



## Department of Freshman Engineering

### Faculty Profile

**Name** : Dr. Palla Vinay Kumar  
**Designation** : Associate Professor (Physics)  
**Qualification** : M.Sc., Ph.D.  
**Total Experience** : 10 years  
**JNTUH ID** : 9008-180207-111339  
**AICTE ID** : 1-4246419814  
**E-Mail** : [vinaypalla@gmail.com](mailto:vinaypalla@gmail.com)  
[drvinaypalla@gmail.com](mailto:drvinaypalla@gmail.com)  
**Linked In** :  
**YouTube Channel** :



### Publications:

#### LIST OF PUBLICATIONS IN SCIENCE CITATION INDEXED (SCI) JOURNALS

1. “Seasonal effects of atmospheric waves over tropical tropopause using radiosonde observations at Hyderabad, India”, Salauddin Mohammad, Gopa Dutta, M.C. Ajay Kumar, P.V. Rao, **P. Vinay Kumar**, Krishna Ete, *Meteorology and Atmospheric Physics*, 134:83, 2022.
2. “Seasonal variations of inertia gravity waves over Hyderabad (17.4° N, 78.5° E), a tropical station using radiosonde measurements”, Salauddin Mohammad, Gopa Dutta, P. Venkateswara Rao, M.C. Ajay Kumar, **P. Vinay Kumar**, Krishna Ete, *Journal of Atmospheric and Solar-Terrestrial Physics*, 219, 105641, 2021.
3. “Retrieving characteristics of IGW parameters with least uncertainties using hodograph method”, Gopa Dutta, **P. Vinay Kumar**, and Salauddin Mohammad, *Atmos. Chem. Phys.*, doi:10.5194/acp-17-14811-2017 (*Copernicus Publications*), 2017.

4. **“Climatology of diurnal tide and its long-term variability over a tropical station”**, P. Vinay Kumar, Gopa Dutta, Salauddin Mohammad, and B. Venkateswara Rao. *Theoretical and Applied Climatology* doi: 10.1007/s00704-016-1871-1 (Springer Publication) 2017.
5. **“Impacts of cyclone Nilam on lower atmospheric dynamics”**, P. Vinay Kumar, Gopa Dutta, M.V. Ratnam, E. Krishna B. Bapiraju, B. Venkateswara Rao and Saluddin Mohammad. *Advances in Atmospheric Sciences* 33(8), pp 955-968, 2016.
6. **“Equatorial wave activity during 2007 over Gadanki, a tropical station”**, S. Mohammad, G. Dutta, B. Venkateswara Rao and P. Vinay Kumar, *Journal of Earth System Science* 124 (4), 897–908, 2015.
7. **“Quasi-two-day wave in the lower atmosphere over Hyderabad during summer of 2009”**, G. Dutta, S. Mohammad, M. Satyakumar, Y. K. Reddy, P. Vinay Kumar, P. V. Rao, and M. C. Ajay Kumar, *Annales Geophysicae*, 30, pp 57-66, 2012.
8. **“Response of tropical lower atmosphere to annular solar eclipse of 15 January”**, Gopa Dutta, P. Vinay Kumar, M. Venkat Ratnam, Salauddin Mohammad, M. C. Ajay Kumar, P. V. Rao, K. Rahaman, and H. Aleem Basha, *J. Atmos. Solar Terr. Phys.* Vol. 73, pp 1907–1914, 2011.
9. **“Characteristics of high frequency gravity waves generated by tropical deep convection: Case studies”**, Gopa Dutta, P. Vinay Kumar, M.C. Ajay Kumar, M. V. Ratnam, M. Chandrashekar, Y. Shibagaki, Salauddin. Mohammad and H. Aleem Basha, *J. Geophys. Res.*, 114, D18109, doi: 10.1029/2008JD011332 (USA), 2009.
10. **“High resolution observation of turbulence in the troposphere and lower stratosphere over Gadanki”**, Gopa Dutta, M. C. Ajay Kumar, P. V. Rao, B. Bapiraju, P. Vinay Kumar, and H. Aleem Basha, *Annales Geophysicae* 27, pp 2407-2415, 2009.
11. **“Long-term mean vertical velocity measured by MST radar at Gadanki (13.5° N, 79.2° E)”**, P. V. Rao, P. Vinay Kumar, M. C. Ajay Kumar, and Gopa Dutta, *Annales Geophysicae*, 27, 451-459, 2009.
12. **“Seasonal variation of short-period (<2 h) gravity wave activity over Gadanki, India (13.5° N, 79.2° E)”**, Gopa Dutta, T. Tsuda, P. Vinay Kumar, M.C. Ajay Kumar, Simon. P. Alexander, and Toshiaki Kozu, *J. Geophys., Res.*, 113, D14103, doi: 10.1029/2007JD009178, 2008.
13. **“On the optimum radar beam angle to minimize statistical estimation error of momentum flux using conjugate beam technique”**, Gopa Dutta, P. Vinay Kumar, P. V. Rao, M. C. Ajay Kumar, K. S. Mukarram, V. Harshavardhan and P. B. Rao, *Geophys. Res. Lett.* (USA), Vol.34, L22802, doi: 10.1029/2007GL030652, 2007.
14. **“On the optimum time of integration for estimation of momentum flux from VHF radar data”**, Gopa Dutta, P. V. Rao, M. C. Ajay Kumar, P. Vinay Kumar, H. Aleem Basha, V. K. Anandan and A. K. Ghosh, *Geophys. Res. Lett.* (USA), L15811, 10.1029/2005GLO23777, 2005.

#### LIST OF PUBLICATIONS IN NON-SCI/ SCOPUS INDEXED JOURNALS

15. **“Quantitative Assessment of Air Pollution over Hyderabad using Principal Component Analysis: before, during and after the COVID–19 Lockdown”**, P. Vinay Kumar, M. C. Ajay Kumar and P. V. Rao, *Dogo Rangsang Research Journal*, 13 (3), 2023.
16. **“Assessment of Pollutants and its Influence of Outflow on the Downstream of Musi River, Hyderabad”**, M.C. Ajay Kumar, P. Vinay Kumar and D. Ugandhar, *Dogo Rangsang Research Journal*, 13 (1), 2023.
17. **“Prediction of PM<sub>2.5</sub> Over Hyderabad Using Deep Learning Technique”**, P. Vinay Kumar, M. C. Ajay Kumar, B. Anil Kumar and P. Venkateswara Rao, *Nature Environment and Pollution Technology*, Vol. 21, Issue 2, 2022, 691-696.
18. **“Madden – Julian oscillations over a tropical Indian station using radar and ERA data of winds”**, Salauddin Mohammad, Gopa Dutta, P. Vinay Kumar, E Krishna, M. C. Ajay Kumar, P. V. Rao, and B. V. Rao, *Indian Journal of Radio and Space Physics*, Vol.43, pp 48-56, 2014.
19. **“Temporal Variations of PM<sub>2.5</sub> and PM<sub>10</sub> concentration over Hyderabad”**, MC Ajay Kumar, P. Vinay Kumar, P. Venkateswara Rao, *An International Quarterly Scientific Journal- Nature Environmental and Pollution Technology*, 2020, Vol 19, No. 5, pp. 1871-1878, e-ISSN: 2395-3454. (Scopus Indexed).
20. **“Effect of lockdown on air pollutants during COVID -19 over Hyderabad”**, Venkateswara Rao P., MC Ajay Kumar, P. Vinay Kumar, *Indian Journal of Science and Technology*, 2020, pp. 3339 – 3348, e- ISSN: 0974-5645. (Web of Science).
21. **“Changes in PM<sub>10</sub>, NO<sub>x</sub> and SO<sub>2</sub> concentrations during COVID-19 lockdown over Hyderabad”**, P. Vinay Kumar, M.C. Ajay Kumar, and P. Venkateswara Rao, *Science and Engineering Journal*, 2020, vol. 24, Issue 8, pp. 366 – 374, ISSN NO. 0103-944X. (UGC care listed).
22. **“Spatiotemporal variation of air pollution during COVID-19 lockdown over Andhra Pradesh, India”**, MC Ajay Kumar, P. Vinay Kumar, P Venkateswara Rao, *Indian Journal of Natural Sciences*, 2020, Vol. 11, Issue 63, pp. 28601 – 28610, ISSN: 0976 – 0997. (Web of Science).
23. **“The Influence of NO<sub>2</sub> and Meteorological Parameters on the Variations of Ground Level Ozone Concentration over the Urban Coastal Site Visakhapatnam, India”**, P. Venkateswara Rao, P. Vinay Kumar, M.C. Ajay Kumar, *HTL Journal*, Vol. 26, Issue 10, 1091-1100, 2020.
24. **“Effect of lockdown on air pollutants during COVID – 19 over Hyderabad”**, P. Venkateswara Rao, M. C. Ajay Kumar, and P. Vinay Kumar, *Indian Journal of Science and Technology*, Vol.13, Issue 32,3339-3348, 2020.

### LIST OF PUBLICATIONS IN CONFERENCE PROCEEDINGS

25. **“Ozone and the Climate: Study of ozone in the stratosphere and troposphere”**, Gopa Dutta, **P. Vinay Kumar**, K. Krishna Mohan, and P. V. Rao, *Proceedings of the third national conference on Applied Physics and Material Science*, pp 180-182, 2015.
26. **“Cyclonic effects on lower atmospheric dynamics over Hyderabad”**, **P. Vinay Kumar**, B. Venkateswara Rao, and Gopa Dutta, *Proceedings of the third national conference on Applied Physics and Material Science*, pp 176-179, 2015.
27. **“Seasonal Variations of Tidal Oscillations over Gadanki”**, **P. Vinay Kumar**, P. V. Rao, M.C. Ajay Kumar, and Gopa Dutta, *Proceedings of the National Symposium on Current trends in Atmospheric Research including Communication And Navigation aspects (CARCAN-2012)*, pp 88-93, 2013.
28. **“Study of Madden Julian Waves using Radiosonde Data”**, Ayub Khan, Salauddin Mohammad, P. V. Rao, and **P. Vinay Kumar**, *Proceedings of the National Symposium on Current trends in Atmospheric Research including Communication And Navigation aspects (CARCAN-2012)*, pp 55-62, 2013.
29. **“Wave activities and turbulence influencing Stratosphere Troposphere Exchange (STE) of ozone over Costa Rica during 2016”**, Gopa Dutta, Salauddin Mohammad, **P. Vinay Kumar**, KVN Janardhan, SV Rao, *42nd COSPAR Scientific Assembly*, 42, pp. C2. 2-54-18, 2018

### OTHER PUBLICATIONS

30. **“Diurnal tide in the troposphere and lower stratosphere over Hyderabad, a tropical station”**, Salauddin Mohammad, **P. Vinay Kumar**, P. V. Rao, M. Satyakumar, Y. K. Reddy and Gopa Dutta, *Technology Spectrum*, JNTUH, Vol. 5 (2), 2011.

### BOOKS PUBLISHED

1. **Textbook of Engineering Physics**, 1st Edition, Dr. N. Rakesh Chandra, Dr. M. C. Ajay Kumar, **Dr. P. Vinay Kumar**, Dr. P. Venkateswara Rao, Scientific International Publishing House, 2023, ISBN: 9789357573313.

## **Participation in Workshops / Conferences:**

1. **“International Conference on Emerging Trends in Commerce, Management, Languages, Science and Technology”** held in Aurora’s Degree & P.G College during 25<sup>th</sup> & 26<sup>th</sup> November 2022 and presented a paper on **“Temporal assessment of air pollutants using Principal Component Analysis over Hyderabad”**.
2. **“6<sup>th</sup> National conference on “Applied Physics and Materials science (APMS-2019)”**, presented a paper on **“Study of Stratosphere Troposphere Exchange (STE) of ozone over Costa Rica during 2016”**, 28-12-2019, Vasavi College of Engineering, Hyderabad.
3. Attended and Presented a Paper title **“Mechanisms influence Stratosphere Troposphere Exchange (STE) of ozone over Costa Rica during 2016”** in the **“20<sup>th</sup> National Space Science Symposium (NSSS)”**, 2019, held at Savitribai Phule Pune University Pune, Maharashtra, India.
4. Workshop on **“Fundamentals of GNSS/IRNSS and application to atmospheric sciences”** organized by National MST Radar Facility, Department of Space, Government of India, Gadanki, India, during 26 February 2016.
5. **“19<sup>th</sup> National Space Science Symposium (NSSS-2016)”** held at Space Physics Laboratory, Vikram Sarabhai Space Center, Trivandrum, India, during 9-12 February 2016.
6. National conference on **“Recent Developments in Mathematical Sciences and their Applications to Science and Technology”**, XXIV congress of Andhra Pradesh society for Mathematical sciences organized by Vignana Bharathi Institute of Technology, Hyderabad, India, during 11-13 December 2015.
7. **“3<sup>rd</sup> Two-day National Conference on applied physics and materials science (APMS-2015)”** held at Vasavi college of Engineering, Hyderabad, India, during 7-8 August 2015.
8. **“18<sup>th</sup> National Space Science Symposium (NSSS-2014)”** held at Dibrugarh University, Dibrugarh, Assam, India, during 29 January-1 February 2014.
9. National symposium on **“Current trends in Atmospheric Research including Communication And Navigational aspects (CARCAN-2012)”**, Vignana Bharathi Institute of Technology, Hyderabad, India, during 21-22 December 2012.

10. **“13th International workshop on technical and scientific aspects of MST radar (MST13)”** organized by Institute of Atmospheric Physics, Kuhlungsborn, **Germany**, during 19-23 March 2012.
11. Participated in **“AP Science congress 2008”** jointly organized by AP Akademi of Sciences and Osmania University, Hyderabad, India, during 14-16 November 2008.
12. **“International workshop on Weather modification technologies & symposium on natural disaster management (ICORG-Geoinformatics event)”**, Jawaharlal Nehru Technological University, Hyderabad, **India**, during 27-28 June 2008.
13. **“15th National Space Science Symposium (NSSS-2008)”** held at Radio Astronomy Center, NCRA-TIFR, Udhagamandalam (Ooty), India, during 26-29 February 2008.
14. Silver Jubilee National conference on **“Global Navigation Satellite System and its applications (GNSS-2007)”** organized by Research and Training Unit for Navigational Electronics, Osmania University, Hyderabad, India, during 25-26 October 2007.
15. **“11th International workshop on technical and scientific aspects of MST radar (MST11)”** organized by National MST Radar Facility, Department of Space, Government of India, Gadanki/Tirupati, **India**, during 11-15 December 2006.
16. Participated in **“Pre MST-11 discussion meeting”** held at National Atmospheric Research Laboratory, Department of Space, Government of India, Gadanki, India, during 7-8 November 2006.
17. Participated in **“Convection campaign Experiments”** that are being conducted at National Atmospheric Research Laboratory, Department of Space, Gadanki, India, during 29th May and 26th June 2006.
18. **“Eight Users Scientist’s workshop”** held at National Atmospheric Research Laboratory, Department of Space, Government of India, Gadanki, India, during 20-21 June 2006.
19. Attended Lecture series: **“Earth’s Atmosphere as we know”** held at University of Hyderabad, Hyderabad, India, during 25-26 February 2006.
20. **“14th National Space Science Symposium (NSSS-2006)”** held at Andhra University, Vishakhapatnam, India, during 9-12 February 2006.
21. **“GPS Occultation workshop”** held at National MST Radar Facility, Department of Space, Government of India, Gadanki, **India**, during 19-21 April 2005.

22. Workshop on **Radar Interferometry and Imaging (WRII)** held at NMRF, Gadanki, **India**, during 24-25 January 2005.
23. **“Seventh Users Scientist’s workshop”** jointly organized by National MST Radar Facility, Department of Space, Government of India, Gadanki and S.V. University, Tirupati, India, during 5-7 July 2004.

### **Faculty development programs and Webinars attended:**

1. Participated in One Week Online FDP on **“Engineering Physics and Materials Science”**, organized by Department of Physics, Chaitanya Bharathi Institute of Technology, from 03-08-2020 to 07-08-2020.
2. Attended a one-week National Level Online Faculty Development Program on **"Online Teaching-Learning Processes using ICT Tools for Education 4.0"** organized by Department of Information Technology, SVP CET Nagpur, in association with Computer Society of India from 8th to 13th June, 2020.
3. Attended One Week Online FDP on **“Materials: Recent Trends & Engineering Applications”** during 02 - 07 June 2020 organized by Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad.
4. Attended one-week Online Faculty Development Programme **“The Use of Virtual Physics Labs - Creating Next Generation Teachers”** from 20-24, May 2020 organized by Department of Freshman Engineering, Geethanjali College of Engineering and Technology in association with Indian Society for Technical Education (ISTE).
5. Participated in the webinar on **“Nano Composite Ion-Conducting Solid Polymer Electrolyte Materials”** conducted on 10-06-2020, organized by Department of Basic Sciences & Humanities, Vignana's Institute of Management & Technology for Women, Hyderabad.
6. Participated in the webinar on **“Magnetic field effects on TiO<sub>2</sub> based DSSC (Dye sensitized Solar Cell) Solar cells,”** organized by Vignana Bharathi Institute of Technology, Hyderabad during 20<sup>th</sup> August, 2020.
7. Participated in the International Webinar on **“Advanced Materials for Energy Applications”** delivered by Dr. Ajeeth Kumar Assistant Professor, South Korea, Yeungnam University held on 12th June, 2020, Organized by Aurora’s Degree College, Hyderabad.

8. Attended short term course on “**Materials Science and Applications**”, organized by UGC-HRD center, JNTUH during 27-05-2019 to 01-06-2019.