

Dr. Gauree Arolkar
Assistant Professor

Email: gaureearolkar@ternaengg.ac.in

Address for Correspondence:

B-204, Pavanputra CHSL, Dr. E. Borges Road, Parel, Mumbai-400012



Professional Qualification:

- **Ph.D in Physics, 2016**
Institute of Chemical Technology, Matunga
- **Master of Physics 2006**
Mumbai University, Maharashtra
- **Bachelor of Physics, 2003**
R. Ruia College, University of Mumbai, Maharashtra

Short Biodata:

I am Dr. Gauree Arolkar, Ph.D. (Physics) from Institute of Chemical Technology, Matunga & Mumbai University. I am currently working as Assistant Professor in Terna Engineering College, Nerul since 01 January 2019. I teach Engineering Physics as major subject to FE students. I had also taught Environmental Management to BE students. Along with teaching I had also served various duties at department and college level.

Patents/ Products/ Consultancy:

Products Developed:

-----NA-----

Patents:

1. -----NA-----

Consultancy Projects:

1. -----NA-----

Reviewer:

1. IEEE Transactions on Plasma Science
2. Xplore - The Xavier's Research Journal

Major Subjects:

- Physics

Citation Analysis:

208 citations (h-index 5 and i10-index 5) in google scholar

<https://scholar.google.co.in/citations?user=yLk-8dQAAAAJ&hl=en>

List of Publication:

Journal Publications:

1. **G. A. Arolkar**, Salgo M. J., K. N. Pandiyaraj, V. Kelkar-Mane and R. R. Deshmukh, "Effect of TEOS Plasma Polymerization on Corn Starch/Poly(ϵ -caprolactone) Film: Characterization, Properties and Biodegradation", RSC Advances, 2016, **6**: 16779 - 16789.
2. P. Mendhe, **G. A. Arolkar**, S. R. Shukla, and R. R. Deshmukh, "Low Temperature Plasma Processing for the Enhancement of Surface Properties and Dyeability of Wool Fabric", Journal of Applied Polymer Science, 2016, **133**: 43097
3. **G. A. Arolkar**, M. J. Salgo, V. Kelkar-Mane, R. R. Deshmukh, "The Study of Air-plasma Treatment on Corn Starch/Poly(ϵ -caprolactone) Films", Polymer Degradation and Stability, 2015, **120**: 262 – 272
4. R. R. Deshmukh, **G. A. Arolkar**, S. S. Parab, "Studies in Dielectric Properties of Various Polymers and its Correlation with Surface Free Energy", International Journal of Chemical and Physical Sciences, 2012, **1**: 40 – 47.
5. N. V. Bhat, A. N. Netravali, A. V. Gore, M. P. Sathianarayanan, **G. A. Arolkar** and R. R. Deshmukh, "Surface Modification of Cotton Fabrics Using Plasma Technology", Textile Research Journal, 2011, **81**: 1014 - 1026.

Conferences and Workshops Publications:

1. **G. A. Arolkar** and R. R. Deshmukh, "Surface Morphology and Barrier Properties of Plasma Processed Biodegradable Polymer (CSPCL) Films" (Conference Proceedings), **Proceedings** of 27th PSSI National Symposium on Plasma Science and Technology (Plasma-2012) on Challenges of Power Generation & Lighting 21st Century, ISBN: 978-93-82062-82-0, **IP32**, 227-231, 2013, Pondicherry University, Pondicherry, India.

Seminars/workshops/conferences:

- 1) Salgo Merin Ricki Elenjikamalil, **Gauree A. Arolkar**, R. R. Deshmukh, Varsha Kelkar-Mane, "Aiding Curative Remediation of Biodeteriorated Archival Paper Using Oxygen Plasma" oral presentation at **2nd international conference on Advances in Plasma Science and Technology (ICPST-21)** conducted during 27th-29th May 2021, Sri Shakthi Institute of Engineering and Technology, Chinniyampalayam, Coimbatore - 641062
- 2) **G. A. Arolkar**, Salgo M. J., V. R. Mane, K. N. Pandiyaraj and R. R. Deshmukh, "Surface Morphology and Biodegradation Study of Air Plasma Treated Biodegradable Polymer (CSPCL) Films", Poster presented at **National Conference on Advances in Plasma Science and Technology**, 19-21 February 2015, Department of Physics, Sri Shakthi Institute of Engineering and Technology, Chinniyampalayam, Coimbatore - 641062
- 3) **G. A. Arolkar** and R. R. Deshmukh, "Enhancing Barrier Properties of Biodegradable Films Using Nano Thin Film Coatings Deposited by Plasma Polymerization Technique", Poster presented at UGC Sponsored Two day **National Conference on Research Trends in Smart Materials - Igniting Young Minds**, 3-4 January 2014 held at Guru Nanak College of Arts, Science & Commerce, G.T.B. Nagar, Mumbai - 400037.
- 4) **G. A. Arolkar** and R. R. Deshmukh, "Surface Morphology and Barrier Properties of Plasma Processed Biodegradable Polymer (CSPCL) Films", Conference Proceedings & Poster presented at **27th PSSI National Symposium on Plasma Science and Technology on Challenges of Power Generation & Lighting 21st**

Century, 10-13 December, 2012, organized by Department of Physics, Pondicherry University, Puducherry - 605014, India.

- 5) K. N. Pandiyaraj, B. Shree Ram, C. P. Yoganand, **G. A. Arolkar**, R. R. Deshmukh, V. Uthayakumar, "Improvement of Surface and Antibacterial Properties of PET/TiO₂ Films Using Low Pressure RF Glow Discharge Oxygen Plasma", Poster presented at **27th PSSI National Symposium on Plasma Science and Technology on Challenges of Power Generation & Lighting 21st Century**, 10-13 December, 2012, organized by Department of Physics, Pondicherry University, Puducherry - 605014, India.
- 6) **G. A. Arolkar**, V. R. Mane and R. R. Deshmukh, "Corn Starch/Poly(ϵ -caprolactone) in Air Plasma: Surface Modification and Degradation Study", Oral presentation at UGC Sponsored Two Day **National Conference on "Recent Trends in Materials Research" (RTMR-11)**, 29-30 January 2011, Department of Physics, Birla College, Kalyan - 421304
- 7) **G. A. Arolkar** and R. R. Deshmukh, "Effect of Air Plasma on Adhesion and Mechanical Properties of CSPCL", Poster presented at One Day **Workshop Organized by Centre of Advanced Studies in Physico-chemical Aspects of Textiles Fibres, Dyes and Polymer**, 15th October 2010, ICT, Mumbai - 400019

Research and Scholarly Contributions:

- **Ph.D. Research:** 05 research papers, 01 conference proceedings
- **M. E. Research:** ---Na---

Funding Received:

TEQIP fellowship, UGC JRF and SRF received during Ph.D. research

Software Tools:

1. XPSPEAKFit4.1, WsXM, AFM Imager, ORIGIN, SAGEmath, MATLAB,
2. Microsoft office (Word, Excel, Power point)

Professional Association:

- INDIAN ASSOCIATION OF PHYSICS TEACHERS Life member
- INDIAN WOMEN SCIENTISTS' ASSOCIATION Life member

Experience:

➤ **TEACHING EXPERIENCE:**

◆ **Assistant Professor (Physics):**

- **Terna Engineering College, Nerul, Navi Mumbai**

01 Jan 2019-present

○ **Subjects:**

- Engineering Physics
- Environmental Management

▪ Usha Mittal Institute of Technology, Santacruz, Mumbai

○ Applied Physics

01 Aug 2017-

30 April 2018

➤ **RESEARCH EXPERIENCE:**

◆ **RF Plasma processing of materials:**

▪ **Gaseous plasma:**

- Altering wetting and adhesion properties of polymers for packaging applications
- Improving wetting and dyeing properties of textiles (cotton, wool, nylon)
- Abatement of micro-organisms from archival documents like Cellulose papers (Whatman & Bond)

▪ **PECVD:**

- Deposition of hydrophobic nano-coating:

to produce water-repellent fabric
to improve barrier properties of polymers for packaging applications
to deposit protective coating on archival documents

- Protective coating for archival documents

Cellulose papers (Whatman & Bond)

◆ **Evaluating Surface free energy using various methods:**

- To evaluate surface free energy and work of adhesion of material surface from contact angles of various liquids using:

Zisman method
Good-Girifalco method
FOWRK method
Neumann's method

◆ **Polymer nano-composite:**

Synthesis of polymer nano-composite films using solvent casting to study its tensile properties

Responsibilities Handled:

➤ **Department Level:**

- Timetable preparation
- ERP co-ordinator
- Pre-Engineering Foundation Program co-ordinator
- LMS subject in-charge and co-coordinator
- Lynxe subject in-charge
- ICT Usage & Daily lecture maintenance record

➤ **College Level:**

- CAP in-charge (FE)
- University Exam co-cordinator (Online mode)
- FC member
- NPTEL committee member
- Member of Industry Institute T&P committee, Industry Institute Innovation committee, Terna Training committee, SPOC Industry Alliance committee, Terna Virtual Learning committee, Academic Reinforcement committee.

Talks/Guest Lectures Delivered:

1.---NIL---

SESSION CHAIR/JUDGE:

1. Interviewer/Evaluator for Dr. Homi Bhabha Bal Vaidnyanik Competition
2. Primary Evaluator for Toycathon 2021, Ministry of Education's Innovation Cell and AICTE

Declaration

I hereby declare that the foregoing information are correct and complete to the best of my knowledge.

Dr. Gauree Arolkar

Place: Navi Mumbai