System for Diabetes Prediction | 2367-3370 | International | Springer  |

## 26. Significant Outreach Institute Activities

| Sl. No. | Nature of Activity                           | Department / Institute  |
|---------|--|---|
| 1.      | Observer for CMAT/ GPAT, 2017,               | Jhulelal Institute of Technology, Nagpur                                |
| 2.      | Expert lecture,                              | RKGIT, Ghaziabad  |
| 3       | Observer for CMAT, 2014,                     | Dr. Panjab Rao Deshmukh Institute of Management and Technology, Nagpur. |
| 4       | Expert Lecture,                              | National Institute of Technology , Uttarakhand                          |
| 5       | External Examiner                            | National Institute of Technology, Raipur                                |
| 6       | Deputation for Workshop on NBA Accreditation | Visvesvaraya National Institute of Technology , Nagpur                  |