




## Shivaji College Faculty Details Proforma

<b>Title</b>		<b>First Name</b>		<b>Last Name</b>		<b>Photograph</b>
	Dr.		Manju		Banerjee (nee Kharbanda)	
<b>Designation</b>	Associate Professor					
<b>Address</b>	J-13/23-K, Rajouri Garden, New Delhi-110027 (India)					
<b>Office Phone No.</b>	011-25116644					
<b>Residence</b>						
<b>Mobile</b>	9871919222					
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<b>Web-Page</b>						
<b>Educational Qualifications</b>						
<b>Degree</b>	<b>University/Institute</b>				<b>Year</b>	
<b>Ph.D.</b>	Department of Physics & Astrophysics, University of Delhi				1982	
<b>PG</b>	Department of Physics & Astrophysics, University of Delhi				1975	
<b>UG</b>	Miranda House, University of Delhi				1973	
<b>Any Other Qualification</b>						
<b>Career Profile</b>						

I have been a NCERT fellow, Junior and Senior. Studied BSc Physics Honours at Miranda House, University of Delhi. After Post Graduation in 1975, was actively involved in research work at the Ionospheric Research Centre of the Department of Physics, University of Delhi. Was awarded the NCERT research fellowship and UGC senior research fellowship. Was awarded the doctoral degree in Physics in 1983.

Taught Physics to the undergraduates, as a Lecturer, in Miranda House between 1981 and 1984; Worked as a temporary Lecturer in Delhi University colleges and joined Shivaji College as a permanent faculty in August 1985.

Presently working as an Associate Professor at Shivaji College, University of Delhi.

#### **Administrative Assignments**

Active Involvement in various assignments, projects and committees assigned by the college from time to time.

#### **Areas of Interest/Specialisation**

During my research tenure, I carried out systematic studies of dynamical behaviour of the mid-latitude F-region of the ionosphere. I developed a computer programme and used it to simulate the meridional wind and electron density profiles of the F-region and their diurnal variations.

Subsequently I worked on the problem of Middle Atmosphere ionisation modelling. Papers have been published in various journals.

Presently I am interested in Environmental Studies and also Science Communication.

#### **Subjects Taught**

Have been teaching Physics courses (undergraduate B.Sc. Honours/ Applied Physical Sciences) in University of Delhi since 1981.

#### **Innovation Project/Research Projects (Major Grants/Research Collaboration)**

##### **Title of the thesis:**

##### ***'Some Studies of Mid-latitude F-region Dynamics'***

During my research tenure, I carried out systematic studies of dynamical behaviour of the mid-latitude F-region of the ionosphere. I developed a computer programme and used it to simulate the meridional wind and electron density profiles of the F-region and their diurnal variations.

I made use of the available incoherent scatter radar data from St. Santin and compared these observed results with my theoretical models for some particular days and conditions. I submitted my thesis on '*Some studies of mid-latitude F-region dynamics*' at the University of Delhi and was awarded doctorate degree in 1983.

Subsequently I worked on the problem of Middle Atmosphere ionisation modelling. Papers have been published in various journals, like:

J. Atmos. Terr. Physics, Pergamon Journals, U.K.

Advances in Space Exploration, Pergamon Press, Oxford and New York

Indian Journal of Radio and Space Physics.

### **Publications Profile (Research Papers/Books)**

1. Modeling of Mid -latitude F-region for determination of winds', Manju Kharbanda and C.S.G.K Setty, paper presented at the Fifth Annual Radio and Space Science Symposium , January 22-25,1979 , held at the National Physical Laboratory , New Delhi.
2. 'Electron Loss in the F-region at Night ',Manju Kharbanda and C.S.G.K Setty , Indian Journal of Radio and Space Physics, Vol. 8 ,1979, p39.
3. 'Night Time F-region Ionisation Drifts and Loss Rates from Incoherent scatter measurement at Arecibo' ,Manju Kharbanda and C.S.G.K Setty,presented at International Committee of Space Research (COSPAR) XXII meeting , Bangalore , May – June , 1979; Published in Low Latitude Aeronomical Processes –Advances in Space Exploration , COSPAR symposium series , Vol. 8 , p177 , Pergamon Press , Oxford and New York.
4. 'Simulation of the Mid-latitude F-Region using Incoherent Backscatter Radar Observations : a quiet Daytime study to model the EUV Fluxes ' , Manju Kharbanda , A.R. Jain and C.S.G.K Setty , Proceedings of National Space Science Symposium , held at Indian Institute of Science , Bangalore , 1982, Vol. I ,p 168.
5. 'Simulation of the Mid -latitude F-Region using Incoherent Backscatter Radar Observations : the role of Electric Field in Maintenance of Night-time Ionisation ' , Manju Kharbanda , A.R. Jain and C.S.G.K Setty , Proceedings of National Space Science Symposium , held at Indian Institute of Science , Bangalore , 1982, Vol. 2 , p. 179
6. 'Mid-latitude Meridional Neutral Winds in the Quiet Ionosphere: A comparison of Radar Observations with those derives from MSIS Model' , Manju Banerjee, A.R. Jain and C.S.G.K Setty , J. Atmos. Terr. Phys. 48 , p573 ,1986 , Pergamon Journals , Great Britain.
7. 'Theoretical Modelling of Equatorial D-region :Evidence of NO variability ' A.Banerjee and Manju Banerjee, , Proceedings of National Space Science Symposium , held at , Physical Research Laboratory Ahmadabad , 21-24 December. , 1987.
8. ' Study of Night-time Ionisation in the altitude range of 150-200 km. over the equator during magnetically disturbed period ',Manju Banerjee and A. Banerjee, , Proceedings of National Space Science Symposium , held at , Physical Research Laboratory Ahmadabad , 21-24 December. , 1987.
9. 'Does NO vary with the time of the day in the Mesosphere?',Manju Banerjee and A. Banerjee , communicated to the Journal of Geophysical Research.
10. 'Truth Science and Spirituality: Common Man', Manju Banerjee and Rajiv Kumar, Proceedings of International Conference, Science, Spirituality and Humanity: Transcending Discipline Barriers held at University of Delhi, 17-19 February, 2011.
11. Air Pollution : Sources & Effects, Proceedings of National Seminar on Water and Air quality in

Urban Eco system, March 22, 2016, Shivaji college, University of Delhi.

**Conference/Seminar/Faculty Development Programme/Workshop**

**NATIONAL :**

1. Participated in Summer Schools in physics organised by the National Council of Educational Research and Training (N.C.E.R.T) during my tenure as the National Science Talent Scholar (1970-75) at:
  - a. Jaipur University
  - b. Birla Institute of Technology and Science (BITS), Pilani
  - c. Indian Institute of Technology (IIT), Chennai
  - d. Bhaba Atomic Research Centre (BARC), Mumbai
2. Symposium on Solar Planetary Physics, January 1976, Physical Research Laboratory, Ahmadabad.
3. Workshop on Equatorial Electro jet, 1977, Physical Research Laboratory, Ahmadabad.
4. Fifth Annual Radio and Space Science Symposium, January 1979, National Physical Laboratory, New Delhi.
5. National Space Science Symposium, February 1982, Indian Institute of Science, Bangalore.
6. National Space Science Symposium, December 1987, Physical Research Laboratory, Ahmadabad.
7. New Directions in Physics Education Research – Workshop, May 1999, Department of Physics , University Of Delhi.
8. Symposium on Molecular Biology ( SYNTENY - 2007 ) current innovations and future trends , October 2007, University of Delhi.
9. Symposium on Indian Physics and Mega Projects , Research on the Frontiers , D.S.Kothari Centre for Research and Innovations in Science Education, February 2009, University of Delhi.
10. Computer Programming Course(under e-Learning Initiatives) conducted by Institute of Lifelong Learning, April 2010, University of Delhi.
11. ‘Science & Spirituality are Complementary’ Manju Banerjee, Poster presented, International Conference on Science Spirituality and Humanity: Transcending Discipline Barriers, February 2011, University of Delhi.
12. ‘Truth Science & Spirituality : Common Man’ , Paper presented , International Conference on Science Spirituality and Humanity: Transcending Discipline Barriers, February 2011, University of Delhi.
13. Workshop on foundation course on Science and Life by CPDHE, June 2013, University of Delhi.
14. Active Learning Integrating Hands on Experiments and Multimedia Resources, Workshop for Undergraduate Physics Teachers, October 2013, D S Kothari Centre for Research and Innovation in Science Education.
15. Air Pollution: Sources & Effects, Poster presented, National Seminar on Water and Air quality in Urban Eco system, March 22, 2016, Shivajicollege, University of Delhi.
16. Training programme in Science Communication, CIC-Centre for Science Education and Communication, 20 – 22 December 2016, University of Delhi.

17. Organized and Participated in the Annual Workshop “PRATIBIMB” in Jan 2017 at Shivaji College.
18. Organized the Annual Departmental Festival INVENIO-2017
19. Organized the Annual Departmental Festival INVENIO-2018.
20. Organized and Participated in Lecture “Semiconductor Opto-Electronic Devices : A Perspective” by Prof. M. R. Shenoy, IIT Delhi in Oct 2017 at Shivaji College.
21. Organized and Participated in the Annual Workshop “SPECTRUM” in Jan 2018 at Shivaji College.
22. Organized and Participated in the CSIR Sponsored First National Conference on “Current and Future Perspectives in Nanotechnology : Nanoworld 2018” in April 2018 at Shivaji College.

**INTERNATIONAL:**

1. Twenty – second meeting, symposium of Committee of Space Research (COSPAR), May- June 1979, Bangalore.
2. Autumn College on Troposphere, Stratosphere and Mesosphere, at International Centre for Theoretical Physics, Trieste, Italy , September – October , 1984 .
3. Scientific Round Table Conference on ‘High Energy Astronomy’, at VigyanBhawan and Hyatt Regency, February 1989, organised by Ministry of Technology and Research, France .
4. International Conference on Physics Education – World View on Physics Education in 2005, Focussing on Change, August 2005, VigyanBhawan , New Delhi.
5. International Conference on Science Spirituality and Humanity: Transcending Discipline Barriers, February 2011, University of Delhi.

**Research Guidance (*Supervision of Doctoral Thesis/Dissertations*)**

**Awards and Distinctions**

By the National Council for Educational Research and Training

- Junior Science Talent Search Scholarship 1967-70
- Senior Science Talent Search Scholarship 1970-75
- Junior Research Fellowship 1975-77
- Senior Research Fellowship 1977-79

UGC project : Senior Research Fellowship of Middle Atmosphere Programme (MAP), UGC Project from April to September, 1981.

**Memberships**

**Other Academic Activities**

**Cultural/Extracurricular Activities**

Signature of Faculty Member