

Dr. Rajneesh Kumar

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Carrier Objective

To accomplish a high quality research on plasma technology and teaching of physics. Areas of interest are plasmas (DC, radio frequency, microwave and laser produced plasmas), plasma antenna, plasma striations / gas discharge, plasma- photonics and metamaterials, laser-matter interaction, plasma deposition, and plasma torch for waste to energy.

Teaching Experiences

Associate Professor (October 2017 continue) : Department of Physics, Institute of Science, Banaras Hindu University, Varanasi, U.P., India.

Assistant Professor (June 2013 - October 2017): Department of Physics, Dr. Hari Singh Gour University (Central University), Sagar, M. P. India.

- **Teaching Subjects:**

- **Ph.D Courses:** Advanced Plasma Physics

- **M.Sc. Courses:** Electrodynamics and Plasma Physics

- Energy and Environment (Elective paper)

- **B.Sc Courses:** Electromagnetism, Electromagnetic waves and Relativity, Nuclear and Particle Physics

- **Practical Courses:** M. Sc and B.Sc. : General and Electronics

Research Experiences

Post-Doctoral Researcher (June 2012- June 2013)

Workplace: Mechanical Engineering Department, Masdar Institute of Science and Technology (MIST), Abu Dhabi, UAE.

Workarea: Study of optical emission spectroscopy of thermal plasmas of microwave plasma torch

Research advisor: Prof. Mohamed Sassi, Dean, MIST, Abu Dhabi, UAE.

Project Scientist (From July 2011 to May 2012)

Work place: Metamaterials and Plasmonics Laboratory, Department of Physics, Indian Institute of Technology, Kanpur, India.

Work area: Formation of polymer based semiconductor thin films by pulsed laser deposition

Research advisor: Prof. S. A. Ramakrishana, Director, CSIR- Central Scientific Instruments Organization (CSIO), Chandigarh.

Post Doctoral Fellow (From June 2009 to June 2011)

Work place: Laser Diagnostics Lab, Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India.

Work area: Study of laser-blow-off plasmas using Triple Langmuir probe

Research advisor: Prof. Ajai Kumar, IPR, Bhat, Gandhinagar, India

Post Doctoral Researcher (From May 2008 to May 2009)

Work place: GREPHE, Laboratoire Plasma et Conversion d' Energie (LAPLACE), CNRS- INPT-UPS, Toulouse, France.

Work area: Study of microplasma-microwave interaction and microwave photonics

Research advisor: Prof. J. P. BOEUF, Director, GREPHE, Toulouse, France

Post Doctoral Fellow (From December 2007 to May 2008)

Work place: Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India.

Work area: Theoretical study of striations in surface wave produced plasmas.

Research advisor: Prof. P. K. Kaw, Founder Director, IPR, Bhat, Gandhinagar, India

Education

Ph. D (Physics) (November 2007)

Radio Frequency Lab., Institute for Plasma Research (I.P.R), Bhat, Gandhinagar, India

Thesis title: Study of radio frequency produced plasma columns

Thesis supervisor: Prof. Dhiraj Bora, Vice-Chancellor, Asaam Science and Technology

University, Gouhati, Aasam. Ex- Director, Institute of Plasma Research, Bhat, Gandhinagar, India, Ex. Deputy Director General, ITER Organization, France.

Master of Science (Physics)

Department of Physics, Banaras Hindu University (B.H.U), Varanasi, India

Specialization: Advanced Nuclear and Particle Physics

Dissertation title: Analysis of π^+ - Pb^{208} optical potentials in 100-300 MeV energy regions

Dissertation supervisor: Prof. A. V. Lagoo, Department of Physics, B.H.U, Varanasi, India.

Achievements/Awards/ Appreciation

- PSSI poster award 2009 for work on Micro-discharges and Applications in Photonic Crystal.
- Expert in the documentary film “ LIGHT POLLUTION”
- Reviewer of Applied Physics Letter, IEEE Transactions on Plasma Science, Physics of Plasmas, Progress in Electromagnetic Research (PIER) and Journal of Electromagnetic

Waves and Applications (JEMWA), Indian Journal of Applied Physics, Contributions to Plasma Physics etc.

- Offer for Assistant Professor of Physics from IFTM University, Moradabad, India.
- Special Thanks in PLASMAX-workshop, March-2009, France for “ New proposals on Plasmas as metamaterials”.
- Offer for Post Doctoral Position from University of Chile, Santiago in January 2008 for work on granular materials.
- Nominated for Buti young scientist award -2006 for the work on reconfigurable plasma antenna.
- Research Fellowship 2001-2007 from Institute for Plasma Research, Bhat, Gandhinagar, India
- Joint Entrance Screening Test (JEST-2001) qualified with 92 percentile.
- Graduate Aptitude Test for Engineering (GATE-2001) qualified.
- Joint Entrance Screening Test (JEST-2000) qualified.
- Merit Scholarship from U.P. Government, India during Intermediate (10+2)th std. in 1992-1993.
- Various awards in cultural programmers (debate, speech, poetry and drama competitions) at Collage, University and Institute level.

Conference /Training Courses/ Workshops/ Session Organized

- ✚ **Session Chair**, 5th International conference on Emerging technology; micro to nano (ETMN-2021), 08 October 2021, Manipal University Jaipur and University of Quebec in Outaouais, Canada.
- ✚ **Moderator**: V-Appliedscience 2021, 20-21 August 2021, Universiti kebangsaan Malaysia, Malaysia

-  **Convener:** One day seminar on “ Recent Trends in Research, 7th Feb. 2020, Department of Physics, Institute of Science, Banaras Hindu University, Varanasi, UP, India.
-  **Convener:** National Conference on Energy for Sustainable Development 23-24 March 2017, Dr. HariSinghGour University, Sagar, M.P, India.
-  **Course Coordinator:** Interdisciplinary refresher course on “Environmental Studies” 16th Jan to 5th Feb. 2017 in HRDC, Dr. HariSinghGour University, Sagar, M.P, India.
-  **Joint Secretary:** International Conference on Interface of physical, chemical and biological sciences, Jan11-13, 2017, Dr. HariSinghGour University, Sagar, M.P, India.
-  **Convener:** Poster Presentation: Science Day Celebration 21-02-2017 to 28-02-2017 Dr. HariSinghGour University, Sagar, M.P, India.
-  **Programme Coordinator:** Science Fair and National Science Day Celebrations, 26th Feb. 2016-4th March 2016, Dr. HariSinghGour University, Sagar, M.P, India
-  **Session Chair:** ICPP 2012: International conference on Plasma Physics: 14-16 November 2012, Venice, **Italy**.

Projects

1. **Project Title:** Simulation and experimental study of plasma-electromagnetic wave (RF / microwave) interactions
Funded agency: University Grant Commission (UGC-START UP GRANT)
Duration: 2014-2016

Supervision of Ph.D Students

1. **May 2019- continue**, Mr. Sanjay Kumar Rajpoot , Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Thesis Title: Study of plasma photonic crystal

2. **June 2013-Dec. 2018**, Dr. Prince Kumar Jain, Department of Physics, Dr. Hari Singh Gour University, Sagar, M.P., India

Thesis Title: Simulation and experimental study on plasma antenna

Prize / Awards:

1. 2nd oral presentation award on “Smart Plasma Antenna using Fluorescent Tubes”, 3rd International Conference on “Recent Trends in Science and Technology”, Swami Vivekanand University Sagar M.P 27-28 Feb (2015).
2. 2nd poster presentation award on “Fluorescent Tubes for Controlling Microwave”, National Science Day Celebration, Dr. H. S. Gour Central University Sagar M.P 28 Feb (2015).

Supervision of Masters Students

1. **July 2021 to June 2022**, Mr. Satayam Keshari, Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Dissertation Title: Study of plasma based sensors

2. **July 2021 to June 2022**, Mr. Mehul Chakravarti, Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Dissertation Title: Study of solid state / si plasma antenna

3. **July 2021 to June 2022**, Mr. Shivam Mishra, Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Dissertation Title: Study of hot and cold electrons interactions with materials.

4. **July 2021 to June 2022**, Miss. Kavita Patel, Department of Physics, Banaras Hindu

University, Varanasi, U.P., India

Dissertation Title: Study of plasmas for toxic gases treatment

5. **July 2020 to June 2021**, Miss. Kalpana Kumari, Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Dissertation Title: Study of communication capability of commercially available fluorescent tubes /lamps

6. **July 2020 to June 2021**, Mr. Satish Kumar, Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Dissertation Title: Analytical study of reconfigurable plasma antenna

7. **July 2020 to June 2021**, Mr. RajKumar Pardeshi, Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Dissertation Title: Study on methods of plasma processing / chemistry for waste to energy applications

8. **July 2020 to June 2021**, Mr. Satyam Verma, Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Dissertation Title: Study of gas discharge mechanism in commercially available fluorescent lamps

9. **July 2019 to June 2020**, Mr. Arkapravo Bera Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Dissertation Title: Study of temperature determination of a plasma torch for waste to energy applications

10. **July 2019 to June 2020**, Mr. Ishitwa Das, Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Dissertation Title: Study of plasma based waste to energy applications

11. **July 2019 to June 2020**, Mr. Ankit Kumar Upadhyay, Department of Physics, Banaras

Hindu University, Varanasi, U.P., India

Dissertation Title: Study of plasma photonic crystal

12. July 18 to June 2019, Mr. Dipendra kumar Gupta, Department of Physics, Banaras Hindu University, Varanasi, U.P., India

Dissertation Title: Designing / modeling of microwave plasma torch for municipality solid waste treatment.

13. January to June 2017, Mr. Shivam Kumar Vishwakarma, Department of Physics, Dr. Hari Singh Gour University, Sagar, M.P., India

Dissertation Title: Study of plasma antenna and plasma-microwave interaction

14. January to June 2017, Mr. Shailesh Patle, Department of Physics, Dr. Hari Singh Gour University, Sagar, M.P., India

Dissertation Title: Study of plasma-microwave interaction

15. January to June 2015, Mr. Rahul Patel, Department of Physics, Dr. Hari Singh Gour University, Sagar, M.P., India

Dissertation Title: Study of microwave based plasma torch for waste treatment

16. January to June 2015, Miss. Nisha Chaurasiya, Department of Physics, Dr. Hari Singh Gour University, Sagar, M.P., India

Dissertation Title: Study of plasma spectroscopy for waste to energy applications

Invited Talks / Lectures

- “ **Nuclear Fusion: An alternative source of energy in future**”, 14th December 2021, 2nd National Science Quiz Competition 2021, organised by ITER-India Institute for Plasma Research and ASC Ranka, Vigyan Prasara, India.

- “ **Plasma applications in electronic devices**”, 14-15 Dec.2021, 36th National Symposium on Plasma Science and Technology (Plasma 21), BIT-Misra Jaipur campus, Jaipur, Rajasthan, India.
- “**Opportunities and Challenges in Nuclear Energy**”, 20th November 2021, Amity University, Noida, Utter Pradesh.
- “**Plasma Photonic Crystal for microwave to THz applications**”, 25-26 October 2021, International Conference on Artificial Intelligence, photonics and Revolutionary smart materials, L. N. Mithala University, Darbhanga, India.
- “ **Applications of micro-plasmas in micro-electronics**”, 08-09 October 2021, 5th International conference on Emerging technology; micro to nano (ETMN-2021), Manipal University Jaipur and University of Quebec in Outaouais, Canada.
- “**Plasma technology for mitigation of air pollution**”, 25th August 2021, National webinar on Environmental degradation: issues and challenges, Gov.P. G. Collage, Damoh, M.P. , India.
- “ **Plasma at interface of science and engineering**”, 13th September 2021, Raman Lecture Series, GIET University, Gunupur, Odisha, India.
- “ **Prospective of Plasma Antenna Technology**”, 20-21 August 2021, V-Appliedscience 2021, Universiti kebangsaan Malaysia, Malaysia.
- “ **Possible applications of plasmas as tunable metamaterials**”, Second International Conference on Advances in Plasma Science and Technology (ICAPST-21), 27-29 May 2021, SRI Shakthi Institute of Engineering and Technology, Coimbatore, India.
- “ **Nuclear Fusion: A source of renewable energy**”, 20th March 2021, Amity University, Noida, Utter Pradesh.
- “ **Plasma Based Electronic Devices**” One Week International Webinar on Electronics and Computing Technology, 27-1st March 2021, Department of Electronics, SUIIT,

Sambhalpur, Odhisha.

- **“ Plasma Technology for Energy Recovery from Plastic Waste”** 2nd March 2021, National Webinar on “ Plastic and Environment” , Gov. P. G. Collage, Damoh, M.P. India.
- **“Recent trends in Industrial Plasma Technology”** 28 Feb. 2021, National Science Day Celebration, Department of Physics and Chemistry, School of Applied Sciences, CUTM, Balangir, Odisha.
- **“ Research Proposal”** 21st Jan.2021, National Faculty Development Programme n – Resaerch and Teaching Techniques, Gov. P. G. Collage, Damoh, M.P.
- **“ Plasma gasification for Hydrogen production from Toxic gases”** National seminar on Physics and Chemistry of Novel Materials, 28-29 Feb., 2020, Department of Physics and Chemistry, School of Applied Sciences, CUTM, Balangir, Odisha.
- **“ Prospective of Industrial Plasma Technology”** , IPA Collaquim talk, Varanasi Chapter, Department of Physics, Institute of Science, Banaras Hindu University, 20th September 2019.
- **“Vedic Science Prospective and Future”** in National workshop on Vedic mathematics 2017, held at Department of Mathematics and Statistics, Dr. HarisinghGour Central University, Sagar, MP on 6-7 Jan. 2017.
- **“Make in India: Innovations and opportunities in plasma science and technology”**, in the Science fair and science day celebrations-2016, Dr, HarisinghGour University, Sagar, M.P, India on 2nd March 2016.
- **“Challenges and Solutions of local environmental issues”** at International conference on “ Challenges in Environmental science and technology (IC-CEST-2016), Swami Vivekanand University, Sagar, MP, India on 27th -28th February 2016.
- **“Prospective of Industrial Plasma Technology”** at International Conference on

Recent Trends in Science and Technology, Swami Vivekanand University, Sagar, MP, India on 28th February 2015.

- **“Plasma Torch for Environment and Energy of Sustainable Future”** at International Conference on Energy, Environment and Life Science for Sustainable Future, Swami Vivekanand University, Sagar, MP, India on 1st March 2014.
- **“Plasma Technology: a future carrier”** at workshop on Career Opportunity and Guidance in Biotechnology, Industrial Chemistry, Physics and All Science Subjects, Noble Collage, Sagar, MP on 15th Feb.2014.

Orientation/Refresher Courses / workshops for Teachers

1. Interdisciplinary refresher course on **“ Instrumental Analysis Methods and Interpretation”** from 30th November 2015 to 20th December 2015 at UGC-HRDC Dr. HarisinghGour University, Sagar, M.P with grade **“A”**
2. 52nd Orientation programme from 10th November 2014 to 7th December 2014 at UGC-Academic Staff College, Dr. H.S.G Central University, Sagar, M.P with ‘A’ grade.
3. Workshop on **“Harnessing Intellectual Property and Its Management for Growth and Prosperity”** on 4th June 2014.NRDC and Dr. H.S.G. University, Sagar, MP, India.
4. Training workshop on **“ Turnitin”** on 9th May 2014 at Dr. H.S.G Central University, Sagar (MP), India.
5. Workshop on **“Nuclear Magnetic Resonance Spectroscopy and its Applications in Physics, Chemistry and Biology”**, on 15th Feb. 2014, Dr. H.S.G. University, Sagar, MP, India

List of Publications

Books

1. **Oscillations in Laser Plasma**

Author: Rajneesh Kumar

Publisher: LAP LAMBERT Academic Publishing GmbH & Co. KG,
DudweilerLandstraße 9966123 Saarbrücken, Germany. **ISBN:** 978-3-659-30837-6,
Year: 2013

2. Plasma Striations

Author: Rajneesh Kumar

Publisher: LAP LAMBERT Academic Publishing GmbH & Co. KG,
DudweilerLandstraße 9966123 Saarbrücken, Germany. **ISBN:** 978-3-659-13883-6,
Year: 2012

3. Plasma as Metamaterial

Author: Rajneesh Kumar

Publisher: LAP LAMBERT Academic Publishing GmbH & Co. KG,
DudweilerLandstraße 9966123 Saarbrücken, Germany. **ISBN:** 978-3-8443-1811-1,
Year: 2011

4. Plasma Antenna

Author: Rajneesh Kumar

Publisher: LAP LAMBERT Academic Publishing GmbH & Co. KG,
DudweilerLandstraße 9966123 Saarbrücken, Germany. **ISBN:** 978-3-8443-0530-2,
Year: 2011.

Chapter

5. Plasma Photonic Crystal

Chapter No. 14, Page No. 281-294

Author: Rajneesh Kumar

Book: Photonic Crystals - Innovative Systems, Lasers and Waveguides

Editor: Dr. Alessandro Massaro

Publisher: In Tech - Open Access Publisher Web: <http://www.intechweb.org/>

ISBN: 978-953-51-0416-2, **Year:** March 2012

Publications in Journals

6. A. Prakasham, P.M. Anbarasan, R. Azhagu Raj, C. Ragupathi, Rajneesh Kumar, “ Morphologies, crystal structure and antibacterial properties of chromium substituted zinc oxide nanoparticles synthesized by microwave”, Materials Today: Proceedings, Accepted.
7. M. Abu-Samak, Upendra Kumar, A.M. Quraishi, Rajneesh Kumar, Shalendra Kumar, S. Delela, M. Ayaz Ahmed, B.L. Chaoudhary, P. A. Alvi, “ RIXS, XES and XAS studies for electronic structure of rare earth and alkaline modified manganite”, Physica B: Condensed Matter, 413562 (20th Nov.2021).
8. Tarun Yadav, Goutam Brahmachari, Indrajit Karmakar, Saumen Saha, Joydeep Chowdhury, Amit Pathak, Rajneesh Kumar, R. Sharma, Ricardo R. F.Bento & Nagendra P. Yadav, Spectroscopic Investigation of Electron-Releasing Functional Groups Substituted N-Iso-Butyl, S-2-Nitro-1-Phenylethyl Dithiocarbamate – A DFT Approach” Polycyclic Aromatic Compounds, DOI: 10.1080/10406638.2021.1993940, (October 2021).
9. Amit k. Mishra, Rajneesh Kumar, Vijay K. Yadav, “ Stability Abalysis And Controlling Chaos Of Fractional-Order Three Species Food Chain Model With Fear”

International J. of Appl. Compu. Math., 7, 214 (Sept 2021).

10. T. Yadav, G. Brahmachari b , I. Karmakar , P. Yadav , A.K. Prasad , A. Pathak , A. Agarwal , **R. Kumar** , V. Mukherjee, G.N. Pandey, R.R.F. Bento , N.P. Yadav, “Conformational and vibrational spectroscopic investigation of N - n –butyl, S -2-nitro-1-(p -tolyl)ethyl dithiocarbamate –a bio-relevant sulfur molecule” Journal of Molecular Structure, 1238, 130450 (April 2021).
11. Prince Kumar and **Rajneesh Kumar**, “Parametric study of Plasma and metallic antenna” International Journal of Scientific Research in Physics and Applied Sciences, 4, 88-94 (August 2018). ISSN : 2348-3423 (Online), IF: 1.320, UGC approval: 63781.
12. **Rajneesh Kumar** and Prince Jain, “ Study of array plasma antenna parameters” AIP Advances, 8, 045306 (April 2018). ISSN 2158-3226, IF: 1.7.
13. Prince Kumar and **Rajneesh Kumar**, “Study of Monopole Plasma Antenna Parameters” Indian Journal of Pure and Applied Physics, 56, 238-247 (March 2018). ISSN: 0975-1041 (Online) ; 0019-5596 (Print)
14. Prince Kumar and **Rajneesh Kumar**, “Simulation of Plasma Antenna Parameters”, International Journal of Engineering Technology, Management and Applied Sciences, vol. 4, issue 5, 256-261 (May 2016), ISSN/ISBN: 2349-4476, IF: 2.4.
15. **Rajneesh Kumar** and Prince Jain, “Simulation of Radiation Pattern of a Reconfigurable Plasma Antenna”, International Journal of Engineering Technology Science and Research, vol.3 issue 4, 195-202 (April 2016), ISSN/ISBN: 2349-3386, IF: 2.5.
16. Liu Su, **Rajneesh Kumar**, Babajide Ogungbesan, Mohamed Sassi, “Experimental investigation of gas heating and dissociation in a microwave plasma torch at atmospheric pressure”, Energy Conversion and Management, 78, 695-703 (Feb. 2014), ISSN/ISBN: 0196-8904, IF: 3.5.

17. BabajideOgungbesan, Rajneesh Kumar, Liu Su and Mohamed Sassi, “Experimental validation of local thermal equilibrium in a MW plasma torch for hydrogen production”International Journal of Hydrogen Energy, 38, 15210-15218 (2013), ISSN/ISBN: 0360-3199, IF: 2.9.
18. Rajneesh Kumar, Ajai Kumar and R. K . Singh “Effects of magnetic field on oscillatory structures in laser-blow-off plasma”, Physics Letters A, 377, 93-98 (2012), ISSN/ISBN: 0375-9601, IF: 1.9.
19. Babajide O. Ogungbesan, Rajneesh Kumar and Mohamed Sassi, “Optical characterization of a microwave plasma torch for hydrogen production”World Academy of Science, Engineering and Technology, 71, 1925-1931 (2012), ISSN/ISBN: 2010376x, IF: 1.2.
20. Rajneesh Kumar, “Study of transverse and longitudinal bifurcation for pattern formation of a plasma column”, Physics Letters A, 376, 2126-2135 2012),ISSN/ISBN: 0375-9601, IF: 1.9.
21. Rajneesh Kumar, “Self-structuring in laser-blow-off plasmas”, International Journal of Scientific and Engineering Research (IJSER), 6 (3), 1-9 (2012), ISSN/ISBN: 2229-5518, IF: 1.4.
22. Rajneesh Kumar, Ajai Kumar, R. K . Singh and Jinto Thomas “Experimental investigation of oscillatory structures in laser-blow-off plasma plume”, Physics Letter A, 375, 2064-2070 (2011), ISSN/ISBN: 0375-9601, IF: 1.9.
23. Rajneesh Kumar, “Experimental study of electromagnetic band gaps using plasmas or defaults in metallic photonic crystals”,Microwave and Optical Technology Letter, 53 (5), 1109-1113 (2011),ISSN/ISBN: 53:1109-1113, IF: 0.9.
24. Rajneesh Kumar, “Study of negative and positive refractions for microwave using metallic photonic crystals”, International Journal for Microwave and Optical

Technology, 6 (2), 80-84 (2011), ISSN/ISBN: 2010-10-22, IF: 0.2.

25. **Rajneesh Kumar** and Dhiraj Bora, “Wireless communication capability of a reconfigurable plasma antenna” Journal of Applied Physics, 109 (6), 0633031-9 (2011), ISSN/ISBN: 0021-8979, IF: 2.5.
26. **Rajneesh Kumar** and Dhiraj Bora, “Experimental study of antenna parameters of a plasma antenna”, Plasma Science and Technology, 12 (5), 592-600 (2010), ISSN/ISBN: 1009-0630, IF: 0.5.
27. **Rajneesh Kumar** and Dhiraj Bora, “A reconfigurable plasma antenna”, Journal of Applied Physics, 107, 0533031-9 (2010), ISSN/ISBN: 0021-8979, IF: 2.5.
28. **Rajneesh Kumar** and Dhiraj Bora, “Experimental investigation of different structures of rf produced plasma columns”, Physics of Plasmas, 17, 043503-7 (2010).
ISSN/ISBN: 1070-664x, IF: 2.5.
29. **Rajneesh Kumar**, Sanjay V. Kulkarni and Dhiraj Bora, “Cylindrical stationary striations in surface wave produced plasma columns of argon”, Physics of Plasmas, 14, 122101-8 (2007), ISSN/ISBN: 1070-664x, IF: 2.5.

Conference Proceedings / Research Report publications

30. **Rajneesh Kumar**, “ Study of possible applications of plasmas as tunable metamaterials”, IPR/RR-466/2010, Available at:
<http://www.ipr.res.in/library/preprint/RR464–10.pdf>
31. **Rajneesh Kumar**, “ Hybrid plasma photonic crystal” , Proc. International Symposium of Microwave and Optical Technology (ISMOT 2009), December 16-19, 2009, pp 898-901, ISMOT /09/C/482, New Delhi, India.
32. **Rajneesh Kumar**, “Controlling of microwave propagation in metallic photonic crystal using plasma column” , IEEE Xplore, Print ISBN: 978-1-4244-4818-0, Proc. IEEE Applied Electromagnetics Conference (IEEE AEMC 2009), December 14-

16, 2009, pp 1-4 Kolkata, India.

33. **Rajneesh Kumar** and Dhiraj Bora, “Phased array plasma antenna”, Proc. IEEE-International Symposium on Microwave-2006 (ISM-2006), December 15-17, 2006, NIMHNS, pp 381-503. Bangalore, India.
34. **Rajneesh Kumar** and Dhiraj Bora, “ Characterization of monopole plasma antenna” , Proc. Recent Advancements in Microwave Technique and Applications (Microwave-06), October 6-8, 2006, pp 499-503 Jaipur University, Rajasthan, India.
35. **Rajneesh Kumar** and D. Bora, “ Versatile Plasma Antenna”, IPR/RR-335/October-2004, <http://www.ipr.res.in/adas/preprint/rr335-04.pdf>
36. **Rajneesh Kumar** and D. Bora, “ Striations in Surface Wave Produced Plasma Column”, IPR/RR-336/October-2004, <http://www.ipr.res.in/adas/preprint/rr336-04.pdf>
37. **Rajneesh Kumar** and D. Bora, “ Characterization of Surface Wave in Cylindrical Plasma Column”, IPR/RR-337/October-2004, <http://www.ipr.res.in/adas/preprint/rr337-04.pdf>
38. D. Bora, **Rajneesh Kumar**, S. K. P. Tripathi and R. G. Trevedi, “ Versatile Plasma antenna”, National Symposium on Antenna and Propagation (APSYM-2002), December 9-11, 2002, pp 365-368, CUST, Cochin, Kerala, India.

Conference Presentations (Talks / Posters)

1. “ **Study of microwave interaction to fluorescent tube plasma**”, 14-15 Sept., 2020, International e—Conference on Plasma Theory and Simulations, Department of Pure and Applied Physics, G.G.V. Bilaspur, C.G., India
2. “ **Microwave Thermal Plasma Torch for Waste to Energy Applications**” International Conference on Interface of Physical, Chemical and Biological Sciences,

11-13 Jan. 2017, Dr. Harisingh Gour Vishavidyalaya (A central university), M.P. , India.

3. **“Study of Resonance Frequencies of Plasma Antenna”** 7-8 Nov. 2016, International Conference on Frontiers of Physics and Plasma Science, Ujjain Engineering Collage, Ujjain, M.P., India.
4. **“Simulation of Radiation Pattern of a Reconfigurable Plasma Antenna”**, 4th International conference on Emerging trends of engineering science management and its applications in India international Centre, New Delhi, on May 01, 2016.
5. **“Oscillations in laser-blow-off plasma”**, International Conference on “ High Power Coherent Radiation Generation and Its Interaction with Matter” in Samrat Ashok Technological Institute, Vidisha, M.P, India, February 12-14, 2016.
6. **“Study of pressure driven oscillations in laser-blow-off plasma plume in the absence of ambient gas”**, International Symposium on Waves, Coherent Structure and Turbulence in Plasmas, Institute for Plasma Research, January 12-15, 2010, Bhat, Gandhinagar, India.
7. **Plasmas as metamaterials**, June 3, 2009, Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India.
8. **Meta materials- A new insight with plasmas**, March 18, 2009, PLASMAX workshop -2009, Bonascre, France.
9. **Different plasma structures in surface wave produced plasma column**, International Conference on Turbulence, December 21-23, 2009, Indian Institute of Technology (IIT) Kanpur, India.
10. **Hybrid plasma photonic crystal**, International Symposium of Microwave and Optical Technology (ISMOT 2009), December 16-19, 2009, New Delhi, India.
11. **Controlling of microwave propagation in metallic photonic crystal using plasma**

column, IEEE Applied Electromagnetics Conference (IEEE AEMC 2009), December 14-16, 2009, Kolkata, India.

12. Possible application of ultra-cold plasmas as tunable metamaterials for microwave, 24th National Symposium on Plasma Science and Technology (PLASMA 2009), December 8-11, 2009, Hamirpur, HP, India.

13. Microplasmas and applications in photonic crystals, 24th National Symposium on Plasma Science and Technology (PLASMA 2009), December 8-11, 2009, Hamirpur, HP, India

14. Possible application of RF produced plasma column as plasma antennas

May, 20, 2008, PLASMAX-2008, GREPHE / LAPLACE, UPS, Toulouse, France.

13. Analysis of stationary striations in surface wave produced plasma column of argon, 8th Asia Pacific Plasma Theory Conference (APPTC- 2007), December 11-13, 2007, Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India.

14. Application of striations as antenna elements, 6th Conference of Asia Plasma and Fusion Association (APFA- 2007), December 3- 5, 2007, Institute for Plasma Research, Bhat, Gandhinagar, Gujarat, India.

15. Study of RF produced plasma columns, September 27, 2007, Institute for Plasma Research, Bhat, Gandhinagar, India.

16. Different plasma structures as different antennas 21st National Symposium on Plasma Science and Technology (PLASMA -2006), December 19-22, 2006, MNIT, Jaipur, Rajasthan, India.

17. Characterisation of surface wave in cylindrical plasma column, 21st National Symposium on Plasma Science and Technology (PLASMA -2006), December 19-22, 2006, MNIT, Jaipur, Rajasthan, India.

18. Phased array plasma antenna, IEEE-International Symposium on Microwave-

2006 (ISM-2006), December 15-17, 2006, NIMHNS, pp 381-503. Bangalore, India.

- 19. Characterization of monopole plasma antenna**, Recent Advancements in Microwave Technique and Applications (Mirowave-06), October 6-8, 2006, pp 499-503 Jaipur University, Rajasthan, India.
- 20. Stationary striations in rf plasma columns as antenna**, 7th Carolus Magnus Summer School on Plasma and Fusion Energy Physics, September 5-16, 2005, Mechelen, The Netherlands.
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International Meetings / Summer Schools

- 1. 6th World Future Energy Summit 2013**, Jan. 15-17, 2013, Abu Dhabi, UAE.
- 2. 5th International Renewable Energy Conference 2013**, Jan. 15-17, 2013, Abu Dhabi, UAE.
- 3. 7th Carolus Magnus Summer School on Plasma and Fusion Energy Physics**,

September 5-16, 2005, Mechelen, The Netherlands.

Society Memberships

- Active member of National Service Scheme (NSS) during 1994-96.
- Life member of Plasma Science Society of India (PSSI) from 2002.
- IEEE student membership during 2007-08.

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