

FACULTY PROFILE



Name: Dr. Kalpana Patel

Designation: Associate Professor

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➤ **Work Experience:** 13 Years 6 months

➤ **Professional Qualification:**

Degree	Institute/University	Specialization	Year ofPassing
Ph.D.	Banaras Hindu University.	Atmospheric Physics	2009
M.Sc.	UdaiPratap Autonomous College	Physics	2004
B.Sc.	Shri Agrasen Kanya Autonomous P.G.College	PCM	2002

➤ **Research Interest:**

- VHF scintillation
- Ionospheric Irregularities
- Plasma Bubbles
- Modelling, Simulations
- Coronal Mass Ejections
- GPS TEC

➤ **Publications (Journals & Conferences):**

1. **Total electron content (TEC) forecasting with neural networks during intense geomagnetic storms of the solar maximum and moderate years of solar cycle 24 in the low latitude Indian region.** Sunil Kumar Chaurasiya, **Kalpana Patel**, Abhay Kumar Singh, Astrophysics & Space science, 368 (79), (2023). <https://doi.org/10.1007/s10509-023-04237-8>
2. **Analysis of GPS-TEC and IRI model over equatorial and EIA stations during solar cycle 24.** Sunil Kumar Chaurasiya, **Kalpana Patel**, Sanjay Kumar, Abhay Kumar Singh, Advances in Space Research, 2023, <https://doi.org/10.1016/j.asr.2023.09.014> .
3. **Ionospheric Response of St. Patrick's Day Geomagnetic storm over Indian low latitude regions,** Sunil Kumar Chaurasiya, **Kalpana Patel**, Sanjay Kumar, Abhay Kumar Singh, Astrophysics and Space Science,

367, 103 (2022). <https://doi.org/10.1007/s10509-022-04137-3>.

4. **Equatorial plasma bubbles for solar maximum & moderate year of the solar cycle 24**, Sunil Kumar Chaurasiya, **Kalpna Patel**, Abhay Kumar Singh, *Advances in Space Research*, doi.org/10.1016/j.asr.2022.07.036, ISBN no. 0273-1177, November, 2022.
5. **Consequences of Pre and Post Confinement on the Atmospheric Air Pollutants during spread of Covid-19 in India**, **Kalpna Patel** and A. K. Singh, *Indian Journal of Physics*, <https://doi.org/10.1007/s12648-022-02380-6>, 2 June 2022, ISSN No. 0973-1458, Vol. 96 (6) pp 1613-1624.
6. **Changes in the atmospheric parameters due to annular solar eclipse of June 21, 2020, over India**, **Kalpna Patel** and A. K. Singh, *Indian Journal of Physics*, doi.org/10.1007/s12648-021-02112-2, May 2021. ISSN No. 0973-1458, pp 1-12.
7. **Statistical Study of Solar Activity Parameters of Solar Cycle 24**, Abha Singh and **Kalpna Patel**, *Journal of Scientific Research, BHU*, Volume 65, Issue 1, ISSN NO. 0447-9483, doi: 10.37398/JSR.2021.650125,197-200, Jan. 2021.
8. **Causes Responsible for the Intense and Severe Storms during the Declining Phase of the Solar Cycle 24**, **Kalpna Patel**, Abha Singh, S. B. Singh and A. K. Singh, *J. Astrophys. Astr.*(2019) 40:4, ISSN No.: 02506335, E-ISSN o. -09737758, pp 1-9, Jan. 2019.
9. **Effect of Geomagnetic Storms on VHF Scintillations observed at Low Latitude**, Ref.: No. JOAA- D- 17-00179R1, S. B. Singh, **K. Patel**, A.K. Singh, *J. of Astrophysics and Astronomy*, Apr. 2018, ISSN No.: 02506335, 39:36, doi.org/10.1007/s12036-018-9529-2, E-ISSN No. -09737758, pp: 1- 10 .
10. **E-learning: a step to develop teaching in applied science-physics**, **Kalpna Patel**, Ekta Pandey *International Journal of Research and Analytical Reviews*, Volume 5, Special Issue, April 2018, E-ISSN 2348 –1269, Print ISSN 2349-5138.
11. **TEC variation over an equatorial and anomaly crest region in India during 2012 and 2013”** , Sanjay Kumar, **Kalpna Patel**, Abhay Kumar Singh., doi 10.1007/s10291-015- 0470-4, *GPS Solu*.Volume 20, Issue 4, pp 617–626 June 2015, ISSN No. : 1080 5370.
12. **Modeling of Ionospheric Scintillation at Low-Latitude”**, **Kalpna Patel**, Ashutosh K. Singh, P. Subrahmanyam and A. K. Singh., doi:10.1016/j.asr.2010.09.017, *J. Adv. Space Res.*, 47, 515-524, 2011. ISSN: 0273-117.
13. **Simultaneous Observation of VLF and VHF waves in the presence of ionospheric irregularities”**, R. P. Patel, **Kalpna Patel**, A.K. Singh and R.P. Singh, *J. Ind. Geophys. Union.*, 14, 2, 139-148, 2010, ISSN No. : 09719707.
14. **Modeling of VHF Scintillation Observed at Low Latitude”**, S. B. Singh, **Kalpna Patel**, R. P. Patel, A. K. Singh and R. P. Singh, *Journal of Physics CS, IOP Pub.*, (208), 012065, 2010,ISSN No.: 17426588.
15. **Observation and Modeling of Quasi-Periodic Scintillations Observed at Low Latitude”**, **Kalpna Patel**, A. K. Singh and R. P. Singh, *Journal of Physics CS, IOP Pub.*, (208), 012064,2010. ISSN No.: 17426588.
16. **Characteristic of Plasma Bubbles observed by DMSP in the topside Ionosphere during the year 2005”**, **Kalpna Patel** and A. K. Singh, *J. Earth System Sciences*, Springer Pub.,119, 2, 211– 220, 2010,ISSN No. : 02534126.
17. **Long Trends of VLF Whistlers and Daytime VHF Scintillation at Low Latitude Ground Station Varanasi”**, A. K. Singh, R. P. Patel, **Kalpna Patel**, R .P. Singh, *Scientific Results of CAWSES-India, (Phase-I)*, 277-286, 2009.
18. **Characteristics of Low Latitude Ionospheric E- region Irregularities Linked with Daytime VHF Scintillations measured from Varanasi”**, **Kalpna Patel**, A. K. Singh,R. P. Patel, and R. P. Singh, *J. Earth System Sciences*, 118, 6, 721-732, 2009. ISSN No. : 02534126.
19. **Characteristics of Quasi-Periodic Scintillations Observed at Low Latitude”**, **Kalpna Patel**, Ashutosh K. Singh, A. K. Singh, and R. P. Singh, 44, RS 6007,doi: 10.1029/ 2008RS003975, *Radio Science*, AGU Pub. USA, 2009, ISSNNo. : 0048-6604.
20. **Ionospheric scintillations by Sporadic-E region Irregularities over Low Latitude”**, **Kalpna Patel**, A. K.

Singh, R. P. Patel and R. P. Singh, *Bull. Astro. Soc. India.*, 35, 625- 630, 2007. ISSN No. : 0304-9523.

➤ **Patent published and granted:**

1. Patent Published: Pop-out & Sink-in Holographic Augmented Reality and Virtual Reality Device for use without 3D glasses for simultaneous viewing by multiple persons

➤ **Books and Books Chapters:**

1. Remote sensing of Ionospheric Irregularities”, Kalpana Patel, Atmospheric Remote Sensing, Elsevier, Jan. 2023 (SCI)

➤ **Awards and Achievements**

1. Second prize in the International conference on **Global Initiatives in Applied Sciences and Green Technologies GIAGT-2016**, held at SRM University in collaboration with Scientific and Education Research Society, MEERUT (SERS) during 09-11 Sept.,2016.

2. Best Oral Presentation award in the **1st One Day Conference on NEW TRENDS IN RESEARCH** at Banaras Hindu University in Varanasi on 27th Oct. 2007.

➤ **Workshops/Seminars/FDPs**

1. Paper presented on “Analysis of Total Electron Content(TEC) variations over Low latitude Indian regions during a low sunspot year of solar cycle 24” in 9th International Multidisciplinary Conference on Current Research Trends- 2023 held through International Institute of Knowledge and Research (IIKR), from 25/08/2023 to 26/08/2023.

2. Paper presented on “Comparison of the Air Quality within the Northern Region of India both during and after Lockdown.” in 8th International Multidisciplinary Conference on Current Research Trends- 2023 held through International Institute of Knowledge and Research (IIKR), from 21/04/2023 to 22/04/2023.

3. Paper presented on “Morphology of Equatorial Plasma Bubbles during the descending phase of solar cycle 24.” in International Conference on Joint Modernistic and Innovative Technology IC- JMIT 2022 held at Seth Jai Prakash Mukund Lal Institute of Engineering and Technology, Radaur, Haryana from 25/03/2022 to 26/03/2022.

4. Paper presented on “Effect of Geomagnetic Storms on Vertical total Electron content over Low latitude station Varanasi” in National Space Science Symposium-NSS-2022 held at IISER, Kolkatta from 31/01/2022 to 04/02/2022.

5. Paper presented on “Climatological Study Of Equatorial Plasma Bubble for Solar Moderate Year of The Solar Cycle 24” in Plasma Science Society of India- PSSI-2021 held at BIT Mesra, Jaipur Campus. from 13/12/2021 to 15/12/2021.

6. 5-day online FDP on the theme "Inculcating Universal Human Values in Technical Education" organized by All India Council for Technical Education(AICTE) from 19 July, 2021 to 23 July, 2021.
7. AICTE Training And Learning (ATAL) Academy Online FDP on "Global Navigation Satellite System (GNSS)" from 2020-12-18 to 2020-12-22 at National Institute of Technology Mizoram. **Activity:**
8. AICTE- Training And Learning (ATAL) Academy Online FDP on "Photonics" from 2020-11-23 to 2020-11-27 at THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY.
9. Paper Presented on "Sources of Ionospheric holes and its effect, An Examination", in National Conference on Frontiers of Science, Technology & Management NCFSTM-2020" at Seth Jai Prakash Mukund Lal Institute of Engg. and Technology, Haryana held on 23/01/2020
10. Paper presented on "Two Dimensional Transition Metal Disulfide for Hydrogen Production" in a National Conference on "Innovative Approaches Towards Sustainable Development (NCIATSD-2020)" at Department of Physics, K.N. Govt. P.G. College, Gyanpur, Bhadohi held on January 09- 10, 2020
11. Paper presented on "CHARACTERISTICS OF EQUATORIAL PLASMA BUBBLES OVER INDIAN REGION DURING 2018" in the National Conference PLASMA-2018 "The 33rd National Symposium on Plasma Science & Technology" organized by University of Delhi from 4-7, December, 2018.
12. "ERUDITIA" Two weeks Faculty Development Program, held at SRM IST (formerly known as SRM University), June 2018.
13. Faculty Development Program on Entrepreneurship (Two Weeks); held at SRM IST (formerly known as SRM University) during 14-28 June 2017,
14. National Workshop on Advance Techniques in Mathematics, Physics and Computer Science held at SRM University, Delhi-NCR Campus, Modinagar during 18-20 February, 2016
15. One week Faculty Development Program on "Contemporary Trends in Research and Teaching Methodologies for Professional Development", held at SRM IST, Delhi-NCR Campus, Modinagar, during 04-10-July, 2016.
16. Paper presented on "*GNSS-based remote sensing of ionospheric plasma bubbles during deep solar minimum 2007-2009*" in the International conference on Global Initiatives in Applied Sciences and Green Technologies GIAGT-2016, held at SRM University in collaboration with SERS during 09-11 Sept.,2016
17. Paper presented on "Characteristics of equatorial plasma bubble observed from C/NOF over the Indian region during 2014" in the International conference on Global Initiatives in Applied Sciences and Green Technologies GIAGT-2016, held at SRM University in collaboration with SERS during 09-11 Sept.,2016.

18. Paper presented on “A New Scientific Approach on the Study of vibrational Properties of Rubidium Chloride (RCl), E058A” in the National Conference on Vistas of Scientific Approach for Welfare of Society, 2016, held at KNPG college Gyanpur, Bhadohi on 30- 31 March 2016.

19. Paper presented on “Changes in the total electron Content in Lucknow and Bangalore during the year 2012” in A Conference on Advance Techniques and Devices in Mathematics & Physical Sciences (An International Meet)”, held at SRM University, Delhi-NCR Campus, Modinagar, on Jan. 23rd- 25th 2015.

20. Faculty Development Program on “Teaching Ethics”, held at SRM University, Delhi-NCR Campus, Modinagar, on 24th January 2014.

21. Faculty Development Program on “Paradigm Shift on Pedagogy & EIM”, held at SRM University, Delhi-NCR Campus, Modinagar, on 8th and 9th Feb. 2012.

22. Paper presented on “Recent trends in Space Physics, Atmospheric Physics and Astrophysics” ,held in the Department of Physics, Banaras Hindu University, Varanasi-221005 (INDIA), on March 12th -17th, 2012.

23. Paper presented on “Characteristic of Plasma Bubbles observed by DMSP in the topside Ionosphere during the year 2005”, in the PLASMA-09 to be held at National Institute of Technology, Hamirpur in Himachal Pradesh, from 8th Dec. to 11th Dec. 2009

24. Paper presented on “Observation and Modeling of Quasi-Periodic Scintillations Observed at Low Latitude” and “Modeling of VHF Scintillation Observed at Low Latitude” in PIASMA-08, at Bhabha Atomic Research Center (BARC) in Mumbai, from 10th to 13th Dec., 2008.

25. Paper presented on “Behavior of the Ionospheric E-region Irregularities at Low Latitude” in the 1st One Day Conference on NEW TRENDS IN RESEARCH at Banaras Hindu University in Varanasi on 27th Oct. 2007.

26. Paper presented on “Ionospheric Scintillation Induced by Sporadic-e Irregularities over Low Latitude” in IInd UN/NASA Workshop on International Heliophysical Year and Basic Space Science, at Indian Institute of Astrophysics (IIA) in Bangalore from 27th Nov. to 1st Dec. 2006.

27. Paper presented on “Study of Ionospheric Irregularities over Low Latitudes”, in 36th COSPAR ASSEMBLY at Beijing, China from 16th July to 23rd July 2006.

28. Paper presented on “Daytime Scintillations Induced by Sporadic-E region Irregularities” in National Space Science Symposium (NSSS-2006) in Andhra University, Vishakhapatnam from 8th Feb. to 12th Feb. 2006.

➤ **Work experience: 13 Years 6 months**

❖ **Teaching at Under Graduate Level: (13 Years 6 months)**

- Worked as a HEAD INCHARGE- PHYSICS from **03/06/2018 till 30/09/2022** at SRM University, Modinagar, -INDIA
- Assistant Professor **25th Aug. 2011- till date** (Now working as a Head In-charge of Physics Department) Applied Science – Physics, at SRM University, Modinagar, -INDIA Assistant Professor
- Assistant Professor March 2010—July 2011. Applied Science – Physics, at IILM-CET, Academy of Higher Learning, Greater, Noida, U.P, INDIA.

➤ **Professional Memberships:**

1. PLASMA SCIENCE SOCIETY OF INDIA- LIFE MEMBERSHIP (LM-1525).
2. INDIAN PHYSICS ASSOCIATION- LIFE MEMBER (GEN/LM/13554)
3. SOUTH ASIAN METEOROLOGICAL ASSOCIATION-LIFE MEMBER (SAMA-LM-IND-93)
4. ASTRONOMICAL SOCIETY OF INDIA-LIFE MEMBER (L-2404)
5. INDIAN ASSOCIATION OF PHYSICS TEACHERS-LIFE MEMBER (14138 L9095)