

# **Dr. Pandit B. Vidyasagar**

## **Professor,**

Department of Physics, University of Pune, Pune-411007, INDIA.

*and*

## **Director (former),**

Board of College and University Development, University of Pune, Pune.

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Head (former)

Dept of Physics ,University of Pune

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## **Education:**

1980 **Doctor of Philosophy (Ph.D.)**, Department of Physics, University of Pune, Physics,

*(Ph. D. Topic: Study of electrophysiological techniques and its application to detect early pathological changes in sciatic nerve of Swiss albino mice infected with M. Leprae)*

*Established the involvement of 'C' fibres at an early stage in leprosy, useful for early diagnosis and treatment*

1975 **Master of Science (M.Sc.)**, Department of Physics, University of Pune, Physics

(Biophysics), First Class

1972 **Bachelor of Science (B.Sc.)**, Ahmednagar College, Ahmednagar, Physics, First class

with Distinction

**Holder of National Merit Scholarship**

## **Research Interests:**

Photosynthesis and Photobiophysics, Radiation effects on biological systems, Bio-medical instrumentation, Medical informatics and Bioinformatics, Effects of altered gravity on plants and humans, Neurophysics

## **Academic Positions held:**

**1999 onwards: Professor**, Department of Physics, University of Pune , Teaching, research and administration.

**1991– 1999: Associate Professor**, Department of Physics, University of Pune, Teaching, research and administration.

**1979–1991: Assistant Professor**, Department of Physics, University of Pune, MSc, M Phill Teaching and research and guidance Ph.D.

**Visiting professor**, Chubu University, Nagoya, Japan

### **Administrative Positions held:**

**1999 to 2006: Director**, School of Basic Medical Sciences, University of Pune, Pune.

**2006 to 2009: Director, Board of College and University Development**, University of Pune, Pune.

**2011-2012 onwards: Member**, Management Council, University of Pune, Pune.

**Total 10 years in professors grade as Head of the Department and above in the University**

**1997-2001: Director**, Bioinformatics Centre, University of Pune, Pune.

**2000 – 2006: Director**, School of Energy Studies, University of Pune, Pune.

**Held charge as Acting Vice-Chancellor of University of Pune more than 6 times.**

**1987-1992: Chairman**, M.Sc. Examination

**2003: Member Xth Plan Committee**, University Grants Commission, New Delhi

**Member of assessment committee**, Centre for Advanced Studies Program, UGC, New Delhi

### **Major Academic Awards and Distinctions:**

#### **Personal:**

1. Holder of **National merit Scholarship** (1969-1973).
2. Hari Om Ashram Prestit **Dr.K.R.Ramanathan award**. Third prize was awarded to the project entitled, A simple experiment to study amplitude and velocity resonance , in the All India teaching aid contest organized by I.P.A (1991).
3. The U.G.C sponsored Physics education journal was awarded **second prize by the Federation of Indian Publishers** during my tenure as an assistant editor.
4. “**Chiplunkar Smruti award**” 1996, by Indian Physics Association, Pune chapter.
5. “**Best teacher award**”, 1998, By University of Pune.
6. **Vidya Vyas Award 2003** by Vidya Sahakari Bank for significant contribution to teaching and popularization of Science.

7. “**Regular Associateship**” awarded by As-International Center for Theoretical Physics (Trieste, Italy) 1998-2003.
8. “**Senior Associateship**” awarded by As-International Center for Theoretical Physics (Trieste, Italy) from 2003-2009
9. Maharashtra Sahitya Parishad Golden Jubilee Year Award 2005. G. R. Paranjape **Vishesh Granthakar Purashkar** for Scientific writing.
10. **Biography included in Marquis’ Worlds Whos who** in 18<sup>th</sup> millenium edition
11. **Education Award by ETH Research Laboratory**, Pune for pioneering efforts to popularize science in Marathi (2009).

**For Research Group:**

1. The research paper entitled, ‘Use of fluorescence to study the effect of pesticide on the photosynthetic pigments of *Vitis Vinifera L*’, .at the National Symposium on molecular and cellular biophysics, All India Institute of Medical Sciences, N.Delhi 110029, Feb. 18-21, 1996, won a **Certificate of Excellence**.
2. R.Chandrashekhar Memorial Foundation’s **Dr.M.R.Bhiday Prize** for the paper entitled, “Investigation on the physical and physiological effects of application of an insecticide and fungicide on photosynthetic electron transfer in grape plants,” at Raman Memorial Conference 99, Department of Physics, University of Pune, Dec.1999.
3. The poster entitled, ‘Development of a program for creating a dictionary of oligopeptide conformation and its possible applications’ won the **Best poster award** at the **National Seminar** on Recent trends in Crystallography, Biophysics and Computational Biology , Univ. of Madras, 24-26 April, 2000.
4. R. Chandrashekhar Memorial Foundation’s **Dr. M. R. Bhiday Prize** for the paper entitled, “Gel electrophoresis for detecting drug induced apoptosis in cancer cells”, at Raman Memorial Conference 2004, Department of Physics, University of Pune, February 2004.

5. R. Chandrashekar Memorial Foundation's **Dr. M. R. Bhiday Prize** for the paper entitled, "Effects of slow clinorotation on yield and quality in field grown rice", at Raman Memorial Conference 2011, Department of Physics, University of Pune, February 2011.
6. My Ph. D. students have won prestigious awards such as the **Ravikumar Bhalla award** given by **IPA (1995, 2000, 2004 and 2011)** to the best research student for their research contribution
7. Ph.D. student Mr. Sagar S. Jagtap, was awarded by **International travel award** at the 26<sup>th</sup> Annual meeting of American Society for Gravitational and Space Biology (ASGSB) 2010, Washington D. C., USA, 4<sup>th</sup> – 7<sup>th</sup> Nov. 2010 Jointly organized by ASGSB and NASA

### **Major Academic Achievements:**

- Dr Vidyasagar has designed, modified and taught courses at undergraduate and post graduate level related to physics, biophysics and medical instrumentation.
- He has also been instrumental in establishing degree courses such as B.Sc. (applied) (optometry) and B.Sc.(applied) (Biomedical Techniques).
- He has conducted refresher courses for college teachers on a national basis. Interactive software tools that have been developed by his research team can be used for applications in the hospital as well as for medical education.
- Dr Vidyasagar has himself participated in the Curriculum Development Program of University grants Commission and helped in introducing an interdisciplinary component in physics curriculum.
- He has participated in a UNESCO project on physics education and edited a book on Foundation Course in Physics. He has worked as an assistant editor of Physics Education Journal, published by the UGC, New Delhi and brought out special issues on Biophysics. He has worked as an associate director for the National Talent Search Program and Kishor Vaigyanik Protsahan Yojana, Govt. of India,
- Coordinator National Eligibility Test for college teachers by UGC, New Delhi.
- At present he worked as a convener of the Board of Studies to design the syllabus and write text books for the **IX<sup>th</sup> and X<sup>th</sup> std. to be used by 1.4 million students** in the state of Maharashtra.
- Worked as a member of the X<sup>th</sup> UGC plan committee and member of Center For Advanced Studies, assessment committee for Molecular Biophysics Unit, I.I.Sc, Bangalore.

- **New Courses Established:**
  - B.Sc. (applied) (Biomedical techniques) (1982)
  - Medical Instrumentation (optional) (1984)
  - Advanced Diploma Course in Bioinformatics (1997)
  - M.Tech. Energy Studies (2001)
  - B. Sc. (applied) (optometry) (2002)
- **Other Contributions:**
  - Framing of Syllabus of M. Sc. Bioinformatics
  - Framing of Syllabus and teaching and organizing a five year Integrated course M.Sc. Biotechnology
  - Framing of syllabi for the YCMOU.
- **Total experience of teaching & Research at postgraduate, MSc, M. Phill and Ph.D. level- 30 (thirty) years.**

### **Books and articles:**

Samaj Parivartanasathi Antarjatiy Vivah - A booklet in Marathi It is in the market since 1980 and still in demand.

- Vidnyan Darshan - A book in Marathi.
- Sir, C.V.Raman , a book in Marathi.
- Medical Instruments, A book in marathi.
- Second edition of Sir C.V.Raman, a book in Marathi, has been brought out.
- CT scan - third eye of the doctor, in **English**
- CT scan - Book in Marathi
- These books were published as an exploratory series of books of which first edition has been sold out
- **Superclone, Scientific fiction in Marathi and translated in Kannada.**
- **Presently being used as a text book for M.A. Marathi of Pune University**
- **Foundation course in Physics, UNESCO Publication English**
- Antarali, Science Fiction, Marathi. This novel was read through out the year on All India Radio, Jalgaon followed by Solapur AIR centre.
- Mahamanav **Einstein**, Marathi, International Year of Physics Celebration (2005) **Included in the list of best seller of the year 2005.**

- More than **two Hundred** articles in Marathi on various subjects.
- **Vidnyan Prashnawali**, Answers to the questions asked by the students on the science related topics (2004)
- **Amhi Shatradnya Ase Zalo**, Translation of One hundred reasons to be a Scientist edited by K. R. Sreenivasan, published by Abdus Salam- International Center for Theoretical Physics, Trieste, Italy in Marathi, (2006)
- **Shodh Janiwancha**, Scientific basis of perception, comprehension and concept formation in Marathi (2008)
- **Ovi Gou Vidnyanachi (song of science) in press**

### **Talks and films:**

- Subject expert and co-ordinator for **five** films on Medical Instrumentation and **ten** films on other subjects for the EMRC, Pune.
- More than **twenty-five** talks on All India Radio.
- Active participation in the activities organized by Peoples Science Movement. About **two hundred** lectures at school, colleges and public places in urban and remote rural areas since 1980.
- Produced 30 educational films for PHYSICS through EMRC,Pune.

### **Research projects as Principal investigator:**

Sl.No.	Name of the project	Funding	Duration
1	To study the effect of organophosphate insecticides on nerve muscle preparation	<b>B.R.N.S</b> <b>(Major)</b>	1984 - 1987
2	To study the effect of venom on heart rate variability of Swiss white mouse.	K.R.Damle Charitable Trust	1985 - 1988
3	To prepare an electronic gadget to aid deaf & dumb	Govt. of Maharashtra	1988 - 1991
4	To build a microprocessor based thermoluminescence system to study the electron transport pathway in green plants & algae	<b>B.R.N.S</b> <b>(Major)</b>	1991- 1994
5	To investigate the damage caused to the photosynthetic apparatus by the	<b>C.S.I.R.</b>	1996 - 1999

	uncontrolled use of pesticides and its possible relation to the occurrence of the pink berry disease in grape vineyards.	<b>(Major)</b>	
6	Model for cardiovascular system	<b>C.S.I.R</b>	2002 onwards
7	Cellular response to ionizing radiation with implication to cancer therapy	<b>BARC-PU (DAE)</b>	2002 onwards
8	Effect of altered gravity on plant, insect and human cardiovascular system	BCUD	2006-2008
9	To study the effects of microgravity on growth, development and photosynthetic aspects in plant. <b>Experiment selected for Space Capsule Recovery Experiment-II (SRE-II) to be launched ISRO in 2011-2012</b>	<b>ISRO (Major)</b>	2009 onwards
10	To study the effects of altered gravity on developments in plants (micro and hypergravity)	<b>DST (Major)</b>	<b>30 lakh</b> Under consideration
11	Effects of altered gravity (micro and hyper) on seed germination and photosynthetic apparatus in plants	<b>ISRO (Major)</b>	<b>26.80 lakhs</b> 2010 onwards

### **Workshops/Conferences/Symposia Organized :**

<b>Sr. No.</b>	<b>Name of the workshop</b>	<b>Place</b>	<b>Dates</b>	<b>Topic</b>
1	<b>National</b> Workshop on Advanced level experiments in Physics	Dept. of Physics	26 Mar- 1 Apr 1991	Advanced level experiments in Biophysics
2	<b>National</b> Seminar of Indian Biophysical Society	- do -	7 <sup>th</sup> - 9 <sup>th</sup> Feb. 1992	Recent trends in Molecular and Medical Biophysics

3	Refresher course	do -	4 <sup>th</sup> -31 <sup>st</sup> Dec1997	Advanced Course in Medical Phys.& Instrumentation
4	Refresher course	- do	Sept. 17- Oct. 1998	Physics in Medicine and Biology
5	Refresher course	do -	Nov. 8-28 , 2002	Medical Physics
6	Enertech 2004	School of Energy Studies	Nov 2004	Technical Presentations of Engg. Graduates
7	Enertech 2005	do-	Oct 2005	Do
8	UGC Workshop on Experimental Physics	Department of Physics , Jaipur University, Rajasthan		Joint Director
<b>9</b>	<b>National</b> Symposium on Recent Trends in Medical and Molecular Biophysics	School Basic Medical Sciences	January 2005	Convener
<b>10</b>	<b>International</b> Symposium on “ Fifty years of discovery of triple helical structure of collagen	Bioinformatics Centre	January 2005	Convener
11	UGC meeting SET-NET	Pune University	2006	Coordinator
12	International conference on Biology Beyond Borders, Jointly organized by University of Pune and International Society of Integrative Biology,	University of Pune	4 <sup>th</sup> – 5 <sup>th</sup> March 2010	Convener

	Singapore, ,			
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- **Organized several refresher courses in Physics, teacher training programmers and short duration workshops for students and college teachers.**

### **Paper published in Professional Journals and Proceedings:**

More than **130 papers** published in the area of Photosynthesis, Medical Physics, Gravitational Biology etc. (list attached).

### **Thesis/Dissertations guided:**

**Ph.D: 16      M. Phil.: 18**  
**Ph.D: 02 (working at present)**

### **Additional Experience:**

- **Coordinator**, National Eligibility Test, New Delhi (2002)
- **Joint Secretary**, Maharashtra Academy of Sciences (2005 onwards)
- **Member Secretary**, Employment Exchange Bureau, Govt of Maharashtra (2001-2005)
- **Assistant Editor** of Physics Education Journal published by UGC for 5 years (1986-1991).
- **Secretary**, Indian Physics Association, Poona Chapter (1984-1986).
- **Joint Co-ordinator**, of the UNESCO Foundation course in Physics.
- **Chairman, UGC Committee** to develop a Indian Model for Equivalence for Indian Universities, 2009
- **Coordinator for UAE Campus** of Pune University and Proposed campus at Uganda
- **Chairman**, Science formulation Committee, Central University, Gujrat
- **Rector**, University Hostel
- **Chairman**, Students welfare, (1987-88)
- **Associate Director**, NTS examination, NCERT, New Delhi

### **Experience of Working on The statutory authorities of the University :**

- **2011 onwards: Member**, Management Council, University of Pune
- **2003-2005: Member**, Board of studies in Biophysics, Mumbai University.

- **2005-2010: Member**, Board of studies in Physics, Shivaji University
- **2005-2007: Member**, Board of studies in Biophysics, Benaras Hindu University
- **2005-2010: Member**, Academic Council and Faculty of Science, University of Pune
- **2006-2009: Member**, of management Council, University of Pune
- **2006-2009: Member** of Senate, University of Pune
- **1994-96: Member**, Indian Biophysical Society of Executive council
- **2003 onwards: Member** of Executive Council, Maharashtra Academy of Sciences
- **2000 onwards: Managing trustee**, Vidnyan Sawardhan Mandal, Pune
- **2001-2007: Chairman**, Adhoc Board of Studies in Basic Medical Sciences University of Pune
- **2005 onwards: Member**, UN Committee on Medical Physics

### **Demonstrated experience in leadership:**

- **Provided leadership in implementing vital projects in higher education and shaping education policy at National and International level.**
- **Dr. Vidyasagar has administered major projects up to 1 cr. per year as a Director of Bioinformatics Centre (three years) and Director School of Energy Studies of worth 50 lacs per year (five years).**
- **Also worked as a member of the finance committee of University of Pune which distributes finance for all sections of the university.**
- **He has earned revenues through conducting courses through the School of Basic Medical Sciences.**
- **Also monitored and implemented University with Potential of excellence program from 2006 to 2009 (total funding Rs. 30 cr.) and prepared a plan for the next phase (Rs. 100cr.).**
- **Dr. Vidyasagar has taken initiative and administered a novel and unique scheme of providing financial assistance to University and college teachers during 2006 to 2009 (funding of Rs. 8 cr. Per year) for last three years.**
- **Organized visits of UGC xi plan committee to the university and colleges. The total funding recommended is about Rs. 60 cr.**
- **And currently coordinating a scheme of Rs. 15 cr. With Department of Science and Technology, Govt. of India.**

- In the capacity of Director, Board of College and University Development I have provided unique leadership by initiating and coordinating novel schemes such as providing financial assistance to university and college teachers, revision of all syllabi at undergraduate and postgraduate level, organizing research project competition 'AVISHKAR' at state level & 'ANVESHAN' at national level. Establishing a triple connectivity (data, audio and video) with all colleges.

**Referee for evaluation of research papers to be published in International and National Journals :**

- Measurement Science and Technology, UK.
- Nuclear Instruments and Methods in Physics Research
- Current Science, India
- Indian Journal of Biophysics and Biochemistry, India
- Physics Education, India

**Membership of scientific societies:**

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| • Member      | Institute of Physics, UK                         |
| • Life member | Indian Biophysical Society                       |
| • Life member | Indian Physics Association                       |
| • Life member | The Indian National Science Congress Association |
| • Fellow      | IETE, New Delhi                                  |
| • Fellow      | Maharashtra Academy of Sciences                  |
| • Life member | Bhandarkar Oriental Research Institute           |
| • Member      | Advisory Council Anthropological Society         |

**Few significant achievements:**

- My book in marathi 'Superclone' was serialized in 'saptahik sakal', translated in kannada and was prescribed as a text book for M.A. Marathi by Pune University alongwith renewed writers such as V. S. Khandekar. Now it is translated in Hindi.

- Research work related to early diagnosis of leprosy has been recognized as a pioneering work
- Research work on Thermoluminescence has been included (five publications) in the History of Thermoluminescence in the world & history of photosynthesis in India
- Experiment on effects of microgravity has been selected by Indian space Research Organization (ISRO) for Space Capsule Recovery Experiment-II to be launched in March-2010
- I was awarded regular and senior associateship by International Center for Theoretical Physics, Trieste, Italy from 1998-2011
- A book on Einstein was in the category of Best seller for five years

**Participation in training programmes, workshops, seminars, initiation of academic collaborations and participation in expert meetings (selected):**

Sr. No.	Duration	Institute	Designation	Nature of work done
1	02 <sup>nd</sup> Sept – 26 <sup>th</sup> Sept 1978	Alexander Don Humboldt Stiftung (Bonn) & German Academic Services (Bonn)	Student Participant	Intensive training course in neurophysiology
2	02 <sup>nd</sup> Sept – 26 <sup>th</sup> Sept 1979	Alexander Don Humboldt Stiftung (Bonn) & German Academic Services (Bonn)	Teacher Participant	Intensive training course in neurophysiology
3	15th October to 15th Dec. 1986	Bremen University, Germany	Visiting Fellow	P <sup>31</sup> NMR study of human red cells stored under different conditions
4	5 <sup>th</sup> – 16 <sup>th</sup> March 1990	Indian Institute of Science, Bangalore	Participant	Tutorial school in neural

				networks
5	15 <sup>th</sup> – 18 <sup>th</sup> May 1994	Cochin University	Participant	International Conference on Neurobiology
6	June 1993 – January 1994	T.I.F.R., Mumbai with Prof. O Siddiqui, FRS	Visiting Fellow	Measurement of membrane potentials in <i>Xenopus</i> oocytes and giant algae “Chara”
7	26 <sup>th</sup> Sept – 6 <sup>th</sup> Oct 1994	Advanced Study Institute by NATO Volterra, Italy	Participant	Course on “Light as an information carrier & energy source in plant photobiology”
8	21 <sup>st</sup> – 26 <sup>th</sup> August 1995	Bioinformatics Centre, Pune	Participant	Advanced training course on “Bioinformatics & release of novel organisms into the environment”
9	June 1996	Jawaharlal Nehru Centre, IISc, Bangalore	Visiting Fellow	Voltage clamp set-up for studying membrane potentials
10	12 July – 11 Oct. 1999	Abdus Salam International Centre for Theoretical Physics, Trieste, Italy	Regular Associate	Evolution and Photosynthesis
11	23 <sup>rd</sup> April – 24 <sup>th</sup> June 2001	Abdus Salam International Centre for Theoretical Physics, Trieste, Italy	Regular Associate	Neurophysics, Protein folding
12	23 <sup>rd</sup> June –	Abdus Salam International Centre for Theoretical	Regular Associate	Neurophysics, protein

	20 <sup>th</sup> Sept 2003	Physics, Trieste, Italy		folding and molecular evolution.
13	31 <sup>st</sup> May – 4 <sup>th</sup> July 2005	Abdus Salam International Centre for Theoretical Physics, Trieste, Italy	Senior Associate	Bio-nanotechnology, Magnetic materials
14	4 <sup>th</sup> - 14 <sup>th</sup> July 2005	Queens University, Kingston, Canada	Visiting Professor	Invited Talk and research collaboration.
15	31 <sup>st</sup> Oct.- 2 <sup>nd</sup> Nov. 2005	International convention centre, Durban	Invited as expert	World conference on Physics and sustainable Development.
16	20 <sup>th</sup> – 26 <sup>th</sup> August, 2006		Member of the Indian Delegation, DST, Govt. of India	International Conference on Photosynthesis in the post genomic era II
17	20 <sup>th</sup> – 22 <sup>nd</sup> February, 2008	UNSW Sydney, Australia	Invited as an Expert and representative of Pune University	International Research Workshop
18	1 <sup>st</sup> -3 <sup>rd</sup> April, 2008	Dubai	Academic coordinator, University of Pune	GETEX & Discussion about Campus
19	10 <sup>th</sup> – 26 <sup>th</sup> June, 2008	AS-ICTP, Trieste, Italy	Senior Associate	Invited talk participation in workshop.
20	27 <sup>th</sup> – 28 <sup>th</sup> June, 2008	Vienna, Austria	Official visit as a Senior Academic administrator to establish collaborations	Vienna University. Discussion on credit transfer.

21	29 <sup>th</sup> June, 2008	Braudex France	Representative of Pune University	Collaboration in Management
22	29 <sup>th</sup> June, 2008	Sciences-Po Paris		Discussion about transfer of students from Pune-Paris and vice-versa
23	22-27 <sup>th</sup> July 2007	Glasgow, UK	Participant	Photosynthesis. Energy from the Sun: 14 <sup>th</sup> International Congress on Photosynthesis
24	14 <sup>th</sup> -21 <sup>st</sup> Sept., 2010	Japan	Chubu University, Nagoya, Japan	Meeting of experts and seminar on development of course in environmental science organized by Japan Govt
25	22 <sup>nd</sup> -23 <sup>rd</sup> Sept., 2010	Singapore	Nyang University, Singapore	Visit to Nyang University, Singapore
26	15-20 <sup>th</sup> Sept., 2011	Japan	Chubu University, Japan	International Symposium on Sustainability 2011
27	10-14 <sup>th</sup> October, 2011	ICTP, Italy	Miramare, Trieste Italy	Joint ICTP-KFAS Conference on Nanotechnology for Biological and

				Biomedical Applications (Nano-Bio-Med)
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### **List of Publications in Refereed Journals:**

1. V.P.Shetty, **P.B.Vidyasagar** and N.M.Antia, "Study and evolution of nerve damage in leprosy part III - Sciatic nerve lesions in mice correlates" *Leprosy in India*, **52**(1), 26-47 (1981)
2. **P.B.Vidyasagar**, P.S.Damle and N.H.Antia, "A study of the sciatic nerve compound action potential invitro ; in normal and M.Leprao infected mice", *Leprosy in India*, **53**(4), 537-55 (1981)
3. Gauri Deshpande, **P.B.Vidyasagar**, "A simple electronic based sine wave modulator to study the linear responses from the compound eye of cockroach, *Periplaneta Americana*", *Indian Jr. Expt. Biol.* (Aug. 1984)
4. **P.B.Vidyasagar**, P.S.Damle, M.N. Lokhandawalla "Study of the amplitude frequency function of the compound action potential recorded from normal and M.Leprao,infected mice using fourier series analysis". *Indian Journal of Leprosy in India* **58**(1) (1986)
5. **P.B.Vidyasagar** "Effect of cytochalasins on electrophysiological & electrical properties of cells", *Recent Advances in Cytochalasins*. Chapman & Hall, 11 New Peter Lane, London EC4P4EE (1986)
6. S.Pal, **P.B.Vidyasagar**,V.Ghole, "Effects of Vipera Labetina (Turanica C) venom on electrocardiogram of Swiss white mice by heart rate variability techniques", *Ind. Jr. of Expt. Biol.* **25**, 262-264 (Apr. 1987)
7. **P.B.Vidyasagar**, "Electrophysiological techniques", A tool for biophysicists, Association Biophysics Proceedings. pg 35-39 (1987-88)
8. G.R.Kulkarni, **P.B.Vidyasagar**, "Physics of vision" *Physics Education*, **5**, 156-160 (Oct. - Dec. 1988)
9. Saumen Pal, **P.B. Vidyasagar**, V.R.Gunale, "Rapid effects of lead on water Hya cinth ( Eichornia Crassipes Solmo) plant following a single exposure by photoacoustic technique" *Current Science*, Oct. 1989
10. Ulhas Hegde, Subhash Pandhye ,Milan Banerjee, **P.B.Vidyasagar**, "Effect of metal chelators on Thermoluminescence peaks of Spinach chloroplasts and photosystem II particles. Probing the water oxidation cycle with 8-hydroxyquinoline", *Indian J of Biochemistry and Biophysics*, **27**, 5 (1990)
11. Milan Banerjee, **P.B. Vidyasagar**, Ulhas Hegde, Subhash Pandhye "Chemical probes for water oxidation cycle of photosystem II : Part 2 -

Effect of histidine modifying reagent on thermoluminescence peaks of Spinach chloroplasts”, *Indian Journal Biochem. Biophys.* (1990)

12. S.M.Shushtarian, **P.B.Vidyasagar** and S.H.Yahyavi, “Fourier analysis of VEP at different light intensity levels”, *Physica Medica-Vol VI*, N. 3-4, July-December 1990.
13. Sharad Nikum, Milan Banerjee, **P.B.Vidyasagar**, S.V.Bhoraskar, Suvarna Babras, “Tail states in hydrogenated amorphous silicon studied by thermoluminescence”, *Solid State Communications*, Vol. 80, No. 8, pp 563-566 (1991).
14. **P.B. Vidyasagar**, Book on Medical Instrumentation - I
15. **P.B. Vidyasagar**, *Manual for M.Sc. level experiments in Biophysics*
16. B.B. Kadu, **P.B. Vidyasagar**, “Blood lead levels by Atomic Absorption Spectrophotometry”, *Proc. of Acad. Environ. Biol.* **4**(1) 1–6, 1995.
17. **P.B. Vidyasagar**, Saumen Pal “Assesment of the toxicity level of gamma-irradiated snake (*Naja naja oxiana*) venom by photoacoustic spectroscopy”, *Ind. Jr. Phys.* **65** (B), pp 541- 550, (1991).
18. Saumen Pal, **P.B. Vidyasagar**, Vrinda Khole, P S Damle and Vijay Khole, “Cardiotoxic effects of oxus cobra (*Naja naja oxiana* Eichwald) venom on Swiss Albino mice by heart rate variability technique”, *Indian J Expt Biology*, **25** p 262-264, (1991)
19. **P.B.Vidyasagar**, M.Banerjee, A T Palwe, G R Kulkarni, A D Shaligram and N M Kulkarni, “Study of energy transfer process in light absorbing pigments : chlorophyll, using positron annihilation technique”, *Materials Science Forum*, **105-110**, pp. 1757-1760, (1992)
20. S.Thomas, **P.B.Vidyasagar**, M Banerjee, U Hegde, and A D Shaligram, “Analysis of DCMU treated photosynthetic glow peaks using the general order kinetics model”, Proceedings of the DAE Symposium on “Photosynthesis and plant molecular Biology”, at Jawaharlal Nehru University, N.Delhi, March 1993, pg. 86-91.
21. **P.B.Vidyasagar**, S Patil, S M Kamble, S.Thomas, B B Chaugule, “Effect of lead on the absorpction spectra of photosynthetic pigments”, Proceedings of the DAE Symposium on “Photosynthesis and plant molecular Biology”, at Jawaharlal Nehru University, New Delhi, March 1993, pg. 91-96.
22. **P.B.Vidyasagar**, S.Thomas, M Banerjee, U Hegde and A.D.Shaligram, “Determination of peak parameters for TL glow curves obtained from spinach chloroplasts, using mathematical models based on general order kinetics”, *Jr. of Photochemistry & Photobiol* : B, 19(2), 125-128, (1993)
23. S.Thomas, M Banerjee, **P.B.Vidyasagar**, A.D.Shaligram, “A PC-based TL data acquisition and analysis system for studies on low temperature TL glow peaks from photosynthetic material”, *Measurement Science and*

*Technology*, **6**, 554-559, (1995)

24. S.Thomas, M Banerjee, **P.B.Vidyasagar** and A D Shaligram, “Instability in the photosynthetic system and its implications to molecular Electronics”. *Materials Science & Engineering, C : Biomimetic materials, Sensors and Systems*, **C3**, 223-226, (1995)
25. **P.B.Vidyasagar**, S.Thomas. “Naturally occurring light sensors in living organisms”, Proceedings of the 2<sup>nd</sup> National Seminar on “Physics and technology of sensors”, Feb. 2-4, 1995, Department of Electronic Science, University of Poona
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Department of Physics, University of Pune, Pune-411007, INDIA.

### **PAPERS PUBLISHED IN REFEREED CONFERENCES:**

1. **P.B.Vidyasagar.** "The effect of body temperature on conduction velocity of a normal mouse sciatic nerve" - An vivo study -23rd. Annual Conference of APPI, Madras, Dec. 1977
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45. Pratip Shil, S H Sanghvi, **P.B. Vidyasagar**, K.P.Mishra. “Enhancement of cytotoxic effects of radiation and drug by electroporation in cancer cells: in vitro and in vivo studies”. **Oral presentation** at the National Symposium on “Recent trends in Molecular and medical Biophysics”, January 2005, University of Pune. **This presentation won the Indian Biophysical Society Young Scientist Award 2005 for my student.**
46. Santosh Bhaskaran, **P.B Vidyasagar** “Effects of gravity on Cardio Vascular systems by change in posture”. Poster presented at National Symposium on “Recent trends in Molecular and medical Biophysics” January 2005,

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54. National symposium of Indian Biophysical Society, IBS 2006 at Saha Institute for Nuclear Physics, Kolkata, 7- 10<sup>th</sup> January 2006. **Poster presented** entitled, “Integrative software for homology analysis of cancer related proteins” authored by **Pratip Shil**, Niraj Dudani, P.B. Vidyasagar.
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58. Jagtap S.S., Santosh B., **Vidyasagar P.B.** Poster titled “Effect of microgravity on plant growth and development”, Raman Memorial Conference, 2007 at Dept. of physics, University of Pune, Pune.
59. **Vidyasagar P. B.**, Jagtap S. S., Nirhali A. A., Bhaskaran S. and Hase V., Poster titled “Effects of hypergravity on the chlorophyll content and growth of root and shoot during development in rice plants”, at Photosynthesis 2007, Glasgow, UK, 22-27 July 2007
60. Santosh B., Jagtap S.S., Nirhali A.A., Hase V.R. and **Vidyasagar P.B.**, Talk and poster titled “Microgravity effects on chlorophyll content”, at IAC 2007, Hyderabad, India, 24-28 Sept. 2007
61. Jagtap S.S., Hase V., Amit A. N., Santosh B. and **Vidyasagar P.B.**, Poster titled “Effects of simulated microgravity on growth and chlorophyll content during development in rice” at National Symposium on Biophysics: Biophysics in Medicine and Biology, IBS 2007-08, Organised by Department of Biophysics, Punjab University, Chandigarh, 15-17 Nov. 2007
62. Jagtap S.S., **Vidyasagar P.B.**, Nirhali A.A., Hase V. and Santosh B. Oral presentation titled “Pre-exposure effects of Hypergravity on growth and development in rice”, Raman Memorial Conference, 2008 at Dept. of physics, University of Pune, Pune.
63. Jagtap S.S., Santosh B. and **Vidyasagar P.B.** Poster titled “Effects of hyper and microgravity on growth and chlorophyll content in rice plants”, Avishkar 2008, Zonal Research Project competition for UG/PG/Doctoral students, University of Pune, Pune.
64. **Vidyasagar P.B.**, and Jagtap S. S. invited talk “Effects of altered gravity on growth and development in rice and wheat plants” International conference on Photosynthesis in the global perspective hosted by School of Life Sciences, DAVV, Indore, India 27<sup>th</sup> – 29<sup>th</sup> Nov 2008

65. Jagtap S. S., Rajenimbalkar A. V., Santosh B. and **Vidyasagar P. B.** poster titled “Effects of pre-germination hypergravity exposure on growth and chlorophyll content in wheat seedlings” International conference on Photosynthesis in the global perspective hosted by School of Life Sciences, DAVV, Indore, India 27<sup>th</sup> – 29<sup>th</sup> Nov 2008
66. S. K. Khanwani, S. Sing, S. S. Jagtap, Santosh B. and **P. B. Vidyasagar** poster titled “ The effect of hypergravity on biomolecules responsible for growth in plants” National Symposium on Cellular and Molecular Biophysics, Centre for Cellular and Molecular Biology, Hyderabad, India 22-24 Jan, 2009
67. **Pandit B. Vidyasagar** and Sagar S. Jagtap poster titled “A short interval, pre-germination exposure method involving high values to study the effects of hypergravity on growth and reversibility of these effects in wheat seeds” International Conference on Physics Biology Interface, Saha Institute of Nuclear Physics, Kolkata, India, 13-16 Dec, 2009
68. Sagar S. Jagtap, presented poster and oral titled “Design and development of clinostat to study the effects of simulated microgravity on plants” participated in state level research project competition “Avishkar” Solapur University, Solapur, India, 11-13 Jan, 2010
69. Sagar S. Jagtap and **Pandit B. Vidyasagar** presented poster entitled “Effects of hydration/dehydration stress on seed germination and growth” at International conference on Biology Beyond Borders, Jointly organized by University of Pune and International Society of Integrative Biology, Singapore, UoP, Pune, India, 4<sup>th</sup> – 5<sup>th</sup> March 2010
70. Jagtap S. S., Dhumal K. N. and **Vidyasagar P. B.** a poster on “Effects of Slow Clinorotation on Growth and Yield in Field Grown Rice” at the 26<sup>th</sup> Annual meeting of American Society for Gravitational and Space Biology (ASGSB) 2010, Washington D. C., USA, 4<sup>th</sup> – 7<sup>th</sup> Nov. 2010
71. **P. B. Vidyasagar** and S. S. Jagtap poster entitled “Effects of Hypergravity on Plant Growth and Reversibility of These Effects in Wheat Seeds” at the 26<sup>th</sup> Annual meeting of American Society for Gravitational and Space Biology (ASGSB) 2010, Washington D. C., USA, 4<sup>th</sup> – 7<sup>th</sup> Nov. 2010
72. S. S. Jagtap oral presentation “Life in space” at 11<sup>th</sup> PLANEX workshop on “Exploration of Mars and Moon” at PRL, Ahmedabad from 3-7 Jan 2011

73. S. S. Jagtap, K. N. Dhumal and **Pandit B. Vidyasagar** poster presentation entitled “Retention of effects of long term exposure of rice seeds to clinorotation” at 7<sup>th</sup> Asian Biophysics Association (ABA) Symposium and Annual Meeting of the Indian Biophysical Society 30<sup>th</sup> Jan - 2<sup>nd</sup> Feb 2011 at India Habitat Center, New Delhi, India
74. Sagar S. Jagtap oral presentation entitled “Effects of Slow Clinorotation on Growth and Yield in Field Grown Rice” at Raman Memorial Conference, 2011, at Dept. of physics, University of Pune
75. **P. B. Vidyasagar**, S. S. Jagtap and S. M. Kamble. Comparative Study of Effects of Clinorotation on Germination, Growth and Photosynthetic Performance in Rice, Wheat and Mungbean paper accepted for oral presentation November 28th - December 2nd, 2012 in New Orleans, Louisiana, USA.
76. S. M. Kamble, S. S. Jagtap, **P. B. Vidyasagar** Effects of Clinorotation on Growth and Photosynthetic Yield in Mungbean (*Vigna radiata* L.) Seedlings, paper accepted for poster presentation November 28th - December 2nd, 2012 in New Orleans, Louisiana, USA.
77. Avinash J. Aher, Sagar S. Jagtap, Suresh W. Gosavi and **Pandit B. Vidyasagar** Biosynthesis of Silver Nanoparticles in Simulated Microgravity. paper accepted for poster presentation November 28th - December 2nd, 2012 in New Orleans, Louisiana, USA.