

डॉ आर सतीश थंपी, एमएससी, बीएड, पीएचडी

Dr. R. SATHEESH THAMPI, M. Sc, B. Ed, Ph. D

वैज्ञानिक/अभियंता 'एसजी', प्रमुख, ग्रहीय विज्ञान शाखा

Scientist/Engineer 'SG', Head, Planetary Science Branch

अन्तरिक्ष भौतिकी प्रयोगशाला, विक्रम साराभाई अन्तरिक्ष केंद्र

Space Physics Laboratory, Vikram Sarabhai Space Centre

भारतीय अन्तरिक्ष अनुसंधान संस्थान (इसरो)

Indian Space Research Organization (ISRO)

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शोध क्षेत्र RESEARCH AREAS

- ❖ Condensed matter Physics – High T_c Superconductors – Characterization of YBCO, BSCCO, La-224, La-2125 and Hg based and doped superconductors.
- ❖ Plasma Physics – Tokamak Plasma Diagnostics – Langmuir Probes, Diamagnetic loop assembly.
- ❖ Submillimeter Astronomy – Study of Star forming regions - GMC's, and Dark clouds using radiative transfer modeling and high resolution heterodyne spectroscopy techniques.
- ❖ Planetary Science - Space Plasma Physics – solar wind and comparative planetology.

वर्तमान शोध क्षेत्र – ग्रहीय विज्ञान Current area of research – Planetary Science

- Study of Lunar plasma environment, Solar wind - Moon interaction, magnetic anomaly regions and space weathering on Moon.
- Study of Martian and Venus plasma environments - Escaping plasmas and its role on atmosphere/ionosphere
- Study of Solar wind-planetary body interaction using mass spectrometry techniques.
- Study of solar wind and its electron velocity distribution and composition.
- Development of space borne plasma analysers

शैक्षणिक योग्यताएँ Academic Qualifications

- Ph. D (Physics)– Saurashtra University, Rajkot, - 2001
- M.Sc (Physics)- Saurashtra University, Rajkot, - 1997
- B. Ed (Physical Sciences)– Annamali University, Chidambaram -1995
- B. Sc (Physics)– Madurai Kamaraj University, Madurai - 1992

शिक्षण अनुभव Teaching Experience

- One year as Adhoc Lecturer in Physics, Christ College, Rajkot

- One year as Higher Secondary Physics Teacher in S.N. Kansagara School, Rajkot.
- Three years as science teacher in Mount Sinai High School, Wokha, Nagaland.

व्यावसायिक पृष्ठभूमि Professional Background

- Junior Research Fellow (JRF) - DAE –BRNS - 1997-1998
- Senior Research Fellow (SRF) - DAE –BRNS- 1999-2000
- Post Doctorate Fellow (PDF)- Institute for Plasma Research (IPR) - 2001 -2002
- Scientist – SD – Physical Research Laboratory (PRL) – 2002-2007
- Scientist – SD – Space Physics Laboratory, VSSC – 2007-2010
- Scientist – SE - Space Physics Laboratory, VSSC – 2010 –2014
- Scientist – SF - Space Physics Laboratory, VSSC – 2014 – 2020
- Scientist – SG - Space Physics Laboratory, VSSC – 2021 – till date

परियोजनाएँ एवं कार्यक्रम Projects and Programs

- **Head-** Planetary Science Branch (**PSB**), Space Physics Laboratory (**SPL**), **VSSC (Feb. 2021 -)**
- **Deputy Head-** Planetary Science Branch (**PSB**), Space Physics Laboratory (**SPL**), **VSSC (April 2016 - Feb.2021)**
- **Principal Investigator (PI)** - Plasma Analyser Package for Aditya (**PAPA**) - Aditya-L1 Mission (**June 2013 -**)
- **Principal Investigator (PI)** - Venus Ionospheric and Solar Wind pArticle analySer (**VISWAS**) – **Venus Mission (June 2019 -)**
- **Principal Investigator (PI)** - Plasma analyseR for the Environment of Mars (**PREM**) – **Mars Orbiter Mission-2 (MOM-2) (June 2017 -)**
- **Project Manager (Calibration)** - Chandra’s Atmospheric Composition explorer (**CHACE-2**) - **Chandrayaan-2 (CH-2) mission (April 2014 -)**
- **Project Manager (Calibration)** – Mars Exospheric Neutral Composition Analyser (**MENCA**) –**Mars Orbiter Mission (MOM). (June 2011 -)**
- **Facility In-Charge** - High Vacuum Space Simulation Facility (**HVSSF**), **SPL (July 2012 -)**
- **Member** – Academic committee & Planning and Co-ordination Cell (**PCC**), **SPL (June 2013 -)**
- **Co-PI** of PLasma Energy eXplorer (**PLEX**) (**2010-2012**)
- **Principal Investigator (PI)** of Low Energy Ion Mass Analyser (**LEIMA**) – (2007-2009)
- **Co- Investigator (Co-I)** of submillimeter wave program of PRL (**2002-2007**)
- **Investigator of** Langmuir probe array for Steady State Tokamak-1 (**2001-2002**)
- **Investigator of** diamagnetic loop assembly for Steady State Tokamak-1 (**2001-2002**)

पुरस्कार एवं सम्मान Awards and Honors

- National students Merit Scholarship awarded during 1987-1989
- Awarded Junior Research Fellowship (JRF) and Senior Research Fellowship(SRF) by DAE-BRNS, BARC, Mumbai
- Best paper award (Co-author)- NSSS-2014

- Special Mention Prize for the MENCA experiment onboard Mars Orbiter Mission, in the contest for the innovative products/ideas in connection with the Innovation Day 2016 at Vikram Sarabhai Space Centre, Thiruvananthapuram.
- Travel Support from Committee on Space Research (COSPAR) to participate in 36th COSPAR scientific Assembly in Beijing, 2006.

प्रतिनियुक्ति / समनुदेशन Deputations/Assignments

- ❖ Visited Max-Planck-Institute for Astrophysics, Garching, GERMANY and attended the workshop on “*Modeling the structure, chemistry and appearance of proto planetary disks*” held during April 13-17, 2004 in **Ringberg Castle, Bavaria, Germany** and presented a paper on “**Sub-mm study of star forming regions and radiative transfer modeling – an approach**”.
- ❖ Visited Beijing Institute of Technology and attended the 36th COSPAR scientific assembly held at **Beijing, China** during 2006 and presented the work on “**Spectroscopic study of submillimeter lines from dark quiescent clouds**”.
- ❖ Capacity building workshop on **Lunar and Planetary Surface Science** at Harbin Institute of Technology, **Harbin, China** during 06–19 September, 2009
- ❖ One month hands on training on Space borne plasma analysers at **Mullard Space Science Laboratory (MSSL), United Kingdom (UK)** during April 8 – May 6, 2013

व्यावसायिक उत्तरदायित्व Professional Responsibilities

- **Member** - of LOC (Special session) “*International Conference on Microwave and Remote Sensing – ICMARS-2003*” **held** at Jodhpur.
- **Secretary** - “*International Conference on Submillimeter Science and Technology –ICSST 04*” held during October 13-15, 2004 at Physical Research Laboratory, Ahmedabad.
- **Member** - Local scientific advisory committee - ICSST 04, PRL, 2004
- **Editor** -ICSST 04 proceedings.
- **Member** - LOC- International Conference on Solar Cycle-24 (ICSC-24) held at Physical Research Laboratory.
- **Member** - Program & Planning Cell (PPC)- SPL-VSSC
- **Co-convener** - PS5 Session - National Space Science Symposium - NSSS 2014
- **Member**-LOC, National Conference on Atomic and Molecular Physics (NCAMP), during 9-12 December 2014 at IIST, Thiruvananthapuram.
- **Reviewer** - Acta Astronautica (Elsevier)
- **Member** - Aditya-L1 mission Working Group
- **Member** – Payload review committee –IIST, Thiruvananthapuram
- ❖ **Convener** - PS5 Session of NSSS-2016
- ❖ Subcommittee **Member** - Local Organising Committee (LOC)- NSSS-2016
- ❖ **Chairman**- Sub-committee, SPL day lecture, 17th March, 2017
- ❖ **Member** -Organizing committee, Structured Training Programme (STP-2017); SPL, VSSC, March 13-17, 2017.
- ❖ Subcommittee **member** - Space-Expo content generation team and coordinator for SPL poster session in the SPACE-EXPO-2017 at S.T. Hindu College, Nagercoil during 5-8 October 2017.

- ❖ **Convener-** “Terrestrial Gamma-ray Flashes (TGFs)” associated with lightning submitted by College of Engineering Trivandrum (CET), held on 12th January 2018
- ❖ **Co-chair-** “PS5 Theme: Comets, Meteorites and Analogues”; 20thNational Space Science Symposium (NSSS–2019); January 29 – 31, 2019; SPPU, Pune, Maharashtra.
- ❖ **Chairman** - Sub-committee; SPL Golden Jubilee Celebrations; April 8-9, 2019.
- ❖ **Convener** - One-day Brainstorming Meeting on “Planetary Sciences: Current Trends & Future Perspectives”, 19th August 2019 at SPL, VSSC.

प्रयोगशाला उत्तरदायित्व Laboratory Responsibilities

- ❖ Member of the SPL Academic Committee (AC)
- ❖ Member of SPL Technical Evaluation Committee (TEC),
- ❖ Member of Internal Review Committee (IRC) of SPL
- ❖ Member of Doctoral Committee (DC) of SPL
- ❖ Member of Laboratory Council (LC) of SPL
- ❖ Member, Space allocation committee of SPL
- ❖ Member Area Level Committee to evaluate the need for contractual work force of SPL.
- ❖ Member Scientific and Technical Committee (STC) of SPL
- ❖ Member Science Working Group (SWG) of Aditya-L1 mission
- ❖ Member, Science Facility review committee, ISRO-HQ
- ❖ Member, Subcommittee for data CLASS payload data release of CH2 Mission
- ❖ Member, Divisional safety Committee of SPL

प्रकाशन Publications

- Eighteen in refereed Journals
- Four in refereed Conference proceedings
- Fifteen in Conference proceedings
- Fifteen technical reports

आमंत्रित व्याख्यान/भाषण एवं सम्मेलन प्रस्तुतियाँ Invited talks/Lectures and Conference Presentations

- ❖ Sixteen invited talks
- ❖ Thirty conference presentations
- ❖ Lectures - JRF's, IITP and for College students

शोध अधिवीक्षण Research Supervision

- Ph. D students – One (undergoing)
- M.Phil projects – Two
- M.Sc projects - Four
- M.Tech - Four

व्यावसायिक संघों की सदस्यता Membership in professional bodies

- Member of Astronomical Society of India (ASI)

- COSPAR associate
- Indian Science Congress Association (ISCA)
- Indian Space Scientists Association (ISSA)
- Indian Society of Systems for Science and Engineering (ISSE)

अभिज्ञात शोध अधिवीक्षक Recognized Research guide

- ✓ University of Kerala, Thiruvananthapuram
- ✓ University of Calicut
- ✓ CUSAT, Cochin

इसरो-डॉस खेल-कूद प्रतियोगिता में भागीदारी Participation in ISRO-DOS sports/games events

- Inter centre ISRO-DOS outdoor games – 2004, Ahmedabad- Volley ball, Ball badminton
- Inter centre ISRO-DOS outdoor games – 2008, Thiruvananthapuram - Volley ball.
- Inter centre ISRO-DOS indoor games - 2010, Ahmedabad - Shot-put, Discuss throw.
- Inter centre ISRO-DOS indoor games - 2012, SHAR - Volley ball
- Inter centre ISRO-DOS outdoor games – 2013, NRSC-Hyderabad- basket ball.
- Inter centre ISRO-DOS indoor games - 2015, SCL, Chandigarh - Volley ball
- Inter centre ISRO-DOS indoor games - 2017, SAC, Ahmadabad - Volley ball.

पुनरावलोकित जर्नल में प्रकाशन Publications in Refereed Journals:

1. **R.S. Thampi**, S. Rayaprol, Krushna Mavani, D.G. Kuberkar, M.R. Gonal, RamPrasad and R. G. Kulkarni., “Effect of Sr- substitution on the restitution of superconductivity in Pr-substituted at rare earth and Ba-site in $\text{EuBa}_2\text{Cu}_3\text{O}_z$.” *Physica C*, 355 (2001) 23-30
2. D.G. Kuberkar, **R.S. Thampi**, Nikesh A. Shah, S. Rayaprol, S.K. Malik, Y.B. Yelon and R. G. Kulkarni., “Structural and superconducting properties of $\text{La}_{2-x}\text{R}_x\text{Ba}_2\text{Ca}_y\text{Cu}_{4+y}\text{O}_z$ (R= Nd, Gd, $y=2x$)”., *Journal of Appl. Physics.No.11, Vol.89. (2001)*
3. D.G. Kuberkar, Nikesh A. Shah, **R. S. Thampi**, M.R. Gonal, RamPrasad and R.G. Kulkarni., “Dependence of superconductivity on hole concentration (P_{sh}) in La-2125 perovskite system”., *Physica B 281 & 282(2000) 924-925.*
4. D.G. Kuberkar, Nikesh A. Shah, **R.S. Thampi**, S. Rayaprol, M.R. Gonal, RamPrasad and R. G. Kulkarni., “Effect of hole filling by Co and hole doping by Ca on the superconductivity of $\text{GdBa}_2\text{Cu}_3\text{O}_{7-\delta}$ ”., *International Journal of Inorganic Materials 3,1, 59 (2001).*
5. S. Rayaprol, Krushna Mavani, D.S. Rana, C.M. Thakker, **R.S. Thampi**, D.G. Kuberkar, R.G. Kulkarni and S.K. Malik., “Structural Investigations of La-2125 Mixed Oxide Superconducting System”., *Journal of Superconductivity: Incorporating Novel Magnetism, Vol.15, No.3, June 2002*
6. **R.S. Thampi** and Laurent Pagani., “Spectroscopic study of ‘CO’ and its isotopic mm/submillimeter lines from dark cloud Lynds 183”., *Journal of Astronomy and Astrophysics, 31, 31-41 (2010)*
7. G. Manju, R. Sridharan, P. Sreelatha, Sudha Ravindran, M.K. Madhav Haridas, Tarun K. Pant, P. Pradeep Kumar, **R. Satheesh Thampi**, Neha Naik, N. Mridula, Lijo Jose, S.G. Sumod., “A Novel probe for in-situ Electron density and Neutral Wind (ENWi) measurements in the near Earth space”., *Journal of Atmospheric and Solar-Terrestrial Physics 74 (2012) 81–86*

8. S. Barabash, A. Bhardwaj, M. Wieser, R. Sridharan, T. Kurian, S. Varier, E. Vijayakumar, V. Abhirami, K. V. Raghavendra, S. V. Mohankumar, M. B. Dhanya, **R.S. Thampi**, K. Asamura, H. Andersson, Y. Futaana, M. Holmstrom, R. Lundin, J. Svensson, S. Karlsson, R. D. Piazza and P. Wurz., "Investigation of the solar wind - Moon interaction onboard Chandrayaan-1 mission with the SARA Experiment" ., *Current Science* (2009), 96, 526-34
9. M. B. Dhanya, A. Bhardwaj, Y. Futaana, S. Fatemi, M. Holmström, S. Barabash, M. Wieser, P. Wurz, A. Alok, **R. S. Thampi**., "Proton entry into the near-lunar plasma wake for magnetic field aligned flow" ., *Geophysical Research Letters*, 40, 1-5 (2013), doi:10.1002/grl.50617.
10. Anil Bhardwaj, S.V. Mohankumar, Tirtha Pratim Das, Smitha V. Thampi, P. Pradeepkumar, P. Sreelatha, Sundar, Amarnath Nandi, Dinakar Prasad Vajja, M.B. Dhanya, Neha Naik, G. Supriya, **R. Satheesh Thampi**, G. Padma Padmanabhan, Vipin K. Yadav, and A.V. Aliyas; "MENCA onboard the Indian Mars Orbiter Mission" , *Physics Education*, October 2015.
11. Anil Bhardwaj, S. V. Mohankumar, Tirtha Pratim Das, P. Pradeepkumar, P. Sreelatha, B. Sundar, Amarnath Nandi, Dinakar Prasad Vajja, M. B. Dhanya, Neha Naik, G. Supriya, **R. Satheesh Thampi**, G. Padma Padmanabhan, Vipin K. Yadav and A. V. Aliyas., "MENCA experiment aboard India's Mars Orbiter Mission" ., *Current Science*, Vol.109, No.6, 1106 25 September 2015.
12. Bhardwaj, A., S. V. Thampi, T. P. Das, M. B. Dhanya, N. Naik, D. P. Vajja, P. Pradeepkumar, P. Sreelatha, G. Supriya, J. K. Abhishek, S. V. Mohankumar, **R. S. Thampi**, V. K. Yadav, B. Sundar, A. Nandi, G. P. Padmanabhan, and A. V. Aliyas (2016), "On the evening time exosphere of Mars: Result from MENCA aboard Mars Orbiter Mission", *Geophysical Research Letters*, 43 (5), 1862-1867, <http://dx.doi.org/10.1002/2016GL067707>.
13. Bhardwaj, A., S. V. Thampi, T. P. Das, M. B. Dhanya, N. Naik, D. P. Vajja, P. Pradeepkumar, P. Sreelatha, J. K. Abhishek, **R. S. Thampi**, V. K. Yadav, B. Sundar, A. Nandi, G. P. Padmanabhan and A.V. Aliyas (2017), Observation of Suprathermal Argon in the Exosphere of Mars, *Geophysical Research Letters*, 44, 2088 2095; <https://doi.org/10.1002/2016GL072001>.
14. Janardhan, P., S. Vadawale, B. Bapat, K. P. Subramanian, D. Chakrabarty, P. Kumar, A. Sarkar, N. Srivastava, **R. S. Thampi**, V. K. Yadav, M. B. Dhanya, G. G. Nampoothiri, J. K. Abhishek, A. Bhardwaj, and K. Subhalakshmi (2017), Probing the heliosphere using in situ payloads onboard Aditya-1, *Current Science*, 113 (4), 620-624. <https://doi.org/10.18520/cs/v113/i04/620-624>
15. Das, T. P., S. V. Thampi, M. B. Dhanya, N. Naik, P. Sreelatha, P. Pradeepkumar, G. P. Padmanabhan., B. Sundar, D. P. Vajja, A. Nandi, **R. S. Thampi**, V. K. Yadav, J. K. Abhishek, Md. Nazeer, P. T. Lali, R. John, A. V. Aliyas, V. K. Sen, M. Ramprabhu, A. A. Krishna "Chandra's Atmospheric Composition Explorer-2 (CHACE-2) aboard Chandrayaan-2 to study the lunar neutral exosphere" (2020); *Current Science*, 118 (2), 202-209, DOI:10.18520/cs/v118/i2/202-209.
16. Manju, G., T. K. Pant, P. Sreelatha, S. J. Nalluveetil, P. P. Kumar, N. K. Upadhyay, Md. M. Hossain, N. Naik, V. K. Yadav, R. John, R. Sajeev, J. Ramalingam, P. George, A. Nandi, N. Mridula, R. P. Aswathy., J. J. Rana, S. Srivastava and **S. Thampi** "Lunar near surface plasma environment from Chandrayaan-2 Lander platform: RAMBHA-LP payload" (2020), *Current Science*, 118 (3), 383-391; DOI:10.18520/cs/v118/i3/383-391.
17. Manju, G., T. K. Pant, N. Mridula, R. P. Aswathy, P. Sreelatha, R. John, **R. S. Thampi**, A. N. Aneesh, J. K. Abhishek., "In-situ observations of rocket burn induced modulations of the top side ionosphere using the IDEA payload on-board the unique orbiting experimental platform (PS4) of the Indian Polar Orbiting

Satellite Launch Vehicle mission.”, (2020), Journal of Atmospheric and Solar–Terrestrial Physics, 199, 105203, DOI:10.1016/j. Jastp.2020.105203.

18. C. Krishnaprasad, Smitha V. Thampi, Anil Bhardwaj, Tarun K. Pant, **R. Satheesh Thampi.**, “Ionospheric plasma energization at Mars during the September 2017 ICME event” ., *Planetary and Space Science*, 2021.

जर्नल के मुखपृष्ठ एवंमुख्य-आकर्षण Cover page of Journals & Highlights

1. Nature India Research Highlight: The paper “Proton entry into the near-lunar plasma wake formagnetic field aligned flow”, published in Geophysical Research Letters (2013) made Research Highlightof Nature India with the title “Tracing Sun’s Protons Near Moon”, Published online on 23 July 2013; doi:10.1038/nindia.2013.99.
2. ISRO Story of the Week: The paper “On the evening time exosphere of Mars: Result from MENCAaboard Mars Orbiter Mission” published in Geophysical Research Letters (2016) made the Story of weekin ISRO website on 02 May 2016.

लोकप्रिय लेख Popular Articles

- Bhardwaj A., S.V. Mohankumar, T. P. Das, S. V. Thampi, P. Pradeepkumar, P. Sreelatha, SundarB., A. Nandi, D. P. Vajja, M. B. Dhanya, N. Naik, G. Supriya, **R. S. Thampi**, G. P. Padmanabhan, V. K. Yadav, and A.V. Aliyas, MENCA onboard the Indian Mars Orbiter Mission, Physics Education, Vol. 31, no. 3, July-Sept, 2015.
- Beyond Earth – A new world – A planetary science perspective”, **R. S. Thampi.**, Count down; March 2018.

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