

Dr. Vipin Kumar Yadav

Scientist/Engineer – SF

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Research Area: Plasma Physics, Space Plasma Physics, Plasma Waves, Plasma diagnostics, Plasma wave instrumentation, Space-borne Particle Detectors, Electric and Magnetic field measurements in Space.

Major Scientific/Technical Responsibilities

1. Principal Investigator (PI); Fluxgate Magnetometer onboard Aditya-L1 Solar Mission
2. Principal Investigator (PI); VIPER (Venus Ionospheric Plasma wavE detectoR) onboard Venus Orbiter Mission.
3. Principal Investigator (PI); PADMA (Plasma wAve Detector for MArS) onboard Mars Orbiter Mission -2.
4. Project Manager (PM) [Langmuir Probe (LP) – Payload Characterization], RAMBHA (Radio Anatomy of Moon Bound Hyper-sensitive Atmosphere & Ionosphere) onboard Chandrayaan-2 Lander.
5. Project Manager (PM) [Material Management and Sub-system Development], CHACE-2 (CHandra Atmospheric Composition Explorer–2) onboard Chandrayaan-2 Orbiter since May 2017.
6. Project Manager (PM) [Payload Development], CHACE-2 (CHandra Atmospheric Composition Explorer–2) onboard Chandrayaan-2 Orbiter during April 2014 – May 2017.
7. Deputy Project Manager (DPM) [Payload Development]; MENCA (Mars Exospheric Neutral Composition Analyser) onboard Mars Orbiter Mission (MOM); September, 2011.

Awards/Honors/Recognition/Aclamations

Reviewer for Journals

1. *Acta Astronautica*; Elsevier, Amsterdam, The Netherlands.
2. *Advances in Space Research*; Elsevier, Amsterdam, The Netherlands.
3. *Indian Journal of Radio & Space Physics*, India.
4. *Reviews of Modern Plasma Physics*; Switzerland.
5. *IEEE Transactions on Plasma Science*; USA.
6. *Physics of Plasmas*; USA.
7. *Earth, Planets and Space*; Springer, USA.
8. *Applied Thermal Engineering*; Elsevier, The Netherlands.

Scientific sessions Judged

1. Poster Session “Space Plasmas”; 27th National Symposium on Plasma Science &

- Technology (Plasma 2012); December 10–13, 2012; Puducherry, India.
2. Student Paper Competition; 1st URSI Regional Conference on Radio Science (RCRS-2014); January 02 – 05, 2014; Pune, India.
 3. Poster Session “Plasma Processing”; 29th National Symposium on Plasma Science & Technology (Plasma 2014); December 08–11, 2014; Kottayam, India.
 4. Poster Session “Nuclear Fusion”; 29th National Symposium on Plasma Science & Technology (Plasma 2014); December 08–11, 2014; Kottayam, India.
 5. Student Paper Competition; 3rd URSI Regional Conference on Radio Science (RCRS-2017); March 01 – 04, 2017; Tirupati, India.
 6. Poster Session “Space Plasmas”; 32nd National Symposium on Plasma Science & Technology (Plasma-2017); November 07-10, 2017; Gandhinagar, India.
 07. Oral and Poster Presentations during the 4th Indian Planetary Science Conference (IPSC-2023); March 22-24, 2023; Physical Research Laboratory (PRL), Ahmedabad, India.

Membership in Professional Bodies:

International (07)

1. Member (1393), Association of Asia-Pacific Physical Societies – Division of Plasma Physics (AAPPS-DPP), Kyoto, **Japan**.
2. URSI Individual Member (MURSI No. M1810501857), International Union of Radio Science, Ghent, **Belgium**.
3. Associate of COSPAR (Committee on Space Research), Paris, **France**.
4. Individual Member, IAU (International Astronomical Union), Paris, **France**.
5. Member, International Low Temperature Plasma Community (ILTPC), **USA**.
6. Regular Member (ID 589552), European Geosciences Union (EGU), **Germany**.
7. Member (ID 11001783), Society of Geomagnetism and Earth, Planetary and Space Sciences (SGEPSS), **Japan**.

National (18)

1. Plasma Science Society of India (**PSSI**), Gandhinagar, Gujarat.
2. Indian Centre for Space Physics (**ICSP**), Kolkata.
3. Astronomical Society of India (**ASI**), Hyderabad.
4. Indian Physical Society (**IPS**), Kolkata.
5. Indian Physics Association (**IPA**), Mumbai.
6. Indian Vacuum Society (**IVS**), Mumbai.
7. Magnetics Society of India (**MSI**), Hyderabad.
8. The Indian Science Congress Association (**ISCA**), Kolkata.
9. Indian Society of Atomic & Molecular Physics (**ISAMP**), Ahmedabad.

10. Space Society of Mechanical Engineers (**SSME**), Ahmedabad.
11. Life member (LM638), Indian Society of Systems for Science & Engineering (**ISSE**), Thiruvananthapuram.
12. Life member, Indian Space Scientists Association (**ISSA**), Trivandrum.
13. Life member (LM-11071), Indian Nuclear Society (**INS**), Mumbai.
14. Life member (L-161), Thermophysical Society of India (**TPSI**), Jaipur.
15. Life member (LM-500), Indian Society for Particle Accelerators (**ISPA**), Indore.
16. Life member, Energy Science Society of India, Puducherry.
17. Life Member (M2019049), Indian Radio Science Society (InRaSS), New Delhi.
18. Life Member, Indian Planetary Science Association (IPSA), Ahmedabad.

Organization of Conferences/Symposia/Workshop (05)

1. Member, LOC; “2nd Kolkata Conference on Observational Evidence for Black Holes in the Universe” & Satellite meeting on “Black Holes, Neutron Stars and Gamma Ray Bursts”; February 10-17, 2008; S.N. Bose National Centre for Basic Sciences (SNBNCBS), Kolkata.
2. Member, Scientific Organizing Committee (SOC); Workshop on “Multi-payload and Multi-Observatory Science with Aditya-L1” (WS6); XXXIX Meeting of the Astronomical Society of India (ASI); February 18-23, 2021; Online-Mode.
3. Member, Scientific Organizing Committee (SOC); Workshop on “Multi-payload and Multi-Observatory Science with Aditya-L1” (WS6); XXXIX Meeting of the Astronomical Society of India (ASI); February 18-23, 2021; Online-Mode.
4. Member, Scientific Organizing Committee (SOC); First Meeting of Science from In-situ Measurements of Aditya-L1 (SIMA-01); April 11-13, 2023; Space Physics Laboratory (SPL), Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram, Kerala.
5. Member, Scientific Organizing Committee (SOC); National Symposium on Gaseous Discharges (NSGD-2023); August 09-11, 2023; Department of Physics, Pondicherry University, Pudducherry - 605 014.

Publications:

Books edited (1)

1. Comment Editor, Proceedings of the 27th National Symposium on Plasma Science & Technology “Plasma 2012” June 2013.

Chapters in Books (2)

1. Vipin K. Yadav; Plasma Diagnostics in Space onboard Planetary Missions; *Advances in Experimental and Theoretical Physics*; Editor: Unnikrishnan Kaleekkal; June, 2017, 72–78; NSSHC Press, NSS Hindu College, Changanacherry 686 102, Kerala, India; ISBN: 978-81-933197-0-3
2. Vipin K. Yadav and Anil Bhardwaj; Plasma Waves beyond the Solar System; *Plasma and*

Fusion Science: From Fundamental Research to Technological Applications; Part II: Space and Atmospheric Plasma, Chapter 15; Editors: B. Raneesh, Nandakumar Kalarikkal, Jemy James, Anju K. Nair; January, 2018; 231–241; Apple Academic Press, USA; Hard ISBN: 978-1-77188-453-2, E-Book ISBN: 978-1-315-36594-7

Journals (26)

1. Vipin K. Yadav & D. Bora (2004), “Ultrasoft x-ray emission from a linear ECR plasma source”, *Plasma Sources Science & Technology*, **13** (2), 2004, 231-236
2. Vipin K. Yadav & D. Bora (2004), “Observation of parametric decay spectrum in a cylindrical ECR plasma system”, *Physics of Plasmas*, **11**(7), 2004, 3409-3416
3. Vipin K. Yadav & D. Bora (2004), “Electron Cyclotron Resonance Heating in a short cylindrical plasma system”, *Pramana*, **63** (3), September 2004, 563-577
4. Vipin K. Yadav & D. Bora (2004), “Electron Bernstein wave generation in a linear plasma system”, *Physics of Plasmas*, **11** (10), October 2004, 4582-4588
5. D. Bora, ..., V. K. Yadav, ... (2006), “Cyclotron Resonance Heating systems for SST-1”, *Nuclear Fusion*, **46** (3), March 2006, S72-S84
6. Vipin K. Yadav, K. Sathyanarayana, D. Purohit & D. Bora (2007), “A Tetrode based fast pulsed microwave source for ECR breakdown experiments”, *Review of Scientific Instruments*, **78** (2), February 2007, 023503
7. Vipin K. Yadav, K. Sathyanarayana & D. Bora (2008), “Electron cyclotron resonance breakdown studies in a linear plasma system”, *Pramana*, **70** (3), March 2008, 487-501
8. Vipin K. Yadav & D. Bora (2008), “Electric probes for the characterization of microwave-produced plasma”, *Physica Scripta*, **T131**, 2008, 014023:1-6
9. Sandip K. Chakrabarti, ... , V.K. Yadav & R. Sarkar (2009), “Fresnel zone plate telescopes for X-ray imaging I: experiments with quasi-parallel beam”, *Experimental Astronomy*, **24** (1-3), May 2009, 109-126
10. Sourav Palit, ... , Vipin K. Yadav, V. Girish (2009), “Fresnel zone plate telescopes for X-ray imaging II: Numerical simulation with parallel and diverging beam”, *Experimental Astronomy*, **27** (1-2), December 2009, 77-93
11. A. Nandi, ... , Vipin K. Yadav, ... , (2011), “Instruments of RT-2 experiment onboard CORONAS-PHOTON and their test and evolution III: Coded Aperture Mask & Fresnel Zone Plate in RT-2/CZT payload”, *Experimental Astronomy*, **29** (1-2), February 2011, 55-84
12. S.K. Chakrabarti, ... , Vipin K. Yadav, ... (2012), “VLF signals in summer and winter in the Indian sub-continent using multi-station campaigns”, *Indian Journal of Physics*, **86** (5), May 2012, 323-334
13. Anil Bhardwaj, ... , Vipin K. Yadav, A.V. Aliyas (2015), “MENCA Experiment aboard India’s Mars Orbiter Mission”, *Current Science*, **109** (6), September 2015, 1106-1113

14. Anil Bhardwaj, ..., Vipin K. Yadav, and A.V. Aliyas (2015), “MENCA onboard the Indian Mars Orbiter Mission”, *Physics Education*, 31 (3), July – September 2015, 1-8
15. Anil Bhardwaj, ..., Vipin K. Yadav, ... (2016), “On the evening time exosphere of Mars: Result from MENCA aboard Mars Orbiter Mission”, *Geophysical Research Letters*, **43** (5), March 2016, 1862-1867
16. Vipin K. Yadav (2016), “Plasma Waves in the Sun”, *Universal Journal of Physics and Applications*, **10** (6), December 2016, 193-197
17. Anil Bhardwaj, ..., Vipin K. Yadav, ... (2017), “Observation of Suprathermal Argon in the Exosphere of Mars”, *Geophysical Research Letters*, **44** (5), March 2017; 2088–2095
18. P. Janardhan, ..., Vipin K. Yadav, ... (2017), “Probing the heliosphere using in-situ payloads on-board Aditya-L1” *Current Science*, **113** (4), August 2017, 620- 624
19. Vipin K. Yadav, Nandita Srivastava, S. S. Ghosh, P. T. Srikar and K. Subhalakshmi (2018), “Science objectives of the Magnetic Field Experiment onboard Aditya-L1 Spacecraft”, *Advances in Space Research*, **61** (2), 749-758
20. Vipin K. Yadav, (2020), “Alfven wave detection at first Lagrangian point with magnetic field measurements”, *IETE Technical Review*, **37** (1), 03-11
21. T. P. Das, ..., Vipin K. Yadav, ... , (2020), “Chandra’s Atmospheric Composition Explorer-2 (CHACE-2) aboard Chandrayaan-2 to study the lunar neutral exosphere”, *Current Science*, 118 (2), 202-209
22. G. Manju, ..., Vipin K. Yadav, ... , (2020), “Lunar near surface plasma environment from Chandrayaan-2 Lander platform: RAMBHA-LP payload”, *Current Science*, 118 (3), 383-391
23. Vipin K. Yadav, (2021), “Plasma Waves around Venus and Mars”, *IETE - Technical Review*, **38** (6), 622-661
24. M.B. Dhanya, ..., Vipin K. Yadav, ... , (2021), “Argon-40 in Lunar Exosphere: Observations from CHACE-2 on Chandrayaan-2 Orbiter”, *Geophysical Research Letters*, **48** (20), doi:10.1029/2021GL094970
25. Vipin K. Yadav, (2022), “Plasma Waves around Comets”, *IETE - Technical Review*, **39** (6), 1324-1354
26. M. Chakraborty, Vipin K. Yadav, and R. Kumar, (2023), “Two Stream Instability Generation in the Lunar Ionosphere”, *Advances in Space Research*, 71 (6), 2954-2966

Conference Proceedings (22)

1. D Bora, ... , Vipin K. Yadav , (2005), “Test and Commissioning of 82.6 GHz ECRH system on SST-1”, Journal of Physics: Conference Series, Vol. **25**, Page: 96-102 Third IAEA Technical Meeting on ECRH Physics and Technology in ITER, Como, Italy, 2-5 May 2005
2. V.K. Yadav, K. Sathyanarayana & D. Bora (2007), “Microwave Produced Plasma Study

in a Cylindrical System”, International Conference on Research & Applications of Plasmas (PLASMA-2007); 4th German-Polish Conference on Plasma Diagnostics for Fusion & Applications; 6th French-Polish Seminar on Thermal Plasma in Space & Laboratory, Greifswald, Germany, October 16-19, 2007; AIP Conf. Proc., **993**, Page: 307 - 310

3. Vipin K. Yadav and D. Bora (2008), “*Electric probes for the characterization of microwave produced plasma*”, Physica Scripta, T131, 014023, Proceedings of XIIth Latin American Workshop on Plasma Physics, Caracas, Venezuela, September 17-22, 2007

4. Sourav Palit, ..., Vipin K. Yadav, Anuj Nandi (2008), “*Fresnel zone plates for Achromatic Imaging Survey of X-ray sources*”, Proceedings of 2nd Kolkata Conference on "Observational Evidence for Black Holes in the Universe" & Satellite Meeting on "Black Holes, Neutron Stars & Gamma Ray Bursts from February 10-17, 2008; Kolkata, India, Eds. S.K. Chakrabarti, A. Majumdar, AIP Conference Proceedings, **1053**, New York, Page: 391 - 394

5. S.K. Chakrabarti, ..., V.K. Yadav, A.R. Rao (2008), “*CSPOB - Continuous Spectrophotometry of Black Holes*”, Proceedings of 2nd Kolkata Conference on “Observational Evidence for Black Holes in Universe” & Satellite Meeting on "Black Holes, Neutron Stars & Gamma Ray Bursts from February 10-17, 2008; Kolkata, India, Eds. S.K. Chakrabarti, A. Majumdar, AIP Conference Proceedings, **1053**, New York, Page: 409 - 412

6. Vipin K. Yadav, S.K. Chakrabarti, A. Nandi, S. Palit (2009), “*X-ray experiments for Space applications in intermediate energy range*”, Proceedings of the “International Conference on Space Technology”; August 24-26, 2009; Thessaloniki, Greece, Eds. G Lampropoulos & M. Petrou. ISBN-9-781901-725384 (arXiv: 0912.5290)

7. S.K. Chakrabarti, ... , Vipin K. Yadav, D. Debnath (2009), “*Fresnel Zone Plate Telescopes as high resolution imaging devices*”, Proceedings of “International Conference on Space Technology”; August 24-26, 2009; Thessaloniki, Greece, Eds. G Lampropoulos & M. Petrou. ISBN-9-781901-725384 (arXiv: 0912.4127)

8. Anil Bhardwaj & CHACE-2 Team(*); The CHACE-2 Team: SV Mohankumar, P Sreelatha, P Pradeepkumar, B Sunder, TP Das, A. Nandi, Neha Naik, G Supriya, RS Thampi, G Padmanabhan, V.K. Yadav, MB Dhanya, N Raghu, AV Aliyas (2011), “*Study of Lunar Exosphere with the CHACE-2 Experiment*”, Proceedings of conference “Planetary Sciences & Exploration”; December 12-14, 2011; Physical Research Laboratory, Ahmedabad, India. Page: 09-10

9. Anil Bhardwaj, ..., Vipin K. Yadav, ... (2011), “*Exploration of Martian Upper Atmosphere-Exosphere*”, Proceedings of the conference “Planetary Sciences & Exploration”; December 12-14, 2011; Physical Research Laboratory, Ahmedabad, India. Page: 14-15

10. R. Satheesh Thampi, Abhinaw Alok, Anil Bhardwaj, Vipin K. Yadav and M.B. Dhanya (2011), “*Plasma Energy eXplorer (PLEX) - A novel electrostatic analyser for planetary plasma exploration*”, Proceedings of the conference “Planetary Sciences & Exploration”; December 12-14, 2011; Physical Research Laboratory, Ahmedabad, India. Page: 134-135

11. Vipin K. Yadav, and Anil Bhardwaj (2011), “*Plasma Waves in Planetary Ionosphere-*

- Magnetosphere System*”, Proceedings of the conference “Planetary Sciences & Exploration”; December 12-14, 2011; Physical Research Laboratory, Ahmedabad, India. Page: 160 - 161.
12. Vipin K. Yadav, R.S. Thampi and Anil Bhardwaj (2013), “*Plasma Waves in the Solar System*”, Proceedings of “27th National Symposium on Plasma Science & Technology”; December 10-13, 2012; Pondicherry University, Puducherry, India. SA02, Page: 454 - 458.
13. Vipin K. Yadav, Anil Bhardwaj & R. Satheesh Thampi (2014), “*Plasma Waves in and around Sun*”, Proceedings of the “URSI Regional Conference on Radio Science”; January 2-5, 2014; Symbiosis Institute of Technology (SIT), Pune, India. Session 3H, Page: 97-98.
14. Vipin K. Yadav, ..., Anil Bhardwaj (2015), “Performance evaluation of a newly designed Langmuir probe with a variable energy electron source”, Proceedings of the “National Symposium on Vacuum Technology and its Applications to Electron Beams (IVSNS-2015)”, November 18-20, 2015; TIFR, Mumbai. Page: 1-4
15. R. Satheesh Thampi, ..., Vipin K. Yadav, ... (2015), “A novel technique for the characterization of low energy electron beam under high vacuum conditions”, Proceedings of the “National Symposium on Vacuum Technology and its Applications to Electron Beams (IVSNS-2015)”, November 18-20, 2015; TIFR, Mumbai. Page: 1-4
16. Rasul Muthu A., Vipin K. Yadav and Shefin Shoukath (2016), “Solar plasma wave studies at L1 point with magnetic field measurements from magnetometers”, Proceedings of International Conference on Advanced Communication, Control & Computing Technologies (ICACCCT-2016) ; May 25–27, 2016; Syed Ammal Engineering College, Ramanathapuram, Tamil Nadu, India. Page: 298–302; ISBN: 978-1-4673-9545-8
17. Vipin K. Yadav, “Solar Alfven wave detection at L-1 point with interplanetary magnetic field measurements”, Proceedings of National Conference on Plasma Physics and Non-linear Dynamics (NCPND-2017); March 23–24, 2017; Editors: Swarniv Chandra and Manjistha Dutta; JIS University, Kolkata, India. Chapter 11; Page: 102–109; ISBN: 978-93-5288-918-1
18. Vipin K. Yadav, “Plasma Wave scenario in Comets”, Proceedings of URSI Asia-Pacific Radio Science Conference (URSI AP-RASC 2019), March 9-15, 2019; India Habitat Centre, Delhi; Page: 1-4; doi:10.23919/URSIAP-RASC.2019.8738542
19. Vipin K. Yadav, “Plasma Waves in and around the Moon”, Proceedings of 4th URSI Regional Conference on Radio Science (URSI RCRS 2020), February 12-14, 2020; IIT (BHU), Varanasi, India; Page: 1-4; doi:10.23919/URSIRCRS49211.2020.9113523
20. Vipin K. Yadav, “VIPER: A Plasma Wave Detection Instrument onboard Indian Venus Orbiter Spacecraft”, Proceedings of 5th URSI Regional Conference on Radio Science (URSI-RCRS 2022), December 1-4, 2022; IIT Indore, Madhya Pradesh, India; Page:505-508; doi:10.23919/URSI-RCRS56822.2022.10118507
21. Mehul Chakraborty, Vipin K. Yadav, Rajneesh Kumar, “Streaming Instability Generation in Lunar Plasma Environment”, Proceedings of 5th URSI Regional Conference on Radio

Science (URSI-RCRS 2022), December 1-4, 2022; IIT Indore, Madhya Pradesh, India; Page:509-512; doi:10.23919/URSI-RCRS56822.2022.10118524

22. Durgesh Tripathi, D. Chakrabarty, A. Nandi, B. Raghvendra Prasad, A.N. Ramaprakash, Nigar Shaji, K. Sankarasubramanian, R. Satheesh Thampi, V.K. Yadav, “The Aditya-L1 mission of ISRO”, The Era of Multi-Messenger Solar Physics, Proceedings IAU Symposium No. 372, 2022, Eds. G. Cauzzi & A. Tritschler, doi: 00.0000/X0000000000000000X (Accepted)

VSSC Central Level Report (03)

01. Design Document of the VIPER payload onboard Venus Orbiter Mission; Vipin K. Yadav; **ISRO-VSSC-DR-0615-0-21**; December 2021.

02. Design Document of the VIPER payload onboard Venus Orbiter Mission: Magnetometers; Vipin K. Yadav; **ISRO-VSSC-DR-0388-0-22**; May 2022.

03. Plasma Waves: Nature, Generation and Detection in Space; Vipin K. Yadav; **ISRO-VSSC-TR-0180-0-23**; February 2023.

Research Reports (05) Institute for Plasma Research (IPR), Gandhinagar, Gujarat

01. Vipin K. Yadav and D. Bora, “Ultrasoft x-ray emission from a linear ECR plasma source”, **IPR/RR-296/2003**, February 2003

02. Vipin K. Yadav and D. Bora, “Electron cyclotron resonance heating in a short cylindrical plasma system”, **IPR/RR-301/2003**, April 2003

03. Vipin K. Yadav and D. Bora, “Observation of parametric decay spectrum in a cylindrical ECR plasma system”, **IPR/RR-313/2003**, December 2003

04. Vipin K. Yadav, K. Sathyanarayana and D. Bora, “Electron Cyclotron Resonance breakdown studies in a linear plasma system”, **IPR/RR-317/2004**, March 2004

05. Vipin K. Yadav and D. Bora, “Electron Bernstein wave generation in a linear plasma system”, **IPR/RR-318/2004**, April 2004

Technical Reports (06) Indian Centre for Space Physics (ICSP), Kolkata, West Bengal

01. Vipin K. Yadav, “Coded Aperture Mask (CAM): A technique for imaging light sources”, **2006/CSP/XRL/01**, December 2006

02. Vipin K. Yadav, Anuj Nandi, S.K. Chakrabarti and RT-2/ICSP Teams, “Draft report on RT-2 collimator testing with X-ray beam at ICSP”, **2007/ICSP/RT-2/01**, November 2007

03. Vipin K. Yadav, S.K. Chakrabarti, S. Palit and A. Nandi, “A complete intermediate energy x-ray facility to perform astrophysical experiments”, **2008/ICSP/XRL/01**, October 2008

04. Vipin K. Yadav, S.K. Chakrabarti, ..., “Continuous X-Ray Imaging of Various sources from Moon Orbiter onboard Chandrayaan-2”, **2009/ICSP/XRL/03**, June 2009

05. S.K. Chakrabarti, A. Nandi, V. Yadav, D. Bhowmik, R. Sarkar, “X-ray & Gamma ray astronomy from the moon (revised)”, **2009/ICSP/XRL/01**, June 2009

06. R. Sarkar, S.K. Chakrabarti, A. Nandi, S. Palit, V.K. Yadav, “Development of the X-ray imaging facility in the laboratory”, **2009/ICSP/XRL/02**, September 2009

Technical Reports Space Physics Laboratory (SPL), VSSC, Thiruvananthapuram - 41

डॉ विपिन कुमार यादव

वैज्ञानिक/अभियंता एसएफ

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शोध क्षेत्र: प्लाज़्मा भौतिकी, अन्तरिक्ष प्लाज़्मा भौतिकी, प्लाज़्मा तरंगें, प्लाज़्मा नैदानिकी, प्लाज़्मा तरंग यंत्रीकरण, अन्तरिक्ष-बाध्य कण अनुवेदक, अन्तरिक्ष में विद्युत एवं चुम्बकीय क्षेत्र का मापन।

मुख्य वैज्ञानिक/ तकनीकी उत्तरदायित्व

1. मुख्य अन्वेषक; आदित्य-एल1 सौर अभियान पर अवस्थित प्रवाह-द्वार चुम्बकमापी
2. मुख्य अन्वेषक; शुक्र कक्षीय अभियान पर अवस्थित वाइपर (शुक्र आयनमंडलीय प्लाज़्मा तरंग अनुवेदक)
3. परियोजना प्रबन्धक (यान्त्रिकी); आदित्य-एल1 सौर अभियान पर अवस्थित पापा प्रदायभार
4. परियोजना प्रबन्धक (प्रदायभार अभिलक्षणन); चंद्रयान-2 लैंडर विक्रम पर अवस्थित रंभा प्रदायभार की लेंगमियर सलाई
5. परियोजना प्रबन्धक (पदार्थ प्रबंधन एवं उप-तंत्र विकास); चंद्रयान-2 कक्षीय पर अवस्थित चेज़-2 प्रदायभार; मई 2017 से अब तक
6. परियोजना प्रबन्धक (प्रदायभार विकास); चंद्रयान-2 कक्षीय पर अवस्थित चेज़-2 प्रदायभार; अप्रैल 2014 से मई 2017 तक।

पुरस्कार/सम्मान/पहचान/ उपलब्धि

जर्नल के लिए समीक्षाकार

1. एक्टा एस्ट्रोनौटिका, एल्सेविएर; एम्स्टर्डैम, नीदरलैंड्स.
2. अड्वान्सेज इन स्पेस रिसर्च, एल्सेविएर; एम्स्टर्डैम, नीदरलैंड्स.
3. इंडियन जर्नल ऑफ रेडियो & स्पेस फ्रिज़िक्स, भारत.
4. रिव्यूज़ ऑफ मॉडर्न प्लाज़्मा फ्रिज़िक्स, स्विट्ज़रलैंड.
5. आईईईई ट्रैज़ैक्शन्स ऑन प्लाज़्मा साइन्स, संयुक्त राज्य अमरीका.
6. फ्रिज़िक्स ऑफ प्लाज़्मास, संयुक्त राज्य अमरीका.
7. अर्थ, प्लैनेट्स एंड स्पेस, स्पिंगर, संयुक्त राज्य अमरीका.
8. एप्लाइड थर्मल इंजीनियरिंग, एल्सेविएर; एम्स्टर्डैम, नीदरलैंड्स.

वैज्ञानिक सत्रों में निर्णायक

1. पोस्टर सत्र "अन्तरिक्ष प्लाज़्मा"; 27वां प्लाज़्मा विज्ञान एवं प्रौद्योगिकी सम्मेलन (प्लाज़्मा 2012); दिसंबर 10-13, 2012; पुद्दुचेरी, भारत

2. विद्यार्थी पत्र प्रतियोगिता; प्रथम URSI रेडियो विज्ञान पर क्षेत्रीय संगोष्ठी (RCRS-2014); जनवरी 02 – 05, 2014; पुणे, भारत
3. पोस्टर सत्र “प्लाज़्मा प्रक्रम”; 29वां प्लाज़्मा विज्ञान एवं प्रौद्योगिकी सम्मेलन (प्लाज़्मा 2014); दिसंबर 08–11, 2014; कोट्टायम, केरल, भारत
4. पोस्टर सत्र “नाभिकीय संलयन”; 29वां प्लाज़्मा विज्ञान एवं प्रौद्योगिकी सम्मेलन (प्लाज़्मा 2014); दिसंबर 08–11, 2014; कोट्टायम, केरल, भारत
5. विद्यार्थी पत्र प्रतियोगिता; तृतीय URSI रेडियो विज्ञान पर क्षेत्रीय संगोष्ठी (RCRS-2017); मार्च 01–04, 2012; तिरुपति, भारत
6. पोस्टर सत्र “अन्तरिक्ष प्लाज़्मा”; 32वां प्लाज़्मा विज्ञान एवं प्रौद्योगिकी सम्मेलन (प्लाज़्मा 2017); नवंबर 07–10, 2012; गांधीनगर, गुजरात, भारत
7. मौखिक एवं पोस्टर प्रस्तुतियाँ; 4^{था} भारतीय ग्रहीय विज्ञान सम्मेलन (IPSC-2023); मार्च 22-24, 2023; भौतिक अनुसंधान प्रयोगशाला (PRL), अहमदाबाद, भारत.

व्यावसायिक प्रतिष्ठानों की सदस्यता

अंतर्राष्ट्रीय 7; राष्ट्रीय 18 (विस्तृत विवरण के लिए कृपया अँग्रेजी के भाग को देखें)

सम्मेलनों/संगोष्ठियों/कार्यशालाओं का आयोजन

5 (विस्तृत विवरण के लिए कृपया अँग्रेजी के भाग को देखें)

प्रकाशन

संपादित पुस्तकें - **01**

पुस्तकों में अध्याय - **02**

जरनल्स में वैज्ञानिक लेख - **26**

सम्मेलन लेख-संग्रह - **22**

VSSC केंद्र स्तरीय रिपोर्ट - **03**

अनुसंधान रिपोर्ट (IPR) - **05**

तकनीकी रिपोर्ट (ICSP) - **06**

SPL/VSSC तकनीकी रिपोर्ट - **41**

(विस्तृत विवरण के लिए कृपया अँग्रेजी के भाग को देखें)