

## **BIO-DATA**



### **Dr. Manish Kumar**

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**Current Position** Assistant Professor

**Thesis Title** “Coherent Radiation Generation by Particle Beams and Nonlinear Mixing of Lasers”

**Ph. D. Supervisor** Prof. Vipin Kumar Tripathi

**Research Interest**

- Plasma Physics
- Coherent and Terahertz Radiation Generation
- Renewable Energy Technologies & Energy Studies
- Photonics & Optics

**Member of International Events**

- a. Organizing Committee Member of 2<sup>nd</sup> International Conference on Quantum Mechanics and Nuclear Engineering (Nuclear Engineering-2019) to be held on September 23-24, 2019 at Paris, France.
- b. Organizing Committee Member of Asia Pacific Conference on Physics (PHYSICS-2018) to be held in August, 2019 at Tokyo, Japan.

### **Publications**

Referred Journals:

Orcid id: **0000-0001-6053-3667**

1. “Correlation of Prime Number with English & Hindi Alphabets”, **Dr. Manish Kumar**, submitted to 4<sup>th</sup> International Virtual (Online Conference) Multidisciplinary Conference “**From Gurukul to Global: Paving Path to Viksit Bharat@2047: Restructuring Higher Education with Indic Priorities**”, 27<sup>th</sup> & 28<sup>th</sup> December 2025
2. “Review of electromagnetic theory based on two units viz. second & meter” - **Manish Kumar** - IJFMR Volume 7, Issue 1, January-February 2025. DOI 10.36948/ijfmr. 2025.v07i01.34715

3. "Effects of pH Change on the Operation of Electrolyzer and Fuel Cell", Ankit Ranjan, Abhijeet Singh and **Dr. Manish Kumar**, 2020 IEEE Students' Conference on Engineering & Systems (SCES) July 10-12, 2020, Prayagraj, India (accepted in IEEE Xplore).
4. "Fuel Cells: Contamination and Recent Advancements for its Stabilization", **Kumar, M.**, Raj, A., & Srivastava, P., (2019). *MATTER: International Journal of Science and Technology*, 5(3), 28-45.
5. "Effect of Magnetic Field Tapering on Whistler Pumped Free Electron Laser", **Manish Kumar**, *AIP Advances* **9**, 025207 (2019); <https://doi.org/10.1063/1.5064751>.
6. "Atomic energy as well as gravitational energy is another form of electrical energy", **Manish Kumar**, *Journal of Mathematics and System Science* **6** (2016) 56-61, doi: 10.17265/2159-5291, February 25 2017.
7. "Linear mode conversion of THz radiation into THz surface magnetoplasmons on a rippled surface of magnetized n-InSb", Pawan Kumar, **Manish Kumar** and V. K. Tripathi, **1408 Vol. 41, No. 7 / April 1 2016 / Optics Letters**.
8. "GOD doesn't play dice", **Manish Kumar**, *International Journal of Scientific & Engineering Research*, Volume 7, Issue 1, January 2016 Edition.
9. "Comparative study of dispersion characteristics of uniaxial crystalline optical fibre under the extreme cases of helix pitch angles", A.K. Mishra, **M. Kumar**, D. Kumar & O.N. Singh II, *Journal of Modern Optics* (2013): DOI: 10.1080/09500340.2013.833316.
10. "Modal study of plasma cladded cylindrical optical fiber", A.K. Mishra, **M. Kumar**, D. Kumar, O.N. Singh II, *Journal of Electromagnetic Waves and Applications*, DOI:10.1080/09205071.2013.789411.
11. "Beat excitation of Terahertz radiation in a semiconductor slab in a magnetic field", **Manish Kumar**, Lalita Bhasin and V. K. Tripathi, *Journal of Physics and Chemistry of Solids* **73** (2012) pp. 269-274.
12. "Excitation of THz plasmons Eigen mode of a parallel plane guiding system by an electron beam", Pawan Kumar, **Manish Kumar** and V. K. Tripathi, *J. Appl. Phys.* **108**, 123303(2010).
13. "Resonant beat wave excitation of terahertz radiation in a magnetized plasma channel", **Manish Kumar**, Lalita Bhasin and V. K. Tripathi, *Phys. Scr.* **81**, 045504 (2010).

14. “Plasma effects in a travelling wave tube”, **Manish Kumar**, Lalita Bhasin and V. K. Tripathi, **Phys. Scr.** **81**, 025502 (2010).

**Conferences/  
Workshops  
Attended**

1. “Correlation of Prime Number with English & Hindi Alphabets”, **Dr. Manish Kumar**, submitted to 4<sup>th</sup> International Virtual (Online Conference) Multidisciplinary Conference “**From Gurukul to Global: Paving Path to Viksit Bharat@2047: Restructuring Higher Education with Indic Priorities**”, 27<sup>th</sup> & 28<sup>th</sup> December 2025.
2. “Quantum Origin of Nano”, Dr. Manish Kumar, International Conference on Advances in Physics, Mathematics and Applied Science Physics Conference 2022, held during March 03, 2022 in Paris, France.
3. “Origin of Nano”, Dr. Manish Kumar, 6th Annual Congress on Atomic, Nuclear and Plasma Physics International Webinar on Atomic Physics 2021, held on 30-31<sup>st</sup> August 2021.
4. “Origin of Nano”, Dr. Manish Kumar, International Online Conference on Nano Materials (ICN 2021), 09-11<sup>th</sup> April 2021, Kottayam Kerala
5. “Effects of pH Change on the Operation of Electrolyzer and Fuel Cell”, Ankit Ranjan, Abhijeet Singh and **Dr. Manish Kumar**, 2020 IEEE Students’ Conference on Engineering & Systems (SCES) July 10-12, 2020, Prayagraj, India (accepted in IEEE Xplore).
6. Presented Invited Talk on “Fundamentals of Electromagnetic Theory” for Technical Paper Meeting, Monday, February 24, 2020, 13:00 to 16:00 hrs, Organized jointly by The Institution of Engineers (India), Varanasi local centre and Pandit Ramadhar J. Tiwari College of Polytechnic, Mahuar Kala, Baluaghat, Chandauli.
7. Conducted the video presentation on phenomenal and worthy keynote presentation at the 3rd International Conference on Applied Physics and Mathematics held during October 16-17, 2019 in Singapore City, Singapore “Salvation theory as per the GOD’s wish”, Applied Physics 2019.
8. Presented an Invited Talk on “Reverse physics of life in universe/multiverse from electrical energy flow from GOD in space through astrology of the life” Eurasia Research 2019, 3<sup>rd</sup> ICSTR Bangkok-International Conference on Science & Technology, July 26-27, 2019, *Asian Institute of Technology (AIT), Conference Center, Bangkok, Thailand.*
9. Conducted the video presentation on “Soul is the source of power for all atomic energy which is the source of power for both nuclear reactors and

- nuclear weapons” at the “5th International Conference on Atomic and Nuclear Physics” held during August 02-03, 2019 in Chicago, USA.
10. Conducted the video presentation on “Reverse physics of life in universe/multiverse from electrical energy flow from GOD in space through astrology of the life” at the “World-wide Congregation on Physics” held during July 17-18, 2019 in Zurich, Switzerland.
  11. Presented an Invited Talk on: Terahertz radiation generation from tapered magnetic field Free Electron Laser organized by OAHOST (Open-Access House of Science and Technology) as EMN Meeting on Terahertz 2019. The conference took place from June 10 to 14, 2019 in the Grandior Hotel Prague, Prague, Czech Republic.
  12. Participated in the “33<sup>rd</sup> National Symposium on Plasma Science & Technology (PLASMA-2018)” by the Plasma Science Society of India (PSSI) and Department of Physics & Astrophysics, University of Delhi from 4-7 December 2018 at Delhi, India.
  13. “Creation of Atomic Particles from Electrical Energy Flow from GOD in Space” **Manish Kumar**, for conducting the video presentation at the “4<sup>th</sup> International Conference on Atomic and Nuclear Physics”, October 26-27, 2018, Boston, USA.
  14. Participated in the “International School on Electron Accelerators, Free Electron Laser & Application of Electron beam/THz Radiation” during 6<sup>th</sup>-9<sup>th</sup> March, 2018 held at Inter-University Accelerator Centre, New Delhi.
  15. Participated in the “Startup Competition for Energy Solutions for Rural India for Rural India” organized by IIT Delhi & Swadeshi Jagran Manch, IIT Delhi, 2<sup>nd</sup> Dec, 2017.
  16. Participated in the short-term course on “Design and Implementation of Instrumentation Systems using LabVIEW” (DIISL-2016) organized by Dept. of ECE during 19<sup>th</sup>-23<sup>rd</sup> December-2016 at National Institute of Technology, Rourkela, Odisha.
  17. “Atomic energy is the source of power which is another form of electrical energy”, **Manish Kumar**, for conducting the video presentation at the “International Conference on Atomic and Nuclear Physics”, November 17-18, 2016, Atlanta, USA.
  18. Participated in the Technical Education Quality Improvement Programme (TEQIP-II) project under Centre of Excellence (CoE) sponsored Programme on “Advanced Soft Computing Techniques and its Applications” (ASCTA-2016, September 19-23, 2016, College of Technology, G B Pant University of Agriculture & Technology, Pantnagar, Uttarakhand, India.

19. “GOD doesn’t play dice”, **Manish Kumar** & “GOD’s diagnostic tool is mathematics and prescription is physics”, **Manish Kumar** and Shagun Singh, for conducting the video presentation at the “International Conference on Physics”, June 27-29, 2016, New Orleans, USA.
20. “Investigations of Light gathering capacity of Plasma cladded Optical Fiber”, A. K. Mishra, **Manish Kumar** and O. N. Singh II, International Conference on Light Quanta: Modern Perspectives & Applications, December 14<sup>th</sup>-16<sup>th</sup> 2015 at Department of Physics, University of Allahabad, Allahabad-211002, U.P., India.
21. “Workshop on Integrated Dairy & Smart Hybrid Energy Systems”, Dr. Manish Kumar as a resource person, 9<sup>th</sup> Nov, 2015 at St. Anthony Degree College, Shillong, Meghalaya.
22. “Workshop on Integrated Dairy & Smart Hybrid Energy Systems”, Dr. Manish Kumar as a resource person, 20<sup>th</sup>-22<sup>nd</sup> April, 2015 at Gujarat Technological University, Gujarat.
23. **SERB School on “High Power Laser Plasma Interaction” held during May 5-23, 2014 in IIT Delhi.**
24. “Modal study of plasma cladded cylindrical optical fiber”, A. K. Mishra, **Manish Kumar**, D. Kumar and O. N. Singh II, Winter **Symposium on Photonics and Optoelectronics (W-SOPO 2013)**, 1-3 Dec, 2013 at Sanya, China.
25. “Electrification of BHU hostels by Photovoltaic modules”, **Manish Kumar, Workshop on Advances in Energy Engineering & Technology** held from 28-30 June, 2013 at Dept. of Mechanical Engineering, IIT (BHU), Varanasi, India.
26. Participated in **QIP/CEP Topical Conference** on “Laser Driven Charged Particle Acceleration and Applications”, 5-7 April, 2013 at Department of Physics, IIT Delhi, New Delhi -110016.
27. Participated as a **Guide** in Engineer Infinite 2012, a National Level Engineering Student Project Competition seeking practical solutions to challenges in the electrical energy sector for Project “Rural Electrification using HES” held at **ELECRAMA-2012**.
28. Participated in the First Refresher Course in Physical Sciences [Interdisciplinary] from January 31 to February 20, 2012 and obtained Grade (A), UGC Sponsored Refresher Course at UGC Academic Staff College, Banaras Hindu University, Varanasi-221005.
29. Participated in the 57<sup>th</sup> Orientation Course from May 21 to June 17, 2011 and obtained Grade (A), UGC Sponsored Orientation Course at UGC Academic Staff College, Banaras Hindu University, Varanasi-221005.

30. Participated in **Topical Workshop** on “Terahertz Radiation Generation & Applications”, 26-27 March, 2011 at IIT Delhi, New Delhi-110016.
31. Participated in **International Conference on Multifunctional Material-2010 (ICMM-2010)** held on 6-9 December 2010, at the Department of Physics, Banaras Hindu University, Varanasi, India.
32. "Resonant beat wave excitation of terahertz radiation in a magnetized plasma channel ", **Manish Kumar**, Lalita Bhasin and V. K. Tripathi, **International Workshop on the Terahertz Technology 2009**, Osaka, Japan 30 Nov – 03 Dec, 2009.
33. QIP short term course on “Electric power system operation and control: modern trends and future challenges” held in Department of Electrical Engineering, IIT Kanpur during Aug. 28-Sep. 1, 2006.
34. QIP short term course on “The Finite Element Method in Electrical Engineering Applications” held in Department of Electrical Engineering., IIT Kanpur during December 15-19, 2004.

#### **Book Published**

**Coherent radiation generation by lasers and particle beams**, **Manish Kumar**, ISBN: 978-3-659-84512-3, Scholar’s Press, OmniScriptum GmbH & Co. KG, Bahnhofstraße 28, 66111 Saarbrücken, Deutschland/Germany, 30<sup>th</sup> Nov, 2016, Email: [info@omnisciptum.com](mailto:info@omnisciptum.com).

#### **Education**

**Professional Certificate Course in Generative AI and Machine Learning**, (A joint initiative of MeitY & IIT Kanpur) E & ICT Academy, IIT Kanpur, 22 March, 2025 – 04 December, 2025.

**Ph.D.** (Plasma Physics), Physics Department, IIT Delhi, India, January 2008 - December 2010, CGPA (Pre Ph.D.-Courses): 8.00.

**Thesis Title: Coherent radiation generation by particle beams and nonlinear mixing of lasers.**

**M. Tech.** Energy Studies in year 2000 from IIT Delhi, India, with 8.5 CGPA.

**Project topic: "Numerical solution of non-linearity in Alfvén waves in plasmas"**

**B.E.** Electrical Engineering in year 1997 from MNNIT Allahabad, India, with 69.22% Marks.

**Project topic: "Design of digital controller"**

**Intermediate (12<sup>th</sup>)** from C.B.S.E. Board, India in 1992, 1<sup>st</sup> division with 80.8% marks.

**High School (10<sup>th</sup>)** from C.B.S.E. Board, India in 1990, 1<sup>st</sup> division with 77.2% marks.

- Job Experiences**
1. Working as an Assistant Professor, Department of Electrical Engineering, IIT(BHU) Varanasi from **15-07-2004** to **till date, currently pending WRIA 15347/2022 in Allahabad High court for deciding my withdrawal of resignation dated 09/06/2022 illegal resignation acceptance of service w.e.f. 13/05/2022 by BOG IIT(BHU) VARANASI but issued experience letter to 13/05/2022.**

**Roles & Responsibilities:**

- c. Conducted PhD Viva at NIT Trichy in Nov 2017.
- d. 13 years of Teaching experience to U.G. & P.G. Students.
- e. Guided one PhD Student Dr. Ashish Kumar Mishra in Physics Dept., IIT(BHU), Varanasi.
- f. Guided 6 B. Tech. Projects, 4 IDD Projects (Power Electronics).
- g. Guided 6 B. Tech. Students for Exploratory Project with working model for “Wireless Power Transfer”.
- h. Member of Editorial advisory board for “International Journal of Scientific Research and Electrical Engineering”.
- i. Member of Center for Energy Resources and Development (CERD), IIT (BHU).
- j. Departmental Under Graduate Committee (DUGC) member, 2014-2016.
- k. Departmental Post Graduate Committee (DPGC) member, 2012-14.
- l. Departmental Space & Assortment committee member 2014-2015.
- m. Summer Training and Industrial Tour committee member 2014-2015.
- n. Warden of Dhanrajgiri Hostel, IIT (BHU), 2013-2015.
- o. Tabulator of Dept. of Electrical Engineering from 2005-07 and 2011-13.
- p. Treasurer of Electrical Engineering Society (EES) from 2007-2008.
- q. **Project: “1.5 MW Integrated Dairy & Smart Hybrid Energy Systems”**
  - i. Small scale of above said Project started in village: Ahirauli Khizirpur, Tehsil: Lalganj, District: Azamgarh, Uttar Pradesh. I had given live demonstration on **03-03-2016** in the village for the awareness for such project before the local authorities with the consent of **Commissioner of Azamgarh Mandal, Shri R. P. Goswami.**

- ii. I had presented before the Planning board of State of **Meghalaya on 09-11-2015**, now I have got 5 acres of land proposal from for **IIT (BHU)** for the pilot research project. Draft MoU for the project execution sent to the State Planning board for their consent.
  - r. Setup a New Prototype Lab in the Department of Electrical Engineering, IIT (BHU) for my research project **“Integrated Dairy & Smart Hybrid Energy Systems”** on 17<sup>th</sup> Sep, 2015. Lab is under development and will be fully functional as soon as the necessary equipment’s are procured.
  - s. I had got 5 acres of land in **village: Tamauli, Tehsil: Sadar, District: Azamgarh, Uttar Pradesh** selected under the **“Saansad Adarsh Gram Yojna”** did inspection and had interactive cum awareness program along with the collection of requisite data for the implementation of project with the local villagers the site for the project on **28<sup>th</sup> Jan, 2015**.
  - t. Setup a **“Center for Energy Resources and Development (CERD)” at IIT (BHU)** under the scheme of Centre of Excellence under Frontier Areas of Science and Technology (F.A.S.T.) to MHRD New Delhi
2. Worked as Junior Telecom Officer (J.T.O.) from **26-11-2001** to **14-07-2004** in Bharat Sanchar Nigam Limited (B.S.N.L.).

**Roles & Responsibilities:**

- i. CCN responsibilities.
  - ii. Operation & maintenance of BTS, BSC & MSC for mobile operation.
3. Worked as Graduate Engineer Trainee (G.E.T.) from **1-07-1997** to **19-02-1998** in Modipon Fiber Company Ltd, Modinagar.

**Roles & Responsibilities:**

- i. To manage the 15MW power generation in Power house of company.
- ii. Operation and maintenance of HFO Generators and Gas turbine.

**Industrial Exposure**

Vocational Training at D. L. W. Varanasi, from 03-06-1996 to 28-06-1996.

**Theoretical Techniques Computational Skills**

Experienced in MHD and Fluid Theory which are used to analyze plasma properties.

Operating Systems: Windows, LINUX.

Packages: Generative AI and Machine Learning, Mathematica, MATLAB, MSOffice, Origin, FEMLAB, RET Screen International, Homer, LabVIEW etc..

**Social Activities**

- **Founder President** of **“Denotified Tribes Welfare Association (DTWA)”**, a registered association under the Society Registration Act 1860, **Regd. No. 596/2012-13**.

- Filed WPIL 13206/2013 in the Allahabad High Court for the righteous use of reservation policy in the Indian Subcontinent.
- Doing the social service for the upliftment of Denotified, Nomadic and Semi-Nomadic Tribes from the last 18 years.

**Hobbies** Astrology, Astrophysics, Meta-Physics, Reading Books, Poetry, Sketching, Music, Chess, Table Tennis, Cooking etc.

**Languages** English, Hindi

**Personal Information** **Father's Name:** Prof. Jokhan Ram

**Mother's Name:** Smt. Manorama Devi

**Date of Birth:** 21-06-1974

**Nationality:** Indian

**Marital Status:** Divorced (dated: 01/12/2022)

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**References**

**Dr. Yashwant Singh**

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ksanjay65@gmail.com

**Dr. Vipin Kumar Tripathi**

**Retired Professor**

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Place:

Date:

(Dr. Manish Kumar)