A R Aswini
Research Associate
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Research Area: Aerosol chemical characterization, physico-chemical properties of aerosols, source apportionment, impacts of meteorology on aerosol composition, carbonaceous aerosols.

Academic Qualification

Degree	Year	Details
• Ph.D.	2021	Physics, Thesis Title: "Characterisation of carbonaceous aerosols in distinct geographical environments over the Indian region", Cochin University of Science & Technology, Cochin, India. Thesis advisors: Dr. Prabha R Nair, Dr. Prashant Hegde
• M. Sc.	2013	Physics (Astrophysics), School of Pure & Applied Physics, Mahatma Gandhi University, Kottayam, Kerala, India
• B. Sc.	2011	Physics, Mar Ivanios College, Trivandrum, Kerala University, Kerala, India

Professional Background

Designation	Duration	Institution
• Research Associate-1	Apr 2021– Present	Space Physics Laboratory, VSSC, ISRO, India
• Research Scholar	Sep 2014 – Aug 2019	Space Physics Laboratory, VSSC, ISRO, India

Conferences/Symposia/Workshops

- Participated in the innovative and creative science education programme organised by Science Facilitation centre, Department of Physics, Mar Ivanios college in collaboration with the Directorate of Public instruction, Kerala state during 2010-2011.
- Workshop on 'Solar Physics' conducted jointly by IUCAA, Pune and IIST, Trivandrum from Nov 29-Dec 1, 2012.
- Workshop on 'Fourier Transforms in Astrophysics' organized by Mahatma Gandhi University, Kottayam and IUCAA-Resource centre-CUSAT, Kochi during 13th-15th February 2013.
- Workshop on 'Astronomy Research: Opportunities and Challenges organized by IUCAA, Pune at Macfast, Thiruvalla from August 12-14, 2013.
- IUCAA workshop on Variable Sources in Astronomy from 22nd to 24th January 2014 at

MACFAST, Thiruvalla.

- Project on 'Glitch Statistics of Radio Pulsars' was carried out at NCRA-TIFR Pune, Maharashtra from June-August 2013. The project was presented at the IUCAA workshop on 'Astronomy Research: Opportunities and Challenges' held at Macfast, Thiruvalla in August 2013.
- Participated in National Conference on Analytical Science and Technology (ANASAT 2015) at Munnar from September 24 -26, 2015 and presented poster on "Measurement of water soluble organic carbon in atmospheric aerosols using Total Organic Carbon analyzer."
- Presented a paper on "Seasonality and source characteristics of carbonaceous species in aerosols of the tropical environment of Coimbatore" at National Space Science Symbosium (NSSS -2016) organised by VSSC from February 9-12, 2016.
- Attended the winter school on "Atmospheric Aerosol Physics, Measurements, and Sampling Techniques" at IIT Madras during February 15-19, 2016.
- Participated and presented poster on "Carbonaceous and inorganic aerosols over a sub-urban site in peninsular India: temporal variability and source characteristics" at IASTA-2016 conference held by PRL from December 6-8, 2016.
- Participated and presented poster on "Carbonaceous and inorganic aerosols over a sub-urban site in peninsular India: temporal variability and source characteristics" at UPCAR-2017 at Tirupathi held by NARL and SV University from June 26-28,2017.
- Participated and presented poster on "Characteristics of carbonaceous aerosols over a tropical coastal location in southern peninsular India" at IASTA-2018, organised by Centre for Atmospheric Sciences, IIT Delhi from 26-28 November, 2018.
- Presented a paper on "Chemical composition of atmospheric aerosols over the surrounding residential area of an urban centre"at Indian International Conference on Air Quality Management (IICAQM-2018), organised by IIT Chennai and University of Surrey, UK from 6-7 December, 2018.

Publications – *<11>*

1. **Aswini, A.R.**, Hegde, P., Nair, P.R. (2018). Carbonaceous and inorganic aerosols over a sub-urban site in peninsular India: Temporal variability and source characteristics. Atmospheric Research, 199, 40-53. doi.org/10.1016/j.atmosres.2017.09.005
2. **Aswini, A.R.**, Hegde, P., Nair, P.R., Aryasree, S. (2019). Seasonal changes in carbonaceous aerosols over a tropical coastal location in response to meteorological processes. Science of the Total Environment, 656, 1261–1279. doi.org/10.1016/j.scitotenv.2018.11.366
3. **Aswini, A.R.**, Hegde, P., Aryasree, S., Girach, I.A., Nair, P.R. (2020). Continental outflow of anthropogenic aerosols over Arabian Sea and Indian Ocean during wintertime: ICARB-2018 campaign. Science of the Total Environment, 712, 135214. doi.org/10.1016/j.scitotenv.2019.135214
4. **Aswini, A.R.**, Hegde, P. (2021). Impact assessment of continental and marine air-mass on size-resolved aerosol chemical composition over coastal atmosphere: Significant organic

contribution in coarse mode fraction. Atmospheric Research, 148, 105216. doi.org/10.1016/j.atmosres.2020.105216

5. Arun, B.S., **Aswini, A.R**., Gogoi, M.M., Hegde, P., Kompalli, S.K., Sharma, P., S Babu, S.S. (2019). Physico-chemical and optical properties of aerosols at a background site (~ 4 km a.s.l.) in the western Himalayas. Atmospheric Environment, 218, 117017. doi.org/10.1016/j.atmosenv.2019.117017
6. Hegde, P., Vyas, B.M., **Aswini, A.R**., Aryasree, S., Nair, P.R. (2020). Carbonaceous and water-soluble inorganic aerosols over a semi-arid location in north west India: Seasonal variations and source characteristics. Journal of Arid Environments, 172, 104018. doi.org/10.1016/j.jaridenv.2019.104018
7. Boreddy, S. K. R., Hegde, P., **Aswini, A.R.,** Girach, I.A., Koushik, N., Nalini K. (2020). Impact of ice-free oases on particulate matter over the East Antarctic: inferences from the carbonaceous, water-soluble species and trace metals. Polar Science. doi.org/10.1016/j.polar.2020.100520.
8. Boreddy, S. K. R., Hegde, P., **Aswini, A.R.** (2020). Geochemical characteristics of trace elements in size-resolved coastal urban aerosols associated with distinct air masses over tropical peninsular India: Size distributions and source apportionment. Science of the Total Environment, 142967. doi.org/10.1016/j.scitotenv.2020.142967
9. Boreddy, S. K. R., Hegde, P., **Aswini, A. R.** (2021). Chemical Characteristics, Size Distributions, and Aerosol Liquid Water in Size-Resolved Coastal Urban Aerosols Allied with Distinct Air Masses over Tropical Peninsular India. ACS Earth Space Chem. doi.org/10.1021/acsearthspacechem.0c00282
10. Boreddy, S. K. R., Hegde, P., **Aswini, A. R.,** Williams, M. A., Elavarasi, R., Lakshmi Kumar, T. V. (2021). Seasonal variations in characteristics, sources and diurnal patterns of carbonaceous and water-soluble constituents in urban aerosols from the east coast of tropical India. Environ. Chem. doi.org/10.1071/EN21017
11. Ezhilkumar, M. R., Karthikeyan, S., **Aswini, A. R.,** Hegde, P. (2021). Seasonal and vertical characteristics of particulate and elemental concentrations along diverse street canyons in south India. Environmental Science and Pollution Research (Accepted).

Awards/Honors/Recognitions/Acclamations

- Best paper award for "Chemical composition of atmospheric aerosols over the surrounding residential area of an urban centre" in technical session "Air Quality monitoring & characterisation" at Indian International Conference on Air Quality Management (IICAQM-2018), organised by IIT Chennai and University of Surrey, UK from 6-7 December, 2018.

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ईमेल : aswini_ar[at]vssc[dot]gov[dot]in

अनुसंधान क्षेत्र

एरोसोल रासायनिक लक्षण वर्णन, एरोसोल के भौतिक–रासायनिक गुण, स्रोत विभाजन, एरोसोल संरचना पर मौसम विज्ञान के प्रभाव, कार्बोनेसियस एरोसोल।

शैक्षणिक योग्यता

डिग्री	वर्ष	विवरण
• पी एचडी	2021	भौतिक विज्ञान; शोधग्रंथ का शीर्षक: “भारतीय क्षेत्र में विशिष्ट भौगोलिक वातावरण में कार्बनयुक्त एरोसोल की विशेषता”; कोचीन विज्ञान और प्रौद्योगिकी विश्वविद्यालय (CUSAT), कोच्चि, भारत; पी एचडी सलाहकार: डॉ. प्रभा आर नायर; डॉ प्रशांत हेगड़े
• एम एससी	2013	भौतिक विज्ञान (खगोल भौतिकी), स्कूल ऑफ प्योर एंड एप्लाइड फिजिक्स, महात्मा गांधी विश्वविद्यालय, कोट्टायम, केरल, भारत
• बी एससी	2012	भौतिक विज्ञान, मार इवानियोस कॉलेज, त्रिवेंद्रम, केरल विश्वविद्यालय, केरल, भारत

प्रोफ़ेशनल बैकग्राउंड

पद	समयांतराल	संस्थान
• शोध सहयोगी 1	अप्रैल 2021– वर्तमान	अंतरिक्ष भौतिकी प्रयोगशाला, वीएसएससी, इसरो, भारत
• रिसर्च स्कॉलर	सितंबर 2014 – अगस्त 2019	अंतरिक्ष भौतिकी प्रयोगशाला, वीएसएससी, इसरो, भारत

सम्मेलन/ कार्यशालाएं/सेमिनार/प्रस्तुतिकरण

- Participated in the innovative and creative science education programme organised by Science Facilitation centre, Department of Physics, Mar Ivanios college in collaboration with the Directorate of Public instruction, Kerala state during 2010-2011.
- Workshop on 'Solar Physics' conducted jointly by IUCAA, Pune and IIST, Trivandrum from Nov 29-Dec 1, 2012.
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Allied with Distinct Air Masses over Tropical Peninsular India. ACS Earth Space Chem. doi.org/10.1021/acsearthspacechem.0c00282

10. Boreddy, S. K. R., Hegde, P., **Aswini, A. R.,** Williams, M. A., Elavarasi, R., Lakshmi Kumar, T. V. (2021). Seasonal variations in characteristics, sources and diurnal patterns of carbonaceous and water-soluble constituents in urban aerosols from the east coast of tropical India. Environ. Chem. doi.org/10.1071/EN21017
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पुरस्कार/सम्मान/स्वीकरन/अभिनंदन

- IIT चेन्नई और विश्वविद्यालय सरे (यूके) द्वारा आयोजित वायु गुणवत्ता प्रबंधन पर भारतीय अंतर्राष्ट्रीय सम्मेलन (IICAQM 2018, 6–7 दिसंबर, 2018 तक) में तकनीकी सत्र ″वायु गुणवत्ता निगरानी और लक्षण वर्णन″ में ″शहरी केंद्र के आसपास के आवासीय क्षेत्र में वायुमंडलीय एरोसोल की रासायनिक संरचना″ के लिए सर्वश्रेष्ठ पेपर पुरस्कार ।