CURRICULUM VITAE

Name: Dr. PRASANTA GHOSH

I. Personal Memorandum

Mailing Address	**: Plot No- 178, Near Bisrambaba School, Nandanvan Colony, Chawni Area, Aurangabad-431001, Maharashtra, India**
Office Address	**: Department of Applied Science, MSS's College of Engineering And Technology, Nagewadi Jalna-431203, Maharashtra, India**
Permanent Address	**: S/O Sudarson Ghosh, Near Radharani Mela, Village- Bhuteswar, Sanbandha-722155, West Bengal, India**
Cell	**: +91-9970669610**
E-mail	**: pghoshsensor@gmail.com**
Date of Birth	**: March 31, 1982**
Language Known	**: Bengali, Hindi, Marathi & English**

II. Present Affiliation

- **Working as a Assistant Professor in Physics at Department of Applied Science, Polytechnic wing, Matsyodari Sikshan Sanstha's College of Engineering and Technology, Jalna, Maharashtra since February 2014**

III. Academic Preparation:

Sr. No	Degree	University/ Institution	Year	Specialization	Percentage Obtained
1.	Ph.D.	Dr Babasaheb Ambedkar Marathwada University, Aurangabad (MS), NAAC Accredited A Grade	October 2013	Physics	NA
2.	M.Sc.	Dr Babasaheb Ambedkar Marathwada University, Aurangabad (MS) NAAC Accredited A Grade	JULY 2006	Physics (Electronics)	62.00%
3.	B.Sc.	Dr Babasaheb Ambedkar Marathwada University, Aurangabad (MS) NAAC Accredited A Grade	JUNE 2004	Physics, Electronics, Mathematics	57.97%
4.	HSC	West Bengal Council of Higher Secondary Education (WBCHSE), Kolkata	JUL 2001	Physics, Mathematics, Chemistry, and Biology	45.00%
5.	SSC	West Bengal Board of Secondary Education (WBBSE), Kolkata	JUN 1998	----------	58.38%

IV. Research & Project Experience:

1) **(i) Subject of Doctoral Research:** Fabrication of Carbon Nanotubes (CNTs) Modified Conducting Polymer Nanowires Based Field Effect Transistors for Chemical Sensing Applications.
(ii) Date of Registration: December, 2006

2) **Worked as a Project Fellow** in Inter University Accelerator Centre – UFR (New Delhi) Project entitled "A Pursuit towards Highly Selective Toxic Vapour Nano Sensor Array: Investigation on Effect of Metal Ion

Irradiation on Pristine and Conducting Polymer Functionalized SWNTs " from September 2010 to July 2013.

3) **Worked as a Project Fellow** in a University Grants Commission major research project entitled "Fabrication Of Carbon Nanotubes (CNTs) and Metal Oxide Nano Particles Modified Chemically Sensitive Field Effect Transistors (CHEMFETs) for the Development Of Hazardous Gas Sensors" from May 2008 to May 2010.

V. Research Areas

- **Synthesis of Carbon Nanotubes for gas sensing application**
- **Carbon nanotube/Conducting Polymer/Metal Nanoparticle modified FET based Toxic gas sensor**
- **Carbon nanotube/Conducting Polymer/ Metal Nanoparticle modified chemiresistive Toxic gas sensor**
- **Synthesis of Conducting Polymer Nanowires by templateless technique**
- **Synthesis of Conducting Polymer thin films by Electrodeposition and Chemical bath Deposition**
- **Development of Conducting Polymer based Gas & Bio Sensors**
- **Designing of Optical fiber sensors**
- **Development of Modified cladding Optical Fiber Sensors**
- **Growth of NLO Material Crystals**

VI. Instruments / System Handled

- **FE-SEM(Scan Electron Microscope)**
- **15 UD Pelletron Accelerator**
- **Chemical Vapour Deposition Unit**
- **Hi-vacuum Thermal and E-Beam Evaporation Unit**
- **FTIR Spectrophotometer**
- **UV-Vis Spectrophotometer**
- **Electrochemical Workstation**
- **Probe Station**
- **Wedge Wedge Wire Bonder**
- **Keithley SMU**
- **Digital Spin coater**
- **Work experience in Class 10,000 Clean Room**

VII. Instruments/ Devices/System Developed

- **Designing and development of Vapor Phase Chemical Vapor Deposition system *(Under Patent Process)***
- **Designing and development of Probe Station *(Under Patent Process)***
- **Designing and development of Variable Wave length Source and Measure Unit**
- **Designing and development of Micro centrifuge Tube Filling Gadget *(Under Patent Process)***
- **Designing and development of PC Based Robotic Arm for SILAR and Dipcoating Technique *(Under Patent Process)***
- **Designing and development of Digital Constant Temperature Bath**
- **Designing and development of Anti-vibration Platform**
- **Designing and development of Automated Dynamic Gas Sensing Unit**
- **Designing and development of Digital Oven & Furnace**
- **Laboratory Automation**
- **Designing and development of PG level (Physics & Electronics) Laboratory experimental setup**
- **PC based Process control and DAS Applications**
- **Microprocessors and their interfacing applications**
- **Microcontrollers and their interfacing applications**

VIII. Co-curricular and extra-curricular activities

(i) Worked as a **volunteer** in 'International Conference on Microwaves and Optoelectronics- **ICMO 2007** organized by Dr. Babasahe Ambedkar Marathwada University, Aurangabad

(ii) Worked as an **Organizing Committee Member** towards overall management of two **DST-INSPIRE Camps** (February, 2013 and December, 2013) organized by Department of Physics, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

IX. Consultancy Work Carried out

Working as a **technical solution provider and consultant** to **SSD Enterprises, Jalna and Devi Agencies, Aurangabad** in development/solution in sectors of research/production instrumentation.

X. Total No. of Publications - 45

- **Peer Reviewed National/International Journals - 23**
- **Proceedings of National/International Conferences - 20**
- **Chapters in National Book - 02**

XI. Impact factors of some International / National Journals in which Research Papers have been published

Sr. No.	Name of the Journals	Impact Factor
1	Journal of Physical Chemistry C (American Chemical Society)	4.81
2	International Journal of Electrochemical Science	3.72
3	Journal of Physics D : Applied Physics (IOP Journal)	2.54
4	Material Letters (Elsevier)	2.22
5	Smart Materials and Structures (IOP Journal)	2.08
6	Polymer Advanced Technologies (Wiley Inter Science)	1.63
7	Applied Physics A (Springer)	1.54
8	International Journal of Polymeric Materials (Taylor and Francis)	1.2
9	Optoelectronics and Advanced Materials – Rapid Communications	0.3

XII. List of Publications

- **Research Papers Published in International Journals**

[1] Arti Dinkarrao Rushi, Kunal Prasanta Datta, **Prasanta Sudarson Ghosh**, Ashok Mulchandani, Mahendra Dasharath Shirsat, "Selective Discrimination among BTX: Probing Metalloporphyrin Functionalized SWNTs based Field Effect Transistors" **J. Phys. Chem. C (dx.doi.org/10.1021/jp504657c | September 22, 2014)**

[2] **Prasanta Ghosh** , Kunal Datta , Ashok Mulchandani, Sung-Hwan Han, Pankaj Koinkar and Mahendra D. Shirsat "Poly (O-Toluidine) nanowires based Organic Field Effect Transistors - A study on influence of Anionic Size of Dopants and SWNTs as a dopant" **Journal**

of Physical Chemistry C (ACS), 117, (2013), 15414-15420. ***[First Two Authors have equal contribution]***

[3] **P Ghosh**, K Datta, Ashok Mulchandani, R.G. Sonkawade, K. Asokan, and M D Shirsat "A Chemiresistive Sensor based on Conducting Polymer / SWNTs Composite Nanofibrilar matrix – Effect of 100 MeV O16 Ion Irradiation on Gas sensing properties" **Smart Materials and Structures (IOP) , 22, (2013), 035004 (8pp).** ***[First Two Authors have equal contribution]***

[4] K Datta**, Prasanta Ghosh**, Ashok Mulchandani, Sung-Hwan Han, P Koinkar and Mahendra D. Shirsat "Organic Field Effect Transistors: Predictive Control on Performance Parameters" **J. Phys. D: Appl. Phys. 46 (2013) 495110 (7pp).** ***[First Two Authors have equal contribution]***

[5] K Datta, **P Ghosh**, M A More, M D Shirsat and Ashok Mulchandani "Controlled Functionalization of Single Wall Carbon Nanotubes for Enhanced Ammonia Sensing- A Comparative Study" **J. Phys. D: Appl. Phys. 45 (2012) 355305 (8pp).** ***[First Two Authors have equal contribution]***

[6] Arti Rushi, K Datta, **P Ghosh**, Ashok Mulchandani, and M D Shirsat "Iron Tetraphenyl Porphyrin functionalized Single Wall Carbon Nanotubes For Detection of Benzene " **Materials Letters (Elsevier), 96, (2013), 38–41**

[7] Santosh B. Kadam, S. S. Hussaini, Kunal Datta**, Prasanta Ghosh** and Mahendra D. Shirsat "Effect of Poly (Toluene Sulphonic Acid) in Enhancing Durability of Poly (Pyrrole)/Poly (N-Methylpyrrole)/GOx Composite Glucose Biosensor", **International Journal of Material Science (IJMSCI), 2012, Vol 2, Issue 1, pp. 6-9.**

[8] S. B. Kadam, K. Datta, **P. Ghosh**, A. B. Kadam, P.W. Khirade, Vijay Kumar, R.G. Sonkawade, A.B. Gambhire, M. K. Lande, and Mahendra D. Shirsat "Improvement Of Ammonia Sensing Properties Of Poly(pyrrole) – Poly (N-Methylpyrrole) Composite By Ion Irradiation", **Applied Physics A; Volume 100, Number 4, (2010), 1083-1088**

[9] P. A. Savale, Kunal Datta, **Prasanta Ghosh** and Mahendra D. Shirsat**, "**Synthesis and characterization of POA-PVS-DBS, POA-PVS-pTS, POA-pTS-DBS co-dopants composite films: A comparative study", **International Journal of Polymeric Materials, Volume 59, Issue 2 February 2010, pages 87- 97.**

[10] Santosh B. Kadam, Kunal Datta, **Prasanta Ghosh**, Mahendra D. Shirsat, "Poly(Pyrrole)-Poly(N-Methylpyrrole) Composite Matrix For Amperometric Biosensor Design" **International Journal of Polymeric Materials, 60, 233-243, 2010**

[11] S.S. Hussaini, N.R. Dhumane, Kunal Datta, **P. Ghosh** and Mahendra D. Shirsat, "Growth and Characterization of Tri-Glycine Acetate(TGAc) non-linear optical crystal", **Bionano Frontier (Sepcial Issue- March 2010) 41-43.**

[12] N. R. Dhumane, S. S. Hussaini, Kunal Datta, **Prasanta Ghosh**, and Mahendra D. Shirsat, "Growth and Characterization of Nonlinear Optical Crystal Bis Thiourea cadmium chloride (BTCC) in presence of L-Alanine", **Journal of Pure Applied and Industrial Physics, 1(1), 45-52, 2010**

[13] Santosh B. Kadam, Kunal Datta, **Prasanta Ghosh**, Ankush B. Kadam and Mahendra D. Shirsat, " Electrochemical Synthesis and Characterization of P(Py)-P(NMP)/PVS, P(Py)-P(NMP)/pTS and P(Py)-P(NMP)/DBS Composite Films, **Journal of Pure Applied and Industrial Physics, 1(1), 93-100, 2010**

[14] H. J. Kharat, K. Datta, **P. Ghosh** and M. D. Shirsat "Towards Development of Optical Urea Biosensor Using Polypyrrole-polyvinyl sulphonate Film" **Sensors & Transducers, Vol. 101, Issue 2, (2009) 112-122.**

[15] D. B. Dupare, **P. Ghosh**, K Datta, A. S. Aswar and M.D. Shirsat**,** "Synthesis And Characterization Of A Novel Ammonia Gas Sensor Based On Pani-Pva Blend Thin Films", **Sensors & Transducers, Vol. 93, Issue 6, June 2008, pp. 103-113.**

[16] P. A. Savale, H. J. Kharat, K. Datta, **P. Ghosh** and M. D. Shirsat, "Development of POA/DBS/ GOx biosensor for the determination of glucose" **International Journal of Polymeric Materials, (2008) 57: 730-744.**

[17] K.P Kakde, H. J. Kharat, P.A. Savale, K. Datta, **P. Ghosh**, and M.D. Shirsat**,** "Development of ammonia sensor using Polyaniline film doped with polyvinyl sulphonic acid", **Mater. Sci. Res. Ind. Vol. 5(1), 150-155 (2008).**

[18] H. J. Kharat, K. P. Kakde, P. A. Savale, K. Datta, **P. Ghosh**, M. D. Shirsat Development of PPy-PVS optical fiber Ammonia sensor"

Optoelectronics and Advanced Materials – Rapid Communications, Vol 2, No.9 (Sept 2008) 553-560.

[19] K.P Kakde, H.J.Kharat, P.A. Savale, K. Datta, **P. Ghosh**, R.D. Mhaske and M.D.Shirsat, " Development of ammonia sensor using Polyaniline film doped with acrylic acid", **Mater. Sci. Res. Ind. Vol. 5(1), 137-140 (2008).**

[20] Kharat H J, Kakde K P, Savale P A**,** Datta K, **Ghosh P** and Shirsat M D, "Synthesis of polypyrrole films for the development of ammonia sensor" **Polymers for Advanced Technologies, Vol 18, 5, (2007), 397-402.**

[21] P.D. Gaikwad, D.J. Shirale, P.A. Savale, K. Datta, **P. Ghosh**, A.J. Pathan, G. Rabbani and M.D. Shirsat**, "**Development of PANI-PVS-GOD electrode by potentiometric method for determination of glucose" **International Journal of Electrochemical Science, 2 (2007)-488-497.**

[22] P.A. Savale, D.J. Shirale, K. Datta, **P. Ghosh** and M.D. Shirsat**,** "Synthesis and characterization of poly (O-anisidine) films under galvanostatic conditions by using ECP technique" **International Journal of Electrochemical Science, 2 (2007) 595-606.**

[23] K. P. Kakde, H. J. Kharat, P. A Savale, K. Datta, **P. Ghosh** and. M. D. Shirsat "A Novel Low Cost Plastic Optical Fiber Chemical Sensor Using Polyaniline Film, **Journal of Optoelectronics and Advanced Materials – Rapid Communications Vol. 1, No. 11, (2007) 601 – 608.**

- **<u>Research Papers Published in National Book</u>**

[1]. K. P. Kakde, H. J. Kharat, P. A. Savale, K. Datta, **P. Ghosh** and M.D. Shirsat, " Modified Cladding optical fiber chemical sensor using polyaniline doped with acrylic acid", **Frontiers of Microwaves and Optoelectronics (2008), 468-474, ISBN 978-81-89927-19-6.**

[2]. K. P. Kakde, H. J. Kharat, P. A. Savale, K. Datta, **P. Ghosh** and M.D. Shirsat, " Optical fiber chemical sensor based on polyaniline film", **Frontiers of Microwaves and Optoelectronics (2008), 507-513, ISBN 978-81-89927-19-6.**

- **Research Papers Published in International / National Conferences**

[1] Arti Rushi, Megha Deshmukh, Harshada Patil, Gajanan Bodkhe, Sumedh Gaikwad, **Prasanta Ghosh**, Kunal Datta and Mahendra D. Shirsat, " Comparative performance of Pristine and CoOEP functionalized SWNT based Methanol Sensor", **Proc. Of NCRTMPA-2014 organized by Shankarlal Khandelwal Arts, Science and Commerce college, Akola on March 19, 2014. (p. 52-56 ; ISBN 978-81-929160-2-6)**

[2] Megha Deshmukh, Harshada Patil, Arti Rushi, Gajanan Bodkhe, Sumedh Gaikwad, **Prasanta Ghosh**, Kunal Datta and Mahendra D. Shirsat, " Electrochemical Synthesis and Characterization of Poly-Aniline Carbon Nanotube Composite", **Proc. Of NCRTMPA- 2014 organized by Shankarlal Khandelwal Arts, Science and Commerce college, Akola on March 19, 2014. (p. 52-56 ; ISBN 978-81-929160-2-6)**

[3] A. Rushi, M. Deshmukh, H. Patil**, P. Ghosh**, K. Datta, Mahendra D. Shirsat "Defining a control over porphyrin functionalized SWNTs based OFETs" **Proc. Of Organic Devices: The Future Ahead (ODeFA) organized by BARC, Mumbai, 2014.**

[4] Arti Rushi, Kunal Datta, **Prasanta Ghosh** and Mahendra D. Shirsat, "Sensitive detection of Methyl Ethyl ketone at room temperature", **National Conference on Upcoming Trends in Chemical Science UTCS-2013**

[5] Kunal Datta**, Prasanta Ghosh**, Arti Rushi and M. D. Shirsat, **"**A Flexible Low Cost Polymeric Platform Immune to Humidity", **Proceedings of NANO INDIA -2013 held at National Institute for Interdisciplinary Science and Technology (CSIR-NIIST).**

[6] Mahendra D. Shirsat, Kunal Datta, **Prasanta Ghosh** and Sumedh D. Gaikwad and "Non Covalent Functionalization of Single Wall Carbon Nanotubes with Conducting Polymers: Towards A Rationalistic Sensing Paradigm" **Proceedings of International Conference on Advanced Materials Development and Performance (AMDP - 2011) held at University of Tokushima, Japan during July 15-18, 2011.**

[7] K. Datta**, P. Ghosh**, S. Gaikwad, S. Tarannum and M. D. Shirsat "Polymeric nanofibrillar matrix on ITO substrate for flexible chemical

sensing applications", **Proceedings Of International Conference On Nanoscience, Engineering & Advanced Computing (ICNEAC-2011)**

[8] **P. Ghosh**, K. Datta, S. Gaikwad, V. Kute and M. D. Shirsat, " Tailoring of poly (N-methyl pyrrole) thin film surface with Au nanoparticles for selective sensing of H_2S", **Proceedings Of International Conference On Nanoscience, Engineering & Advanced Computing (ICNEAC-2011)**

[9] H. J. Kharat, K. Datta**, P. Ghosh**, S. B. Kadam and Mahendra D. Shirsat, "Optical Fiber Biosensor for the detection of Urea", **Proc. Of International Conference on MEMS and Optoelectronics Technologies (ICMOT -2010) 153-158.**

[10] S. B Kadam, K. Datta, **P. Ghosh** and Mahendra D. Shirsat, "Synthesis of Polypyrrole – Poly (n-methylpyrrole) composite film for Biosensor applications" **Proc. Of International Conference on MEMS and Optoelectronics Technologies (ICMOT -2010) 124-127.**

[11] N. R. Dhumane, S. S Hussaini, **Prasanta Ghosh**, Kunal Datta, and Mahendra D. Shirsat, "SHG studies of Glycine doped Bis Thiourea Cadmium Chloride (BTCC) single Crystal : A Semi Organic NLO Material" **Proc. Of International Conference on MEMS and Optoelectronics Technologies (ICMOT -2010) 57-61.**

[12] S. S Hussaini, N. R. Dhumane, Kunal Datta, **P. Ghosh**, and Mahendra D. Shirsat, "Development of Novel Non-linear Optical Crystal of Tri-Glycine Acetate(TGAc)", **Proc. Of International Conference on MEMS and Optoelectronics Technologies (ICMOT -2010) 62-65.**

[13] H.J. Kharat, K. Datta, **P. Ghosh**, Santosh Kadam and Mahendra D. Shirsat, "Development of optical fiber chemical sensor for detection of ammonia", **Proc. of International Conference on Optics and Photonics (ICOP-2009) 141.**

[14] S.S. Hussaini, K. Datta, **P. Ghosh** and Mahendra D. Shirsat, "Growth and characterization of non-linear optics single crystal", **Proc. of International Conference on Optics and Photonics (ICOP-2009) 257.**

[15] M. D. Shirsat, Kunal Datta, and **Prasanta Ghosh**, "Fabrication of Conducting Polyaniline Nano Wires Electrode Junctions (CPNWEJs) for the development of Sensors", **Souvenir of National Conference on Nano Materials and nanotechnology (2007).**

[16] K. P. Kakde, H. J. Kharat, P. A Savale, K. Datta, **P. Ghosh** and M. D. Shirsat, "Synthesis of poly (aniline) film doped with acrylic acid as a primary dopant for the ammonia sensing" , **Abstract of International Conference Advanced Materials and Applications (ICAMA-2007), 53.**

[17] K. P. Kakde, H. J. Kharat, P. A Savale, K. Datta, **P. Ghosh** and M. D. Shirsat, "Synthesis of Poly (aniline) Nanowires for Ammonia Sensing", **Abstract of International Conference Advanced Materials and Applications (ICAMA-2007), 278.**

[18] H. J. Kharat, K. P. Kakde, P. A Savale, K. Datta, **P. Ghosh** and M. D. Shirsat, "Polypyrrole Film for the Development of Ammonia Sensor", **Abstract of National Conference on Advances Materials Science (AMS-2007), 40.**

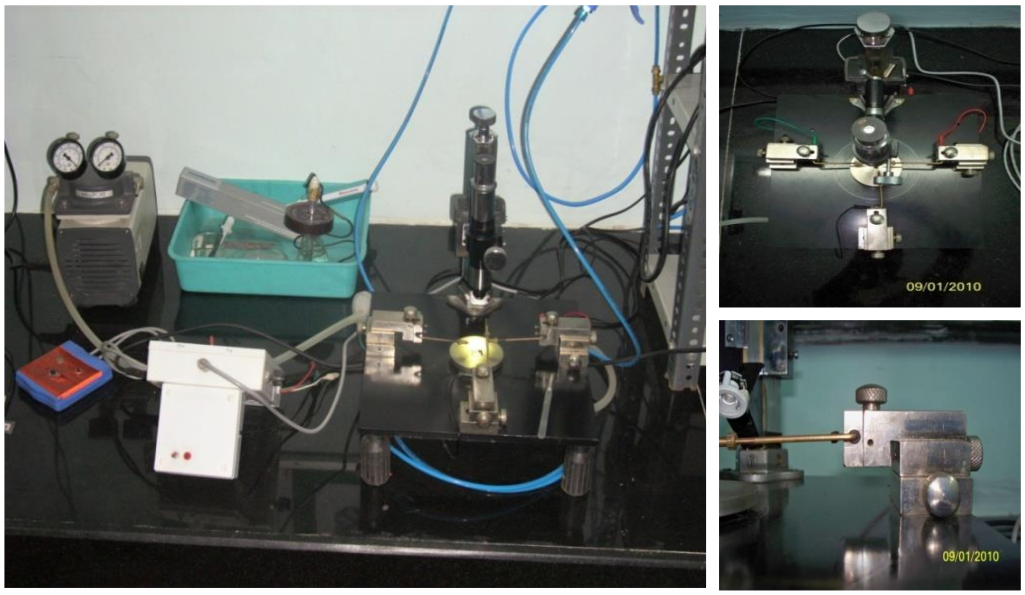
[19] K. P. Kakde, H. J. Kharat, P. A Savale, K. Datta, **P. Ghosh**, R. D. Mhaske and M. D. Shirsat, "Development of Ammonia Sensor using Poly (aniline) Film Doped with Acrylic Acid", **Abstract of National Conference on Advances Materials Science (AMS-2007), 41.**

[20] K. P. Kakde, H. J. Kharat, P. A Savale, K. Datta, **P. Ghosh**, R. D. Mhaske and M. D. Shirsat, "Development of Ammonia Sensor using Poly (aniline) Film Doped with Poly (vinyl sulphonic acid)", **Abstract of National Conference on Advances Materials Science (AMS-2007), 41**.

XIII. Photographs of Few Indigenously Designed and Developed Devices

(L) Control console and (R) Mother unit of Semi Automatic Vapour Phase Chemical Vapour Deposition Machine for synthesis of MWNTs and SWNTs (not in vapour phase); **[Design, Materialization and commissioning team: Dr. Kunal Datta, Dr. Prasanta Ghosh, Professor Mahendra D. Shirsat]**

DIPROBO-12, a robotic arm for automization of DIP Coating and SILAR process for deposition of thin films on flat substrates; (insets)(L) inside view of the power and driver console & (R) side view of the arm; the device is completely programmable through PC in Windows atmosphere. This is almost an indispensible entry-level equipment (yet with high accuracy) for laboratories working in material science. **[Design, Materialization and commissioning team: Ms. Arti Rushi, Dr. Kunal Datta, Dr. Prasanta Ghosh, and Professor Mahendra D. Shirsat]**



(Clock wise from left) Probe station with vacuum lock assembly; aerial view of probe station; a micropositioner; such devices are of absolute necessity for electrical characterizations at micron/submicron level in semiconductor industries **[Design, Materialization and commissioning team: Dr. Prasanta Ghosh, Dr. Kunal Datta and Professor Mahendra D. Shirsat]**

XIV. Few More Photographs of Indigenously Developed Labs & Devices

FTIR & UV Spectrophotometer Lab

Nanomaterials Synthesis & Processing Lab

Indigenously Designed & Developed Dynamic Gas Sensing Setup

Indigenously Designed Class 10000 Clean Room for Micron level Structure Fabrication