CurriculumVitae

Contact

Dr. Dhammanand Jagdeo Shirale
Head
Department of Electronics, School of Physical Sciences, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon MS 425001, India.
(In-charge: Nanostructured Materials Processing Research Laboratory,)

Phone:
+91 257-2257475

Email:
doe@nmu.ac.in
djshirale@nmu.ac.in
shiraledj@gmail.com

Website:
www.nmu.ac.in

Languages

English-Hindi-Marathi

Research Interest

Nano-Sensors
Nano-biosensors
Environmental analysis
conducting polymers
Embedded Systems

Dr. Dhammanand J. Shirale

M.Sc., NET, Ph.D., PDF (USA)

Education

Ph.D.: Electronics - (2006) Department of Physics, Dr. B. A. M. University, Aurangabad.

Master's Degree: Electronics Science - (2003) Department of Electronics, North Maharashtra University, Jalgaon.

Undergraduate: Electronics, Physics, Computer Science, - (2001) J.E.S. College, Jalna.

Experience

Teaching/Research

Head (1st Jan 2024 - Current):
Department of Electronics, School of Physical Sciences, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon (MS) India

Associate Professor (17th March 2025 - Till date):
Department of Electronics, School of Physical Sciences, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon (MS) India

Assistant Professor (24th Dec 2012 - 31st Dec 2023):
Department of Electronics, School of Physical Sciences, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon (MS) India

Sr. Assistant Professor (14th July 2009 - 20th Dec 2012):
Department of Physics, School of Advance Sciences, VIT University, Vellore (TN) India

Teaching

Lecturer (10th Jan 2007 - 12th Oct 2007):
Department of Electronics Engg., Marathwada Institute of Technology (MIT), Aurangabad (MS) India

Lecturer (11th July 2003 - 11th Sept 2003):
Department of Electronics, Shri Shivaji College of Science, Akola (MS) India

Research

Post Doctoral Researcher (1st Nov 2007 - 30th June 2009):
Chemical and Environmental Engg.and Center for Nanoscale Science and Engg., University of California, Riverside CA, USA

Project Fellow (19th Sep 2003 - 30th June 2006):
Department of Physics, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (MS) India

Teaching / Research Experience

Experience	Projects	Ph.D. Students	Publications	Conferences
15 Yr (Teaching)	04 (Completed)	04 (Completed)	43 (Journal)	25
20 Yr (Research)	01 (Ongoing)	04 (Working)	08 (Book Chapters)	

Research Activities

Research Area:
Nano-Structured Conducting Polymers for Nano-Sensors and Bio-Sensors. Supercapacitors and Energy Storage Devices

Number of Ph.D. Students (with name):

1. Dr. Yogesh Nakate (Completed 2022)
2. Dr. Rahul S Salunke (Completed 2022)
3. Dr. Vijay D Chaudhari (Completed 2024)
4. Mrs. Sarla Pawar (Completed 2025)
5. Miss. Nikita Wadodkar (Ongoing)
6. Mr. Sanjay Hundiwale (Ongoing)
7. Miss. Anjali Guruchal (Ongoing)

Number of Books Written:

1. Modern Physics- Prof. S. Kalainathan, Dr. D. J. Shirale et. al., RBA Publications – Chennai 2^{nd} Edition 2012
2. Materials Science- Prof. S. Kalainathan, Dr. D. J. Shirale et. al., RBA Publications – Chennai 2^{nd} Edition 2012

Number of Patent:
One Submitted

Research project Ongoing/completed:

1. Metal-oxide organic / non-organic framework foamed Binder less supercapacitor and energy storage device - Sanctioned by VCRMS, Kavayitri Bahinabai Chaudhari North Maharashtra University Jalgaon for Amount : 2.25 Lakhs - (2023-25) (PI)
   - (Ongoing)
2. Synthesis and characterization of electrochemical soil macronutrient (NPK) sensors and their feasibility study in Indian agriculture scenario - Sanctioned by RGSTC, Govt. of Maharashtra for Amount : 4 Lakhs - (2019-21) (PI)
   - (Completed)
3. Development of Single Conducting Polymer Nanowire - Chemiresistive Sensor for Heavy Metal Ion (Arsenic (III and V)) - Sanctioned by SERB DST India for Amount : 23.16 Lakhs - (2013-17) (PI)
   - (Completed)
4. An innovative interfacial control layer on Ge channel substrate for the effective Fabrication and integration of novel “Ge/ALD High-k/capping layer/ Metal (bilayer) Gate stacks” for future nanoelectronics applications - Sanctioned by Nanomission DST India for Amount : 50.66 Lakhs - (2012 - 15) (CO-PI)
   - (Completed)

Awards/Fellowships/prizes received

Research Award for Publication from Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon MS 425001

Research Award for Funding from North Maharashtra University, Jalgaon MS 425001

Active Research Publication Award from VIT University Vellore TN 2012

3^{rd} Prize for the poster presentation in CAMTech – India Medical Hackathon

Post-Doctoral Fellowship from the University of California – Riverside USA 2007 - 2009

Best Paper Award by IEEE Electron Device Society, July 2004

Project Fellowship 2003 -2006

Memberships

1. Life Member of Semiconductor Society of India
2. Member of “Centre for Infectious Diseases and Control (CIDC), VIT University - 2011”
3. Member of “Centre for Excellence in Nano-Composites (CENC) VIT University - 2010”
4. Member of “Center for Crystal Research Center (CRC) VIT University - 2012”
5. Member of Technical Committee in International Conference on Recent Trends in Advanced Materials (ICRAM-2012), 20^{th} -22^{nd} Feb 2012.

Administrative Work experience

1. Member of University Board of Studies in Electronics and Instrumentation, KBC North Maharashtra University, Jalgaon.
2. Member of “Academic Audit of SOPS” for documentation dated 20^{th} Feb 2019
3. Committee member of Avishkar at K. B. C. North Maharashtra University, Jalgaon
4. Committee member of online PhD Entrance test - 2017
5. Member of University Board of Studies, VIT University.
6. VIT Representative for VITEEE-2012 Entrance Exam
7. Course Co-coordinator for M.Sc. – Electronics subjects 1) VLSI design (ELS 602), 2) Introduction to communication systems (ELS 507), Electronics Instrumentation (ELS 601)
8. Lab In charge of M.Sc. Electronics Course and Co-In charge for B.Tech. Course at VIT University
9. Question paper setter COE Office, VIT University, Vellore
10. Member of Project Evaluation Committee
11. Committee member of M.Sc. syllabus setting and question paper setter COE office, VIT University

Working experience with international bodies/international exposures

1. Editor of MatSci Express, Ariston Publication, Columbus, OH 43202, USA
2. Guest Editor on Editorial Board of Frontier in Chemistry
3. Environmental Science and Technology, ACS Publication
4. International Journal of Hydrogen Energy, Elsevier
5. Material Science and Engineering, Trans Tech Publications, Switzerland
6. Applied Biochemistry and Biotechnology, Springer
7. Journal of Macromolecular Science, PAC, Taylor and Francis
8. IEEE Sensor Journal

Leadership experience

1. Member of Organizing Team of 30Hrs Hands on Training Course on ”Fabrication of Nanoscale Semiconductor Devices” Regularly conducted at Department of Electronics, KBC North Maharashtra University Jalgaon
2. Convener of One days National Seminar on Novel Materials and Devices for Interdisciplinary application held at School of Physical Sciences, KBC North Maharashtra University Jalgaon on 18^{th} Nov 2023

3. Co-Convener of Two days National Workshop on VLSI Cadence Tool held at Department of Electronics, KBC North Maharashtra University Jalgaon on 22-23rd March 2019
4. Chair the session in International Materials Science Conference – 2021 held at School of Physical Sciences, KBCNMU Jalgaon
5. Subject expert of Pre Ph.D. evaluation at Department of Electronics, KBC North Maharashtra University Jalgaon dated 1st Nov 2018
6. Subject expert of Pre Ph.D. evaluation at Department of Electronics, KBC North Maharashtra University Jalgaon dated 10th Aug 2018
7. Subject expert of Pre Ph.D. evaluation at Department of Physics, KBC North Maharashtra University Jalgaon dated 4th June 2018
8. Subject expert in evaluation of Ph.D. Thesis and conduction of Viva-Voce at Department of Physics, Dr. B. A. M. University, Aurangabad dated 15th March 2017
9. Coordinator of National Level Workshop on "Advances in Materials Processing" organized on 8th March 2014 under UGC-SAP
10. Coordinator for MILAAP – 2014 Alumni Meet

Serving on Editorial Boards

1. Editor of MatSci Express, Ariston Publication, Columbus, OH 43202, USA
2. Topic Editor in Frontiers in Chemistry Electrochemistry - (Research Topic) Nanomaterials based Electrochemical Sensors for Hazardous Pollutants Detection (shorturl.at/bnwzS)
3. Review Editor in Editorial board committee of Analytical Chemistry (http://community.frontiersin.org/people/DhammanandShirale/175255)
4. Reviewer Board of IJARAST (http://www.ijarast.com/index.php/reviewer-board)

Guest Lecture

1. Invited talk on "Nanotechnology" organized by Science Society and Department of Physics, Shankarlal Khandelwal Arts, Science and Commerce College, Akola on 12th October 2017
2. Guest Lecture on "How to write research project proposal" Organized by Shri Gulabrao Deokar College of Engineering, Jalgaon

Contribution to University/School/Department

1. BOS member in Electronics Science of SP Sanstha's S.N. Arts, D.J. M. Commerce and B.N.S. Science College, Sangamner.
2. Member of Research Advisory Committee of SOPS KBCNMU Jalgaon
3. Worked as Secretary in International Materials Science Conference – 2021
4. Member of Alumni Meet/Feedback Form/CBCS Syllabus Setting/ Exam coordinator/ Advanced and slow Lerner
5. Examiner of Cleanest hostel room contest – 14th Sept 2017
6. Chairman for Ph.D. Viva-voce Committee, SOPS, KBCNMU Jalgaon – 2016
7. External Examiner for Ph.D. Viva-voce at Department of Physics, Swami Ramanand Teerth Marathwada University, Nanded
8. Member/Coordinator of Exam Committee in the Department of Electronics
9. Member of setting up the syllabus of M.Sc. Electronics, KBCNMU Jalgaon

10. Member of Departmental profile update on University Website
11. Member of Paper setting committee of Pre-Ph.D. Course Work 2013
12. Member of Faculty Quarter maintenance committee – 2013 - 2014
13. Member of SAP DRS Phase – II Program committee
14. Served as Officials for R and D inputs for Collaborative R and D Portal 2014
15. Member of University NAAC Committee - 2014

Refresher / Orientation / Faculty development Program

1. Online Refresher Course on "MANAGING ONLINE CLASSES CO-CREATING MOOCs 10.0" at Teaching and Learning Centre, Ramanujan College, University of Delhi, during 13^{th} Dec 2021 – 27^{th} Dec 2021
2. Online Refresher Course on "Advanced Research Methodology Tool and Techniques" at Teaching and Learning Centre, Ramanujan College, University of Delhi, during 30^{th} Jan 2021 – 14^{th} Feb 2021
3. Faculty Development program under ERASMUS+ Co-funded CABCIN Consortia project 2018 at KBCNMU Jalgaon
    - Technology Allied Capacity Building in Higher Education: A Paradigm Shift dated 28^{th} March 2018
    - Diversity management at workplace in the context of HEI dated 19-20^{th} July 2018
    - Assessment and grading dated 29-30^{th} August 2018
    - Personal development and intellectual honesty dated 17-18^{th} September 2018
    - Leadership: Creating direction, Setting goals, Defining tasks dated 8-9^{th} October 2018
4. Refresher Course attended at University of Hyderabad, Hyderabad - 2017
5. One day workshop on URKUND – Anti Plagiarism Software – 2017 Orientation Course (4 week) held at JNU New Delhi – 2015
6. Faculty Improvement for Research in Science and Technology attend at School of Chemical Sciences, NMU Jalgaon - 2015.
7. Faculty development program for Global Business Foundation Skill Program (two week) organized by Infosys Pune - 2014

Any other activity done/going on

RELEVANT COURSEWORK/TRAINING

During Post Doc: Generation of Desire Pattern on Silicon Wafer Using Mask Aligner : Karl Suss MicroTec MA 6, Focused Ion Beam Mill : Leo 1540XB, E-Beam Evaporator : TemeScal BJD-1800, Reactive Ion Etcher : STS Multiplex RIE, Resist Coat Spin Station : Headway/SCE Fab to Spec, SEM/E-Beam Lithography : Leo 1550, Furnace (4 Tube) : CVD Equipment 4 Stack, Spin Coater, Optical Microscope : Hirox Video Microscope (KH-3000) and Nikon Eclipse L150, Kiethley 236 Source Measurement Unit, Hoike LCR Meter., National Instruments Network Interface (LabVIEW) for Gas Sensing.

During PhD: Optical Integrated Circuits and Systems, Polymeric Sensors, Proposal Writing, Thin Film Processing.

During MSc: Math. Methods for Electronics, Semiconductor Devices, Circuit Designing Techniques, VLSI Design Tools and Techniques, Digital Circuit Designing and Microprocessor Application, Industrial Instrumentation, Computer Methods and Computer Programming, Optoelectronics, Communication Electronics, VLSI Fabrication Techniques, Laser Physics.

TECHNICAL INSTRUMENTATION SKILLS

Analysis: Scanning Electron Microscopy (SEM), Fourier Transform Infrared Spectroscopy (FTIR), UV Visible Spectroscopy.

Etching and Deposition: Electron Beam Evaporator, Reactive Ion Etching, Spin Coating, Electrochemical Workstation.

Electrochemical Analysis: Semiconductor Parameter Analyzer, CH Instruments Electrochemical Workstation.

Others: Mask aligner/ Lithography system, Wire Bonding.

COMPUTER SKILLS

Lithography Mask design software: L- Edit
Programming: C, JAVA, Python, C++, Flash, SmartSEM, RemCOM, Origin,
Solid Modeling: AutoCAD, Rhino, trueSpace 7.6, Tanner EDA, Flash

Internationa and National Journal Publication

1. Sarla K Pawar, Nikita A Wadodk, Rahul Salunke, Amardip M Patil, Ahmad Umar, Ahmed A Ibrahim, Sheikh Ali Akbar, Sotirios Baskoutas, and Dhammanand J Shirale. Enhanced electrochemical detection of orthophosphate in potable water using zinc-cobalt oxide nanocomposite-modified nickel foam electrodes. Journal of The Electrochemical Society, 2024
2. SK Pawar, NA Wadodkar, RS Salunke, AM Patil, and DJ Shirale. Harvestguard: An eco-friendly electrochemical sensor for precise nitrate detection in soil using zinc oxide nanoparticles/pani composite decorated nickel foam electrode. In Annual meeting of the Asian Polymer Association, pages 159–170. Springer, 2024
3. Vijay D Chaudhari, Anil J Patil, Dhammanand J Shirale, Taha Raad Al-Shaikhli, A Vijaya Kumar, and B Eswaran. Improving traffic flow in smart cities with machine learning-based traffic management. In 2024 Ninth International Conference on Science Technology Engineering and Mathematics (ICONSTEM), pages 1–5. IEEE, 2024
4. Amardip M Patil, Dhammanand J Shirale, Harishchandra D Jirimali, and Ramanad N Jagtap. An a2+ cb2 approach to the synthesis of hyperbranched polyester polyol and application in pu coatings. Journal of Coatings Technology and Research, pages 1–11, 2024
5. Rahul S Salunke, Yogesh Nakate, Ahmad Umar, Amardip M Patil, Umesh Nakate, Sotirios Baskoutas, and Dhammanand J Shirale. Selective recognition of lead and cadmium in potable water using single polypyrrole nanowire decorated with cobalt oxide nanoparticles electrode. MatSci Express, 1(2):69–80, 2024
6. SK Pawar, NA Wadodkar, RS Salunke, AM Patil, and DJ Shirale. Eco-friendly electrochemical sensor for accurate soil nitrate detection using znox/pani nanocomposite on nickel foam electrode. MatSci Express, 1(03), 2024
7. Dhammanand J Shirale, Annamalai Senthil Kumar, and Huimin Zhao. Nanomaterials based electrochemical sensors for hazardous pollutants detection. Frontiers in Chemistry, 10:1129787, 2023

8. Yogesh T. Nakate, Sushil S. Sangale, Shoyebmohamad F. Shaikh, Nanasaheb M. Shinde, Dhammanand J. Shirale, and Rajaram S. Mane. Human urine-derived naturally heteroatom doped highly porous carbonaceous material for gas sensing and supercapacitor applications. Ceramics International, 2022

9. Yogesh T Nakate, Umesh T Nakate, RS Mane, and Dhammanand J Shirale. Natural coconut liquid derived nanosheets structured carbonaceous material for high-performance supercapacitors. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 626:127012, 2021

10. Rahul Salunke R. S. Mane Yogesh T. Nakate, Umesh T. Nakate and Dhammanand J. Shirale. "mn" incorporated coconut water derived carbon for supercapacitor application - iopscience. https://iopscience.iop.org/article/10.1149/2162-8777/ac2217, 2021. (Accessed on 09/28/2021)

11. Rahul S Salunke, Yogesh T Nakate, Ahmad Umar, Umesh T Nakate, Rafiq Ahmad, and Dhammanand J Shirale. Anodic stripping voltammetry analysis of gold nanoparticles functionalized one-dimensional single polypyrrole nanowire for arsenic sensing. Surfaces and Interfaces, 23:100895, 2021

12. Rahul S Salunke, Padmakar G Chavan, and Dhammanand J Shirale. Anodic stripping voltammetry studies of electrochemically engineered silver nanoparticles over single polypyrrole nanowire device for tracing of arsenic (iii): an environmental perspective. Nanotechnology for Environmental Engineering, 3(1):1–8, 2018

13. Rahul S Salunke, Chetan K Kasar, Mangesh A Bangar, Padmakar G Chavan, and Dhammanand J Shirale. Electrodeposition of gold nanoparticles decorated single polypyrrole nanowire for arsenic detection..... Journal of Materials Science: Materials in Electronics, 28(19):14672–14677, 2017

14. Vivekanand S Bagal, Girish P Patil, Amol B Deore, Prashant K Baviskar, Dhammanand J Shirale, and Padmakar G Chavan. Enhanced field emission properties from surface-modified 2d cd (oh) 2 nanocoins. Applied Physics A, 123(2):125, 2017

15. Shantanu Dixit, E Dhanumalayan, J Anandraj, Mayank Pandey, Girish M Joshi, N Madhu-sudhana Rao, S Kaleemulla, DJ Shirale, and M Teresa Cuberes. Resonance frequency, bandwidth and quality factor of varying grades of poly (tetrafluroethylene) films15. 2017

16. Reshma Rajan, N Arunai Nambi Raj, Asit Ranjan Ghosh, and Dhammanand J Shirale. Anti-typhi immobilized mwcnt-pani nano sensor for salmonella typhi detection. In International Conference on Advanced Nanomaterials & Emerging Engineering Technologies, pages 383–386. IEEE, 2013

17. Dhammanand J Shirale, Mangesh Bangar, Nosag V Myung, Wilfred Chen, Girish M Joshi, and Ashok Mulchandani. Prospective of conducting polymer nanowire for gas sensing application to its physical scaling. In Advanced Materials Research, volume 584, pages 224–228. Trans Tech Publ, 2012

18. Girish M Joshi, SM Khatake, and DJ Shirale. Effect of gamma-irradiation on admittance, suceptance and conductance of polyacrylonitrile gel. In Advanced Materials Research, volume 584, pages 511–515. Trans Tech Publ, 2012

19. Mangesh A Bangar, Dhammanand J Shirale, Hemant J Purohit, Wilfred Chen, Nosang V Myung, and Ashok Mulchandani. Single conducting polymer nanowire based sequence-specific, base-pair-length dependant label-free dna sensor. Electroanalysis, 23(2):371–379, 2011

20. Anti t7 immobilized single conducting polypyrrole nanowire for phage detection. https://www.ripublication.com/ijmer/ijmerv1n1_8.pdf. (Accessed on 07/14/2021)

21. Cristina García-Aljaro, Lakshmi N Cella, Dhamanand J Shirale, Miso Park, Francisco Javier Muñoz, Marylynn V Yates, and Ashok Mulchandani. Carbon nanotubes-based chemiresistive biosensors for detection of microorganisms. Biosensors and Bioelectronics, 26(4):1437–1441, 2010

22. Dhammanand J Shirale, Mangesh A Bangar, Miso Park, Marylynn V Yates, Wilfred

Chen, Nosang V Myung, and Ashok Mulchandani. Label-free chemiresistive immunosensors for viruses. Environmental science & technology, 44(23):9030–9035, 2010

23. Dhammanand J Shirale, Mangesh A Bangar, Wilfred Chen, Nosang V Myung, and Ashok Mulchandani. Effect of aspect ratio (length: diameter) on a single polypyrrole nanowire fet device. The Journal of Physical Chemistry C, 114(31):13375–13380, 2010
24. Mangesh A Bangar, Dhammanand J Shirale, Wilfred Chen, Nosang V Myung, and Ashok Mulchandani. Single conducting polymer nanowire chemiresistive label-free immunosensor for cancer biomarker. Analytical chemistry, 81(6):2168–2175, 2009
25. VK Gade, DJ Shirale, PD Gaikwad, PA Savale, KP Kakde, HJ Kharat, and MD Shirsat. Immobilization of god on ppy–pvs composite film for determination of glucose: A comparative study of phosphate and acetate buffers. International Journal of Polymeric Materials, 56(11):1051–1065, 2007
26. PA Savale, DJ Shirale, K Datta, P Ghosh, and MD Shirsat. Synthesis and characterization of poly (o-anisidine) films under galvanostatic conditions by using ecp technique. Int. J. Electrochem. Sci, 2:595–606, 2007
27. PD Gaikwad, DJ Shirale, PA Savale, K Datta, P Ghosh, AJ Pathan, G Rabbani, and MD Shirsat. Development of pani-pvs-god electrode by potentiometric method for determination of glucose. Int. J. Electrochem. Sci, 2:488–497, 2007
28. DJ Shirale, VK Gade, PD Gaikwad, PA Savale, and MD Shirsat. Galvanostatic deposition of poly (n-methylpyrrole) film with various dopants and co-dopants: A comparative study. Materials Letters, 61(6):1372–1375, 2007
29. VK Gade, DJ Shirale, PD Gaikwad, KP Kakde, PA Savale, HJ Kharat, BH Pawar, and MD Shirsat. Synthesis and characterization of ppy-pvs, p (nmp)-pvs and their copolymer ppy-p (nmp)-pvs films by galvanostatic method. Int. J. Electrochem. Sci, 2:270–277, 2007
30. VK Gade, DJ Shirale, PD Gaikwad, PA Savale, KP Kakde, HJ Kharat, and MD Shirsat. Influence of process parameters on the conductivity and surface morphology of polypyrrole films. International Journal of Polymeric Materials and Polymeric Biomaterials, 56(2):167–176, 2007
31. VK Gade, DJ Shirale, PD Gaikwad, KP Kakde, PA Savale, HJ Kharat, and MD Shirsat. Synthesis and characterization of ppy-pvs, ppy-pts, and ppy-dbs composite films. International Journal of Polymeric Materials and Polymeric Biomaterials, 56(2):107–114, 2007
32. Haridas J Kharat, Kishor P Kakde, Dhammanand J Shirale, Vikas K Gade, Pradeep D Gaikwad, Padmakar A Savale, and Mahendra D Shirsat. Designing of optical fiber sensing probe. Fiber and integrated optics, 25(6):411–422, 2006
33. PD Gaikwad, DJ Shirale, VK Gade, PA Savale, HJ Kharat, KP Kakde, and MD Shirsat. Immobilization of god on electrochemically synthesized pani film by cross-linking via glutaraldehyde for determination of glucose. Int. J. Electrochem. Sci, 1:425–434, 2006
34. VK Gade, DJ Shirale, PD Gaikwad, PA Savale, KP Kakde, HJ Kharat, and MD Shirsat. Immobilization of god on electrochemically synthesized ppy–pvs composite film by cross-linking via glutaraldehyde for determination of glucose. Reactive and functional polymers, 66(12):1420–1426, 2006
35. Dhammanand J Shirale, Vikas K Gade, Pradeep D Gaikwad, Padmakar A Savale, Kishor P Kakde, Haridas J Kharat, and Mahendra D Shirsat. Glucose oxidase immobilized on galvanostatically synthesized poly (n-methylpyrrole)/polyvinyl sulfonate film for determination of glucose. International Journal of Polymer Analysis and Characterization, 11(5):369–382, 2006
36. PD Gaikwad, DJ Shirale, VK Gade, PA Savale, KP Kakde, HJ Kharat, and MD Shirsat. Potentiometric study of polyaniline film synthesized with various dopants and composite-dopant: A comparative study. Bulletin of Materials Science, 29(4):417–420, 2006

37. DJ Shirale, VK Gade, PD Gaikwad, PA Savale, HJ Kharat, KP Kakde, AJ Pathan, and MD Shirsat. Studies of immobilized glucose oxidase on galvanostatically synthesized poly (n-methylpyrrole) film with pvs-nano3 composite dopant. Int. J. Electrochem. Sci, 1:62–70, 2006

38. DJ Shirale, VK Gade, PD Gaikwad, HJ Kharat, KP Kakde, PA Savale, SS Hussaini, NR Dhumane, and MD Shirsat. The influence of electrochemical process parameters on the conductivity of poly (n-methylpyrrole) films by galvanostatic method. Materials Letters, 60(11):1407–1411, 2006

39. PD Gaikwad, DJ Shirale, VK Gade, PA Savale, HJ Kharat, KP Kakde, SS Hussaini, NR Dhumane, and MD Shirsat. Synthesis of h 2 so 4 doped polyaniline film by potentiometric method. Bulletin of Materials Science, 29(2):169–172, 2006

40. PD Gaikwad, DJ Shirale, VK Gade, PA Savale, KP Kakde, HJ Kharat, and MD Shirsat. Optimization of various electrochemical process parameter for synthesis of polyaniline doped with inorganic supporting electrolyte on platinum substrate. Transaction of The SAEST, 41:52–56, 2006

41. DJ Shirale, VK Gade, PD Gaikwad, HJ Kharat, KP Kakde, PA Savale, SS Hussaini, NR Dhumane, and MD Shirsat. Synthesis of p (nmp) film for glucose oxidase electrode. Transaction of The SAEST, 40(4):128, 2005

Article Published in International Book

1. HarvestGuard: An Eco-friendly Electrochemical Sensor for Precise Nitrate Detection in Soil Using Zinc Oxide Nanoparticles/PANI Composite Decorated Nickel Foam Electrode
   S. K. Pawar, N. A. Wadodkar, R. S. Salunke, A. M. Patil D. J. Shirale, Polymers for Advanced Technology- Springer, Singapore -(ISBN: 978-981-97-7209-4) 17^{th} Dec 2024, Page No. 159–170

2. The sources of heavy metals, its impact on human life and the progress in electrochemical sensor
   R S Salunke, D J Shirale, Functionalized Nanomaterials Based Devices for Environmental Application – Series: Micro and Nano Technologies- 1^{st} Edition – Elsevier - (ISBN: 9780128222454) 6^{th} August 2021, Page No. 349-378

3. Influence of pH on Optical properties of conducting Polyaniline Film for Biosensor Applications
   D J Shirale, A S Bhalerao, H J Kharat, P D Gaikwad, K P Kakde, P A Savale, V K Gade and M D Shirsat, Microwaves and Optoelectronics, Anshan Tunbridge Wells, UK (ISBN : 9781904798439) (2006), 455-458

4. Optical Characterization of Polyaniline, poly (O-Toluidine) and their Composites Films for Biomedical applications
   P A Savale, D J Shirale, and M D Shirsat Microwaves and Optoelectronics, Anshan Tunbridge Wells, UK (ISBN : 9781904798439) (2006), 409-414

5. Effect of Electrolyte on Optical properties of Potentiostatic Electro-deposited conducting polymer films for Biosensor Applications
   P D Gaikwad, P A Savale, D J Shirale, H J Kharat, K P Kakde, V K Gade and M D Shirsat Microwaves and Optoelectronics, Anshan Tunbridge Wells, UK (ISBN : 9781904798439) (2006), 450-454

6. Influence of inorganic and organic supporting electrolytes on Optical Properties of Poly (O-anisidine) films for development of Biosensors
   V K Gade, D J Shirale, P D Gaikwad, H J Kharat, K P Kakde, P A Savale, and M D Shirsat Microwaves and Optoelectronics, Anshan Tunbridge Wells, UK (ISBN : 9781904798439) (2006), 459-462

7. Evanescent wave Biosensor using combination Tapered Optical Fiber Probe for Enhanced Signal Acquisition
   H J Kharat, D J Shirale, P D Gaikwad, K P Kakde, P A Savale, V K Gade and M D Shirsat

Microwaves and Optoelectronics, Anshan Tunbridge Wells, UK (ISBN : 9781904798439) (2006), 403-408

8. Optimization of Gold Films Thickness for Optical fiber chemical Sensor based on Surface Plasmon Resonance
   K P Kakde, D J Shirale, H J Kharat, P D Gaikwad, P A Savale, V K Gade and M D Shirsat
   Microwaves and Optoelectronics, Anshan Tunbridge Wells, UK (ISBN : 9781904798439) (2006), 445-449

Conference, Seminar, Workshop attended and Publication

1. Synthesis of zinc-cobalt oxide nanocomposite electrochemical sensor for the detection of orthophosphate in aqueous media
   Nikita A. Wadodkar, Rahul S. Salunke, Sarla K. Pawar, Amardeep M. Patil, and D. J. Shirale,
   2^{nd} International conference on "NanoMaterials and Sustainable Applications" NANOSA-2023 January 10^{th}- 11^{th}, 2023
2. Online Industry-Academic Conclave Under Business Polyclinic Programme Held by Scientific Jugad Funda at KBCNMU Jalgaon on 30^{th} Sept 2020
3. Online Learning : Live Classroom Teaching Platforms under Train the Teacher Training (TTT) Program held at KBCNMU Jalgaon during 24-27^{th} July 2020
4. Participated in two-day workshop on "Introduction to Robotics" conducted on 15-16^{th} March 2019 held at Indian Institute of Technology Bombay.
5. Participated in workshop on NAAC Awareness Programme (NAP) organized by Internal Quality Assurance Cell of KBC North Maharashtra University, Jalgaon on 17-18^{th} January 2019.
6. Participated in three-day incubator training bootcamp for setting up incubation center organized by Maharashtra State Innovation Society, held at University of Mumbai and Indian instate of Bombay on 17-19^{th} December 2018.
7. Tracing of Arsenic Concentration Level in Ground Water Using Electrochemical Deposition of Single Polypyrrole Nanowire Decorated with Gold Nanoparticles
   Rahul Salunke, Awais Husain, Vaibhav Borokar, and D. J. Shirale
   2^{nd} National conference on Innovation in chemistry-Laboratory to society (ICLS - 2018) Organized by School of Chemical Sciences, North Maharashtra University, Jalgaon
8. Determination of Arsenic Concentration using CNT/Ppy/Nano-Ag electrode as mediator
   Nikita Wadodkar, Rahul Salunke, Rakesh Borse, Dhammanand J Shirale
   National Conference on Electronic Materials Thin Films and Its Applications (CEMTF-2016) (PP51), page no. 54
9. Polypyrrole nanowire functionalized with gold nanoparticle sensor for arsenic detection
   Rahul Salunke, Shital Patil, Sneha Mahajan, Dhammanand J Shirale
   National Conference on Electronic Materials Thin Films and Its Applications (CEMTF-2016) (PP52), Page no. 54
10. Synthesis and Development of Electronics-Biosensor for the detection of Salmonella Typhi
    Reshma Rajan, Arunai Nambi Raj, D J Shirale
    Symposium at the Medical Hackathon, "CAMtech – India Medical Hackathon", organized by The International Consortium on Affordable Medical Technologys – CAMtech, in collaboration with VIT University, Vellore TN Nov 26, 2012
11. Temperature Logger using Pic Micro Controller
    Vivek G V, A Pavan Kumar Reddy, D J Shirale

4^{th} International Conf. on Science, Engineering and Technology (SET), VIT University Vellore TN, May 3-4 2012

12. Design of Software Defined Radio
Karthik R, V Bharadwaja, D J Shirale,
4th International Conf. on Science, Engineering and Technology (SET), VIT University Vellore TN, May 3-4 2012

13. Prospective of Conducting Polymer Nanowire For Gas Sensing Application to its Physical Scaling
Dhammanand J Shirale, Mangesh Bangar, Nosang V Myung, Wilfred Chen, Girish Joshi, Ashok Mulchandani,
Int. Conf. on Recent Trends in Advanced Materials (ICRAM-2012), VIT University Vellore TN, Feb 20-22nd 2011

14. Cobalt Oxide Decorated Carbon Nanotubes for Arsenic Detection
Jestin Varghese, Smitha Bhat, D. J. Shirale,
3 rd International Conf. on Science, Engineering and Technology (SET), VIT University, Vellore, Nov 17-18th 2011

15. Serial Port Based Data Acquisition System
Makesh. M, D. J. Shirale,
3rd International Conf. on Science, Engineering and Technology (SET), VIT University, Vellore, Nov 17-18th 2011

16. Electro-deposited polyaniline glucose sensor
Jestin Varghese, Reshma Rajan, D. J. Shirale,
2nd International Conf. on Science, Engineering and Technology (SET), VIT University, Vellore, Nov 17-18th 2011

17. Anti T7 immobilized single conducting polypyrrole nanowire for phage detection
D. J. Shirale,
ICETME, Thapar University Patiala, Punjab 2011

18. Single conducting polymer nanowire protein biosensor
M.A. Bangar, D. J. Shirale, C. Hangarter, W. Chen, N.V. Myung, A. Mulchandani,
AIChE Annual Meeting, Conference Proceedings 21 November, P1 2008

19. Development of P(NMP) based biosensor
D. J. Shirale, M. D. Shirsat,
Proc. of National Seminar on Biophysics, Feb, 6-8th 2007

20. Galvanostatic deposition of poly(N-methylpyrrole) film on platinum electrode
D J Shirale, V K Gade, P D Gaikwad, K P Kakde, P A Savale, H J Kharat, M D Shirsat,
Proc. of Recent Trends in Materials Science (RTMS), M-9 2006

21. Optimization of process parameters of chemically synthesized Polyaniline films for Ammonia Gas Sensing
K P Kakde, D J Shirale, H J Kharat, P D Gaikwad, P A Savale, V K Gade, M D Shirsat,
Proc. of National Seminar on Physics and Technology of Sensors, C-17 2006

22. Synthesis and characterization of polypyrrole films by galvanostatic method
V K Gade, D J Shirale, P D Gaikwad, K P Kakde, P A Savale, H J Kharat, M D Shirsat,
Proc. of Recent Trends in Materials Science (RTMS), M-25 2006

23. Optimization of parameters for the designing of evanescent wave biosensor
H J Kharat, D J Shirale, P D Gaikwad, V K Gade, P A Savale, K P Kakde, M D Shirsat,
Proc. of fourth DAE-BRNS National Laser Symposium (NLS-4) 756-758 2005

24. Optimization of evanescent field for the development of fiber optic biosensor
S R Sarda, D J Shirale, P D Gaikwad, V K Gade, M D Shirsat,
Proc. of XXX Optical Society of India (OSI) Symposium on Optics and Opto-Electronics (SOOP), 71-72

25. Optimization of fiber parameters for the development of fiber optics biosensors
S R Sarda, H J Kharat, K P Kakde, D J Shirale, P D Gaikwad, V K Gade, M D Shirsat,
Proc. of fourth DAE-BRNS National Laser Symposium (NLS-4), 797-799 2005