

# **Dr. Ashish A. Nimbekar, Ph.D. (Physics), B.Ed. SET**

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## **Present position**

- Associate Professor, Department of Physics, Fergusson College (Autonomous), Pune.

## **Contact Details (Mention e-mail) – [fergusson.edu](mailto:fergusson.edu) or [despune.org](mailto:despune.org)**



**020-67656064**



**[ashish.nimbekar@despune.org](mailto:ashish.nimbekar@despune.org), [ashish.nimbekar@fergusson.edu](mailto:ashish.nimbekar@fergusson.edu)**

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## **Work Experience**

- Teaching: 20 years

## **Personal Profile**

Presently, I am working as Associate Professor in the Department of Physics, Fergusson College (Autonomous) Pune. I have obtained an M. Sc. degree in Physics from the Institute of Science, Nagpur University, Nagpur, India in 2002 and Ph. D. degree in Physics in 2022 on the thesis entitled “Synthesis and Characterization of Plasma-assisted Conducting Polymeric Flexible Composites and Their Applications” under the guidance of Prof. R. R. Deshmukh, Department of Physics, Institute of Chemical Technology, Matunga, Mumbai, India. Main area of my research interest includes Smart textiles, Plasma surface modification, Flexible gas sensors.

## **Course(s) Taught (Only Titles)**

1. Waves-oscillations and sound
2. Electricity and magnetism
3. Optics
4. Mechanics and properties of matter
5. Acoustics, LASER, and fiber optics
6. Digital electronics
7. Solid State Physics
8. Electronic Instrumentation

## **Field of Specialization/Areas of Interests**

- Plasma surface modification
- Smart textiles
- Flexible gas sensors

## Education

- **Ph.D. (Physics):** from 2013 to 2022  
**Title of the Thesis:** “Synthesis and Characterization of Plasma-assisted Conducting Polymeric Flexible Composites and Their Applications.”  
**Name of University / Institution:** Institute of Chemical Technology (ICT), Matunga, Mumbai.  
**Year of Award:** 2022
- **Master of Science (Physics):** 2002  
The Institute of Science, Nagpur University, Nagpur.
- **Bachelor of Science (Physics, Chemistry, Mathematics):** 2000  
Jankidevi Bajaj College of Science, Wardha, Nagpur University, Nagpur.

## Fellowship/Awards/ Certifications/Achievements/Recognitions

1. Qualified State Eligibility Test (MH-SET) in Physical Science, accredited by U.G.C. & conducted by Savitribai Phule Pune University state Agency in March 2004.
2. Recognition as Permanent Post-Graduate (PG) Teacher of University of Mumbai from 2014.

## Employment History

- 1) **Organization:** Jankidevi Bajaj College of Science, Wardha.  
**Role:** Lecturer (clock-hour-basis) in Physics  
**Duration:** 1<sup>st</sup> August 2002 to 20<sup>th</sup> Sept 2004
- 2) **Organization:** The Institute of Science, Mumbai.  
**Role:** Lecturer (Contract basis) in Physics  
**Duration:** 21<sup>st</sup> September 2004 to 31<sup>st</sup> January 2005
- 3) **Organization:** DES's Kirti M. Doongursee College (Autonomous), Dadar (W), Mumbai.  
**Role:** Assistant Professor in Physics & Associate professor from 4 September 2021.  
**Duration:** 1<sup>st</sup> February 2005 to 4<sup>th</sup> November 2022
- 4) **Organization:** DES's Fergusson College (Autonomous), Pune.  
**Role:** Associate Professor (present designation)  
**Duration:** 5<sup>th</sup> November 2022 to till the date

## Research Projects

Title of the Project	Name of Funding Agency	Amount (Rs)	Duration (Year) (From To)	Type (Minor/ Major)
Synthesis and characterization of Conducting textiles.	University of Mumbai	Rs. 0.38 lacs	2014-2015	Minor
Synthesis of Conducting fabrics using plasma enhanced graft polymerization and their characterization for gas sensing application.	University of Mumbai	Rs. 0.30 lacs	2017-2018	Minor

## Research Publications in National and International Journals

1. **Ashish A. Nimbekar**, Rajendra R. Deshmukh, "Plasma surface modification of flexible substrates to improve grafting for various gas sensing applications: A review," IEEE Transactions on Plasma Science, 50 (6) (2022) 1382-1394; <https://doi.org/10.1109/TPS.2022.3148575>
2. **Ashish A. Nimbekar**, Pushpinder G. Bhatia, Rajendrasing R. Deshmukh, Ammonia sensors manufactured by plasma enhanced grafting of conducting polymers on nylon-6 fabrics, Synthetic Metals, 279 (2021) 116840; <https://doi.org/10.1016/j.synthmet.2021.116840>
3. **Ashish A. Nimbekar**, Rajendra R. Deshmukh, Plasma-induced grafting of polyaniline on polyester fabric for gas sensing application, J. Mater. Sci.–Mater. Electron., 32 (2021) 59-72; <https://doi.org/10.1007/s10854-020-04628-5>
4. **Ashish A. Nimbekar**, Rajendra R. Deshmukh, Plasma-Assisted Grafting of PPY on Polyester Fabric as Gas Transducer, IEEE Transactions on Plasma Science, 49 (2020) 604-614; <https://doi.org/10.1109/TPS.2020.3008331>

## Participation in Conferences/Seminars/Symposia/Workshop:

1. Poster entitled "Polypyrrole grafting on oxygen plasma-processed nylon 6 fabric for gas sensing application" in **International e-conference on "Advances in Plasma Science and Technology held on 27-29 May-2021** organized by Sri Shakthi Institute of Engineering and Technology, Coimbatore, India.
2. Participated in International material science e-conference-2021 organized by school of Physical sciences, KBCNMU, Jalgaon, India held from 18-20 March 2021.
3. Poster entitled "Plasma grafting of Polypyrrole on Polyester fabric as Gas sensor" in **Inter-national conference on "Advanced Functional Materials held on January 23-25, 2020**, organized by Kamala Nehru Mahavidyalaya, Nagpur, Maharashtra, India in association with ACT, HBCSE, TIFR, Mumbai.
4. Participated in four days **training programme on "Laboratory Management & Internal Audit as per ISO/IEC 17025: 2017**, conducted from 17-20 December 2019.
5. Oral presentation entitled "Oxygen plasma treated conducting PANI-polyester fabric as gas Transducer" in **National conference on "Recent Trends in Advanced Materials & their Applications, held on January 12, 2019**, jointly organized by K. M. D. College, Mumbai, and Luminescence society of India.
6. Oral presentation entitled "Pressure switch reaction of methane: A technique of tapping biomethane for commercial use" in **National conference on Innovative research in Humanities and Sciences-2018** held at A.I.J. College of Science, Murud Janjira on 15-16 April 2018.
7. Participated in the Workshop on "Plasma Processing of Materials" conducted on 21<sup>st</sup> September 2016, organized by Department of Physics, Institute of Chemical Technology, Matunga, Mumbai.
8. Participated in UGC sponsored one day State level seminar on "Basics of Nanomaterials and Nanotechnology-2013" organized by Dept. of Physics, KBP college, Vashi on 21<sup>st</sup> September 2013.
9. Participated in the National workshop on "Nanostructured Materials for Energy Devices and Environment" organized by Dept. of Physics and Centre for Nanosciences & Nanotechnology University of Mumbai on 17-18 August 2011.

10. Participated in the National seminar on “New Trends in Material Science” organized by Dept. of Physics, Arts, Science and Commerce college, Indapur, Pune on 11-12 February 2011.
11. Participated in UGC sponsored National seminar on “Innovations in Basic Sciences in the Realm of Modern Education System” organized by Jankidevi Bajaj College of Science, Wardha on 27-28 December 2008.

#### **Events Organized/Coordinated:**

<b>Sr. No</b>	<b>Name of the Event</b>	<b>Name of organizing Institute/ College/ University</b>	<b>Nature of contribution</b>	<b>Dates</b>
1.	National conference on “Recent Trends in Advanced Materials & their Applications	Kirti M. Doongursee College, Mumbai, and Luminescence society of India.	Organizing committee member	12 <sup>th</sup> January 2019

#### **Additional skills/Activities**

##### **Participation in Orientation/ Refresher courses:**

1. Participated in the **Orientation course** from 2<sup>nd</sup> July 2008 to 29<sup>th</sup> July 2008, sponsored by UGC-Academic Staff College, Nagpur University, Nagpur.
2. Participated in **Refresher course in Physics** from 16<sup>th</sup> November 2010 to 6<sup>th</sup> December 2010, sponsored by UGC-Academic Staff College, University of Pune.
3. Participated in **Refresher course in Physics** from 11<sup>th</sup> November 2013 to 1<sup>st</sup> December 2013, sponsored by UGC-Academic Staff College, University of Pune.
4. Participated in a UGC sponsored **Short term course in Research Methodology** from 24<sup>th</sup> June 2019 to 29<sup>th</sup> June 2019, at UGC-HRDC Dr. B. A. M. U., Aurangabad.
5. Participated in **One Week National Online Faculty Development Program** on ICT Tools for Effective Teaching Learning, from 11<sup>th</sup> May to 16<sup>th</sup> May 2020, sponsored by Swami Ramanand Teerth Marathwada University, Nanded.
6. Participated in **online Short-term Faculty Development Programme** on Effective ways to develop e-content for teaching learning sponsored by UGC-HRDC, University of Pune from 21<sup>st</sup> May 2020 to 30<sup>th</sup> May 2020.

Prepared by: **Dr. Ashish Nimbekar**  
 Date: **30<sup>th</sup> November 2022**