

Dr. Ruchita Shah

Department of Physics
School of Technology
Pandit Deendayal Energy University
Raisan, Gandhinagar-382007
Gujarat, India.
Google Scholar: AkfBpUYAAAAJ
Scopus ID: 57209363723
ORCID iD: 0000-0003-3372-8017
E-Mail: ruchita.sphd16@sot.pdpu.ac.in
ruchitapshah05@gmail.com
Mobile: +91-9426254001

Present position:

At present, I am associated as a Visiting Faculty in Department of Physics, School of Technology (SOT) and Department of Science, School of Liberal Science (SLS), Pandit Deendayal Energy University (PDEU) (formely known as Pandit Deendayal Petroleum University (PDPU)).

About research work:

I pursued my Ph.D. in the field of Atmospheric Science from Department of Physics, SOT, PDEU under the able guidance of Dr. Rohit Srivastava, Associate Professor, SOT, PDEU. During Ph.D. course work, I achieved CPI 9.15 in the papers namely Environmental Geochemistry, Modeling & Simulation in Atmospheric Sciences, Atmospheric & Environmental Physics and Research Methodology. My thesis entitled "Investigation of cloud microphysical properties over India and adjoining oceanic regions" aims to analyze the effect of rising temperature/sea surface temperature on climate variables at fine scale over land/oceanic regions of India. Research focuses to understand variation in cloud properties along with cloud formation processes to improve uncertainty in rainfall patterns at regional level. It also helped to examine changes in cloud properties during dry and wet climate, which is required as India has high dependency of monsoon. Such study may help to improve weather conditions and climate change scenarios.

Research area of interest:

Cloud microphysics, modeling climatic variables, cloud formation processes, regional climate variability, upper level ocean-surface interaction, surface-atmosphere interaction and monsoon dynamics.

Work Experience/Skills:

Visiting Faculty at SOT and SLS, PDEU (Jan, 2021–present)

- Opted for lecture as well as lab sessions of elective subject 'Fundamentals of Atmospheric Science' for the students of BA/BBA (Hons.) (Semester-I).
- Also, course subject 'Physics' opted for the students of B.Tech (Semester-II).

Visiting Faculty at SLS, PDEU (Aug, 2021–Dec, 2021)

- Opted for lecture as well as lab sessions of 'Science in Everyday Life' subject for the students of BA/BBA (Hons.) (Semester-I).

Teaching assistant at SLS, PDEU (Jul, 2016–Mar, 2020)

- Calibration of instruments, set up of newly designed experiments, explanation of experiments with concepts, preparation of lab manuals and viva-voce questions for
 1. BA/BBA (Hons.) students of Semester-I in the subject of Science in Everyday Life.
 2. B.Sc. (Hons.) students of Semester-I to VIII in the subjects of University Physics-I, University Physics-II, Nuclear Physics, Electricity & Magnetism and Material Science.

Project Intern at GERMI, PDEU (13th Jan–10th Jun, 2015)

- Final semester of M.Sc. ends with dissertation on "Optimization and fabrication of Organic-Inorganic heterojunction solar cell" from Solar Research Wing, Gujarat Energy Research and Management Institute (GERMI), PDEU.
- To design, develop and fabricate Organic – Inorganic Heterojunction Solar Cell in which the layer of p – type was optimized by using surface profilometer and optical spectroscopy. Additional layer of hole transporting layer was deposited on the junction to increase the stability of solar cell. The power conversion efficiency of the solar cell is found to be 0.1%. This dissertation was submitted under the guidance of
 1. Dr. Sasmita Nayak, Scientific Officer, Institute of Minerals and Materials Technology (IMMT), Bhubaneswar, India.
 2. Dr. Satyam Shinde, Assistant Professor, PDEU, Gujarat, India.
 3. Dr. Omkar Jani, Principal Research Scientist, GERMI, Gujarat, India.

Computational Experience

- **Operating Systems:** Linux and Windows

- **Scientific Softwares:** Mathematica, Origin, Sigma-Plot, Grads and Coral Draw
- **Simulation Models:** Regional Climate Model, OPAC and SBDART
- **Referencing Softwares:** Google Scholar, Mendeley and End Note
- **Programming Languages:** C, C++ and Matlab

Education:

2016-2021: Ph. D. (Physics), Department of Physics, School of Technology, PDEU, Gujarat, India.

2013-2015: M. Sc. (Physics), Department of Science, School of Technology, PDEU, Gujarat, India.

2010-2013: B. Sc. (Physics, Chemistry and Mathematics), Department of Physics & Electronics, St. Xavier's College, Gujarat, India.

Achievements:

Award/Honor

- **Best oral presentation award** at 'The 3rd International Conference on Natural Science and Applied Mathematics', Czech Technical University, Prague, June 15-18, 2018.
- **Best paper award** at 'The 2nd International conference on Chemical Industry', PDEU, August 30-31, 2017.

Publications (in peer-reviewed journals)

- **Ruchita Shah**, Rohit Srivastava and Jigisha Patel (2021), "Study of regional heterogeneity of cloud properties during different rainfall scenarios over monsoon-dominated region", *Journal of Water and Climate Change*, IWA Publication, 12(4), 1086–1106, doi: 10.2166/wcc.2020.178. **(Impact factor: 1.25)**.
- **Ruchita Shah** and Rohit Srivastava (2020), "Effect of ocean warming on cloud properties over adjoining oceanic regions of India", *Pure and Applied Geophysics*, Springer, 177(12), 5911-5925, doi: 10.1007/s00024-020-02607-9 **(Impact factor: 1.65)**.

- **Ruchita Shah** and Rohit Srivastava (2019), “Effect of climate change on cloud properties over Arabian Sea and central India”, *Pure and Applied Geophysics*, Springer, 176(1), 2729–2738, doi: 10.1007/s00024-019-02125-3 (**Impact factor: 1.65**).
- **Ruchita Shah**, Rohit Srivastava and R. Srivastava (2018), “Evaluation of RegCM 4.4 to get Cloud and Monsoon Features with seasons over India”, *International Journal of Environmental Science and Development*, 9(10), doi: 10.18178/ijesd.2018.9.10.1118.
- **Ruchita Shah** and Rohit Srivastava (2017), “Effect of Global warming on Indian Agriculture”, *Sustainability in Environment*, 2(4), 366 – 378, doi: 10.22158/se.v2n4p366.

Publications (in peer-reviewed conference proceedings)

- **Ruchita Shah**, Rohit Srivastava and Jigisha Patel (2020), “Modelling the influence of different rainfall scenarios over heterogeneous regions using regional climate model”, International Conference on Contemporary Computing and Applications (IC3A), IEEE Proceedings, pp. 59-64, doi: 10.1109/IC3A48958.2020.233672.
- Rohit Srivastava and **Ruchita Shah** (2019), "Study of Monsoonal Features Using Regional Climate Model over Heterogeneous Monsoon Dominated Region", E3S Web of Conferences, 101, article number 03004, doi: [10.1051/e3sconf/201910103004](https://doi.org/10.1051/e3sconf/201910103004) (**Scopus indexed, Impact factor: 0.52**).

Abstracts/Papers presented in National/International conferences

- Jigisha Patel*, Rohit Srivastava and **Ruchita Shah** presented a paper titled “Impact of lockdown on cloud properties over Indian land region” in National Symposium on Remote Sensing for Environment Monitoring & Climate Change Assessment: Opportunities and Challenges (ISRS-ISG-NS 2020) during December 18-19, 2020 organized by Indian Society of Remote Sensing (ISRS) and Indian Society of Geomatics (ISG).
- Rohit Srivastava and **Ruchita Shah*** presented a paper entitled “Geographical dependence of cloud process over India: A comparative study between coastal and inland region” in International Virtual Conference on "EARTH'S CHANGING

CLIMATE: Past, Present & Future" during October 15-17, 2020 organized by the Society of Earth Scientists.

- Vishva Upadhyay*, Kuldeep Ajoliya*, **Ruchita Shah** and Rohit Srivastava presented a paper entitled "A comparative study of aerosol optical properties over southern and eastern regions of India" in International conference on Climate Change 2020: Adaptation and Mitigation practices with Local and Global Level innovations (ICCC-2020) during February 28-29, 2020 at Sankalchand Patel University, Visnagar, Gujarat.
- Rohit Srivastava* and **Ruchita Shah** presented a paper entitled "Study of monsoonal features using regional climate model over heterogeneous monsoon dominated region" in 10th International Conference on Environmental Science and Development (ICESD 2019) during February 13-15, 2019 at Politecnico di Milano University, Milan, Italy.
- **Ruchita Shah*** and Rohit Srivastava presented a paper entitled "Role of outgoing longwave radiation on cloud fraction over India" in Indian Aerosol Science and Technology Association (IASTA-2018) during November 26–28, 2018 at IIT Delhi.
- Kushal Shah*, Rohit Srivastava and **Ruchita Shah** presented a poster presentation on "Chemistry of atmospheric gaseous pollutants: A case study over Delhi" during February 21–23, 2018 at ChemCYS – 2018 in Blankenberge, Belgium.
- **Ruchita Shah*** and Rohit Srivastava presented a paper entitled "Effect of climate change in cloud properties over Indian region" at the International Tropical Meteorology Symposium (INTROMET – 2017) during November 7–10, 2017 organized by Space Application Centre (SAC), Ahmedabad.
- Kushal Shah*, **Ruchita Shah** and Rohit Srivastava presented a poster presentation on "Chemistry of pollutants: A case study of smog over various parts of India" in National conference on 'Recent advances and future trends in chemical technology – 2017' during 16th September, 2017 at Nirma University, Ahmedabad.
- Kushal Shah*, **Ruchita Shah** and Rohit Srivastava presented a poster presentation on "Analytical study of smog over Delhi" in 'International Conference on Chemical Industry – 2017' during August 30-31, 2017 at Pandit Deendayal Energy University, Gandhinagar, Gujarat.
- **Ruchita Shah***, Rohit Srivastava and R. Srivastava presented a poster presentation on "Study of cloud microphysical properties over central India" in 19th National Space Science Symposium during February 09-12, 2016 held at Vikram Sarabhai Science Centre, Thiruvananthapuram.

- **Ruchita Shah*** and Rohit Srivastava presented a paper entitled “Effect of climate change on health” in Climate Change in Indian Perspective organized by SOT, PDEU and Gujarat Energy Research and Management Institute (GERMI) on December 23, 2015.
- **Ruchita Shah** presented a paper entitled “Nuclear Energy in Indian Perspective: Issues and Challenges” in 3rd National Seminar on Interdisciplinary Approaches to Knowledge during August 20 -21, 2015 organized by SLS, PDEU.
- **Ruchita Shah*** and Rohit Srivastava presented a paper entitled “Internet: An important tool for rural advancement” in 2nd National Seminar on Interdisciplinary Approaches to Knowledge during April 03-04, 2014 organized by SLS, PDEU.

Organized Short Term Training Program (STTP)

- Contributed as an Organizing member in one week STTP on “Instrumental Methods of Chemical Analysis” from May 29 to June 2, 2017 at PDEU.
- Participated and volunteered in one week STTP on “Computational Methods for Interdisciplinary Research” on May 1-5, 2017 at PDEU.

Workshops/Conferences participated

- Participated in International Online Lecture Series on Atmospheric Science titled “Goddard Multi-Scale Modelling Systems with Unified Physics for Precipitation Study” delivered by Dr. Wei-Kuo Tao, Senior Research Scientist at NASA/Goddard Space Flight Center, Maryland, USA on February 03, 2021 organized by Department of Atmospheric Science, School of Earth Sciences, Central University of Rajasthan, India.
- Contributed in “Effective Scientific Writing and Strategies of Research Papers Publications in High Impact Journals” organized by Pandit Deendayal Energy University, Gandhinagar on November 25, 2020.
- Successfully completed the module titled “How to design effective figures for review articles” organized by Researcher Academy of Elsevier on October 29, 2020.
- Participated in “Effective Scientific Writing and Strategies of Research Papers Publications in High Impact Journals” organized by Pandit Deendayal Energy University, Gandhinagar on September 19, 2020.
- Participated in one day webinar on “Challenges Involved in Simulating Complex Systems” organized by Birla Institute of Technology, Mesra, Ranchi on July 25, 2020.

- Attended fourth webinar series on “Climate Change and COVID-19” organized by Ministry of Environment, Forest and Climate Change, Climate Change Department and GEDA on July 24, 2020.
- Participated in the National Webinar on Energy and Environment jointly organized by Applied Physics Department, Faculty of Technology and Engineering, the Maharaja Sayajirao University of Baroda (MSUB), Gujarat Science Academy (GSA), Indian Physics Association (IPA) Baroda Chapter and Indian Association of Physics Teachers (IAPT-RC7) in association with National Academy of Sciences, India (NASI) Ahmedabad Chapter held during July 09 – 10, 2020.
- Attended five days training program “Satellite Meteorology and Oceanography Research and Training (SMART)” on ‘Basics of Satellite Meteorology’ during April 16 – 20, 2018 at SAC, Ahmedabad.
- Participated in the two-day training programme on “Honing Research Publication Skills” organized by the Academic Development and Research (ADR) cell, Nirma University, Ahmedabad during October 07-08, 2016.
- Attended a two day seminar on “Climate Actions” organized at PDEU during July 29-30, 2016.