

Dr. Madhukar Zambare, Ph.D.

Present position

- Head and Professor

Contact Details (Mention e-mail) – fergusson.edu or despune.org



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Work Experience

- **Teaching:** 30 years
- **Research/Industrial:** 30 years

Personal Profile

- **Dr. M. S. Zambare** is Head and Professor of Electronic Science department at Fergusson College (Autonomous), Pune.
- He has experience of more than **30 years** teaching at Senior College: Under-graduate and post-graduate level and research in emerging areas of Electronics and Technology.

Course(s) Taught (Only Titles)

1. Power Electronics
2. Analog Electronics
3. Operational Amplifiers and its Applications
4. Sensors and Actuators
5. Industrial Automation
6. Semiconductor device technology

Field of Specialization/Areas of Interests

- Power Electronics
- Air and Water Quality monitoring
- Control Systems
- Industrial Automation
- Optoelectronics
- Material Science

Education

- **Ph.D. – (Electronic Science):** from 1988 to 1996
Title of the Thesis: Plasma Synthesis of Electron Beam Resists, their Characterization and Plasma Diagnostic by Langmuir Probe

Name of University / Institution: University of Pune
Year of Award : 1996
- **Master of Science – (Electronic Science):** year 1987
Pune University
- **Bachelor of Science- (Physics):** year 1985
SSGM College, Pune University, Place – Kopargaon, District: Ahmednagar

Fellowship/Awards/ Certifications/Achievements/Recognitions

1. Dr. R. Chandrashekhkar Memorial Prize 2011, Indian Physics Association (Pune Chapter), 5th September 2011, In recognition of contribution guiding project student.

Member of College Committees/ Professional Bodies and Others

College Level	Professional Bodies	Others
<ul style="list-style-type: none"> • Member Academic Council • Departmental Coordinator DBT Star Program 	Life Member, Society for Promotion of Excellence in Electronics Discipline (SPEED).	<ol style="list-style-type: none"> 1. Member of Board of Studies and Faculty of Science, Electronics, Rashtrasant Tukdoji Maharaj University, Nagpur (2005-2010). 2. Member of Board of Studies and Faculty of Science, Electronic Science, Pune University, Pune, (2011-16). 3. Member of Board of Studies, Electronic Science, Savitribai Phule Pune University, Pune, (Since 2018). 4. Member of Board of Studies, Electronic Science, New Arts, Science and Commerce College, Ahmednagar, (Since 2020). 5. Member of Board of Studies, Electronics, Bajaj college of Science, Vardha (Since 2020). 6. Member of Board of Studies, Electronic Science, S.P. College, Vardha (Since 2022). 7. Member, Research Advisory Committee, Dept. of Computer Science, Vishwakarma University.(Since 2018)

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Employment History

Example:

1) **Organization** : DES's Fergusson College

Role : as a teacher

Duration : 1992 – Till date

Responsibilities	<ul style="list-style-type: none"> • Head, Department of Electronic Science •
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2) **Organization** : NIL

Role : -----

Duration : -----

Responsibilities	<ul style="list-style-type: none"> • •
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Research Projects

Title of the Project	Name of Funding Agency	Amount (Rs)	Duration (Year) (From To)	Type (Minor/Major)	Outcome
<i>Energy Optimization and Power Scheduling Of Low Power Sensor Network</i> , Dr. M. S. Zambare.	BCUD, SPPU	Rs. 2 Lakh	2008-10	Minor	Completed
<i>Monitoring quality of food and fruit containers during storage using RFID and Wireless sensor network</i> , Dr. N. M. Kulkarni and Dr. M. S. Zambare.	BCUD, SPPU	Rs. 2.10 Lakh	2013-15	Minor	Completed
<i>Studying the impact of tree canopy on air pollution using Wireless sensor network</i> , Dr. M. S. Zambare and Dr. N. M. Kulkarni	UGC	Rs. 0.83 Lakh	2013-15	Minor	Completed

Kulkarni <i>Development of Reconfigurable Wireless Sensor Nodes For Water Quality Monitoring</i> , Dr. M. S. Zambare	BCUD, SPPU	Rs. 2.60 Lakh	2016-18	Minor	Completed
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Research Publications in National and International Journals

Year	Sr.	Title of the Publication	Name of Journal, Volume, Year, Pages, ISSN/ISBN number,
2019	1.	Sujaya Dasgupta, M.S Zambare , N.M. Kulkarni, and A.D. Shaligram <i>“Real Time Water Quality Monitoring System for Rivers”</i>	ACTA TECHNICA NAPOCENSIS Electronics and Telecommunications, ISSN 1221-6542 Volume 60, Number 2, 2019
2019	2.	Sujaya Dasgupta, M.S Zambare , N.M. Kulkarni, and A.D. Shaligram <i>“Real-Time Water Quality Monitoring System Analysis of Pashan Lake, Maharashtra, India”</i>	International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249-8958, Volume-8 ISSUE-6, August 2019
2019	3.	Sujaya Dasgupta, M.S Zambare , and A.D. Shaligram <i>“IoT Based Portable Water Quality Monitoring and Notification System”</i>	International Journal of Modern Electronics and Communication Engineering (IJMECE), ISSN:2321-2152, Volume No. 7, ISSUE No. -1, January, 2019
2018	4.	P.B. Koli, K.H. Kapadnis, U.G. Deshpande, U.J. Tupe, and M.S. Zambare <i>“Nano sized Semiconducting Stannous Oxide Thick Films Sensor for Some Oxidizing and Reducing Gases”</i>	International Refereed Research Journal: Researchers World-Journal of Arts, Science and Commerce, ISSN: 2231-4172, Vol. – IX, Special Issue, January 2018 [127]
2018	5.	U.J. Tupe, M. S. Zambare , P.B. Koli, and A.V. Patil <i>“Sensing Behaviour of Screen Printed Nanocrystalline Copper Oxide Thick Films in Presence of H₂S Atmosphere”</i>	International Refereed Research Journal: Researchers World-Journal of Arts, Science and Commerce, ISSN: 2231-4172, Vol. – IX, Special Issue, January 2018[53]
2018	6.	Fatemeh Shahlaei, M.S. Zambare , Niraj Bagh, Ramasubba Reddy Machireddy, and A.D. Shaligram <i>“Classification of Motor Imaginary Tasks Using Inter Trial Variance In The Brain Computer Interface”</i>	IEEE Instrumentation Society, 978-1-5386-3392-2/18, 2018.
2018	7.	K.A. Kulkarni, and Madhukar S. Zambare , <i>The Impact Study of Houseplants in Purification of Environment Using Wireless Sensor Network”</i>	Wireless Sensor Network, Scientific Research Publishing, ISSN Online: 1945-3086, ISSN Print:1945-3078, May 31, 2018
2017	8.	Sujaya Dasgupta, M. S. Zambare , and A. D. Shaligram	International Journal of Rough Sets and Data Analysis, Volume 4, Issue 3, July-September 2017.
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		<i>"IoT Setup for Co-measurement of Water Level and Temperature"</i>	
2017	9.	Kishori Kasat, Madhukar Zambare , Nitin Kulkarni and Jayant Khedkar <i>"Spectral Analysis of Vowels in Marathi Language using PRAAT software"</i>	International Journal of Innovations & Advancement in Computer Science IJIACS, ISSN 2347 – 8616, Volume 6, Issue 8, August 2017
2017	10.	Kishori Kasat, Madhukar Zambare , Nitin Kulkarni and Jayant Khedkar <i>"Acoustic Analysis of Throat Sounds in Marathi Language for the Purpose of Speech Recognition"</i>	International Journal of Innovations & Advancement in Computer Science IJIACS, ISSN 2347 – 8616, Volume 6, Issue 10, October 2017
2016	11.	K.A. Kulkarni, J.V. Khedkar, and M.S. Zambare , <i>"Modeling of vegetation effect on atmospheric CO₂ and O₂"</i>	International Journal of Advances in Engineering & Technology (IJAET), June 2016, Vol. 9, Issue 3, pp. 389-395, ISSN: 22311963
2014	12.	K. A. Kulkarni, N. M. Kulkarni, and M.S. Zambare <i>"Measurement of environmental parameters in a closed chamber using Wireless Sensor Node"</i>	Journal of Instrument Society of India (ISOI), ISSN: 0970-9983, Vol. 44, 2014, pp. 137- 140.
2014	13.	K.A. Kulkarni, D.P. Londhe, N.M. Kulkarni, A.D. Shaligram and M.S. Zambare <i>"Development of an embedded system for monitoring CO₂ and O₂ levels"</i>	SPEED Journal of Research in Electronics ISSN: 2349-8226, Vol. 1, Issue 1, 2012, pp.
2012	14.	K.A. Kulkarni and M.S. Zambare <i>"Use of gas sensor and wireless sensor network for the environmental parameter monitoring: current trends and challenges"</i>	International journal of Advances in Management, Technology & Engineering science Vol. I, issue 6(v) March 2012, ISSN: 2249-7455
2012	15.	Ms. Kishori Kasat and Madhukar Zambare <i>"Review on effective approach for speaker independent automatic speech recognition techniques for marathi languages"</i>	International journal of Advances in Management, Technology & Engineering science Vol. I, issue 7(II) April 2012, ISSN: 2249-7455
2000	16.	Supriya Kotasthane, A.S. Gaware, M.S. Zambare , and N.M. Kulkarni <i>"Development of a sensor monitoring system for CNC machines"</i>	J. of Instru. Soc. of India, vol.30, No.4, 257-261 (2000), ISSN: 0970-9983
2000	17.	Shubhangi Katti, J.V. Khedkar, S.P. Khedkar, M.S. Zambare , N.M. Kulkarni, and A.D. Shaligram, <i>"Design of optical fiber transmission system for an ellipsometer"</i>	J. of Instru. Soc. of India, Vol.30, No.4, 220-223 (2000), ISSN: 0970-9983
2000	18.	V.P. Labade, M.S. Zambare , N.M. Kulkarni, and A.D. Shaligram <i>"Design of Human machine interface (HMI) for vacuum deposition unit"</i>	J. of Instru. Soc. of India, Vol. 30, No.2, 90-95 (2000), ISSN: 0970-9983
2000	19.	A.S. Gaware, Supriya Kotasthane, M.S. Zambare , and N.M. Kulkarni <i>"Fabrication of simple low-cost pick and place type robotic system"</i>	J. of Instru. Soc. of India, Vol.29, No.2, 86-89 (2000), ISSN: 0970-9983
1999	20.	M.S. Zambare , N.D. Thakar, S. S. Bhagwat, N. M. Kulkarni, and A. B. Lele <i>"Design of low noise current amplifier for photo-multiplier tube"</i>	J. of Instru. Soc. of India, vol.29, No.1, 21 (1999), ISSN: 0970-9983

1999	21.	S.S. Bhagwat, M.S. Zambare , N.M. Kulkarni, A. B. Lele and A. D. Shaligram <i>“Design of low cost Lock in amplifier”</i>	J. of Instru. Soc. of India, vol.29, No.1, 18 (1999), ISSN: 0970-9983
1994	22.	Beena A. Kuruvilla, Madhukar Zambare , Suresh Gosavi, A. Datta, S.A. Gangal, and S.K. Kulkarni <i>“Analysis of PPMMA Films from Oxygen Plasma using X-Ray photoelectron spectroscopy”</i>	Journal of Polymer Science: Part A polymer chemistry, Vol. No. 32(1994), p2275-2281
1994	23.	Manoj Komath, Madhukar Zambare , S.A. Gangal, S.K. Kulkarni <i>“R.f. plasma-assisted deposition of diamond like carbon films from methanol-water vapour mixture”</i>	Dimond and related Materials 4 (1994)15-19, ELSEVIER
1992	24.	Zambare Madhukar , Gosavi Suresh, Gorwadkar Sucheta, Kuruvilla Beena, Kulkarni Sulabha and Gangal Shashikala <i>“Improvement in the sensitivity of PPMMA Electron Beam Resist by S and F Atom Doping”</i>	Jpn. J. Appl. phys. Vol.31(1992) pp. 2640-2643

Participation in Conferences/Seminars/Symposia/Workshop:

Year	Sr.	Title of Paper Presentation in Seminars/Conferences	Name and venue of the conference/Seminars with dates with ISSN/ISBN if any
2019	1.	Sujaya Dasgupta, M.S Zambare , N.M. Kulkarni, and A. D. Shaligram <i>“IoT Based Real-Time Water Quality Monitoring and Classification”</i>	Proceedings of IEPCCCT 2019, Innovation in Electrical Power Engineering, Communication and Computing Technology (2019), Springer, p661
2019	2.	Fatemeh Shahlaei, Niraj Bagh, M. S. Zambare , Ramasubba Reddy Machireddy, and A.D Shaligram <i>“Detection of Event Related Patterns using Hilbert Transform in Brain Computer Interface”</i>	IEEE Canadian Conference and Computer Engineering (CCECE), 978-1-7281-0319-8/19, (2019), Canada
2016	3.	Kalpna A. Kulkarni, N. M. Kulkarni, and M. S. Zambare <i>“Sensor Node Development for The Analysis of Plant Photosynthesis To Make Green And Clean Environment”</i>	Proceedings of National Conference Advanced Materials and Applications, 4th -5th March 2016, Physics Department, Fergusson College, Pune-411004, ISBN 978-93-5235-011-7.
2015	4.	Sujaya Dasgupta, N. M. Kulkarni, M.S Zambare , Varsh Sontakke, and A. D. Shaligram <i>“Simulation of Real world Analog to Digital Converter for Wireless Sensor Network using PSPICE”</i>	Proceedings of UGC and IEEE SSCS & CASS Sponsored National conference on Advances in Wireless Sensor Network and its Applications, A special Issue of Society for Promotion of Excellence in Electronics Discipline (SPEED) Journal of Research in Electronics (2015), pp215-218
2014	5.	K.A. Kulkarni, A.A. Deshpande, M.K. Mule and M. S. Zambare	18 th National Conference on Physics and Technology of Sensors (NSPTS), 6 th - 8 th March 2014, T.C. College, Baramati, Pune.

		<i>"Development of Embedded System for measuring CO Concentrations in rooms Gas Geyser"</i>	
2014	6.	K. A. Kulkarni, and M. S. Zambare <i>"Monitoring the environmental parameters in a closed chamber for the analysis of Air pollution for green and clean environment"</i>	1st National Conference on Energy and Environment (NC2E-2014) organized by School of Energy Studies and Department of Environmental Science, University of Pune, Maharashtra, 20- 22 February 2014, published in the proceedings of conference, ISBN: 978-93-83993-10-9, pp. 223- 224
2014	7.	J. V. Khedkar, S. P. Khedkar, and M. S. Zambare <i>"Mathematics for Electronics"</i>	National conference on Advances in Electronics and its interdisciplinary Application (NCAEIA-2014) on 19-20th September 2014, ISBN: 978-93-5174-7833, pp36-40
2014	8.	N.M. Kulkarni, Sujaya Dasgupta and M. S. Zambare <i>"Review paper on the next generation Wireless technologies"</i>	National conference on Advances in Electronics and its interdisciplinary Application (NCAEIA-2014) on 19-20th September 2014, ISBN: 978-93-5174-7833, pp120-125
2014	9.	Khandge Y.S., Tilekar R.T., Das Ritika and M. S. Zambare <i>"Implementation of real time audio effects on TMS320C6713DSK"</i>	National conference on Advances in Electronics and its interdisciplinary Application (NCAEIA-2014) on 19-20th September 2014, ISBN: 978-93-5174-7833, pp194-197
2014	10.	Kambale Panchasheela, Pawar B., Kabade K. and M. S. Zambare <i>"Modelling the digital system using Verilog and VHDL with specific case study"</i>	National conference on Advances in Electronics and its interdisciplinary Application (NCAEIA-2014) on 19-20th September 2014, ISBN: 978-93-5174-7833, pp149-152
2014	11.	Khandge Y.S., Tilekar R.T., Komal Deokar, Akshada Joshi and M. S. Zambare <i>"Implementation of DT filtes in real time on TMS320C6713DSK"</i>	National conference on Advances in Electronics and its interdisciplinary Application (NCAEIA-2014) on 19-20th September 2014, ISBN: 978-93-5174-7833, pp190-193
2014	12.	Kishori Kasat, Madhukar Zambare , J.V. Khedkar, and A.D. Shaligram <i>"Recognition of Vowel in Marathi Language, MFCC features using PRAAT"</i>	National conference on Advances in Electronics and its interdisciplinary Application (NCAEIA-2014) on 19-20th September 2014, ISBN: 978-93-5174-7833, pp184-186
2014	13.	Sujaya Dasgupta, N.M. Kulkarni, and M.S. Zambare <i>"An Overview of Wireless optical Communication"</i>	National conference on Advances in Electronics and its interdisciplinary Application (NCAEIA-2014) on 19-20th September 2014, ISBN: 978-93-5174-7833, pp228-232
2014	14.	K. A. Kulkarni, J. V. Khedkar, S. P. Khedkar, M. S. Zambare , and A. D Shaligram <i>"Mathematical modeling of variation of CO2 and O2 contents in a closed chamber due to vegetation"</i>	National conference on Advances in Electronics and its interdisciplinary Application (NCAEIA-2014) on 19-20th September 2014, ISBN: 978-93-5174-7833, pp-380
2013	15.	M.S. Zambare , N.M. Kulkarni, and A.D. Shaligram <i>"Audit of e-waste of Electronic Laboratories"</i>	National Conference on Hazardous e-waste Management, 23 rd & 24 th December 2013, Modern College of Art, Science & Commerce Pune
1992	16.	M.S. Zambare , S.W. Gosavi, S.M. Gorwadkar and S.A. Gangal Shashikala <i>"Dependence of electron beam sensitivity of PPMMA films on plasma Parameters"</i>	10 th International Symposium on Plasma Chemistry, Bochum, Germany, August 4 -9, 1991. pp2.3-19

Events Organized/Coordinated:

Sr. No	Name of the Event	Name of organizing Institute/ College/ University	Nature of contribution	Dates
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Additional skills/Activities

Social Activity

1. Worked as a **Presiding Officer** at the time of Corporation/ Assembly/ Loksabha Election (1998 Loksabha, 2009 Assembly/Loksabha, 2014 Assembly/Loksabha, 2017 Corporation, 2019 Assembly/Loksabha).

Extra-Curricular Activities at College level

1. Organization of Grand function of “An evening with past students” of the Department of Electronic Science, Fergusson College during **SILVER JUBILEE YEAR**. (2010)
2. Last 10 years working as an **In-charge of General Electronic Laboratory** in Fergusson College, Pune.
3. Worked as a Co-Ordinator for M.Sc. Electronic Science (till 2022).
4. Departmental Co-Ordinator, Department of Biotechnology DBT-STAR Scheme, Govt. of India, **Since 2014**.

Course Content Developed (e-content)

Development of e-content in 4 Quadrant of Five modules of **Paper - Power Electronics** for e-PG pathashala for PG Electronic Science 1. UGC sponsored Project under NEM-ICT of MHRD (2014-2018)

Five modules are Uploaded on epgp.inflibnet.ac.in

Consultancy Services