

## **DR. GAJANAN D. NAGARE**

A2-22, Kendriya Vihar, Sector No. 38,  
Nerul(W), Navi Mumbai, 400076.

Mobile: +91-9869913386/9833994760

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### **EDUCATION**

Indian Institute of Technology Bombay

**Ph.D. in Biomedical Engineering (TA Category)                      2004-2010**

Dissertation: "Design, Fabrication and Characterization of Guided Mode  
Resonance Filter based optical biosensors"

Government College of Engineering Pune

**M.E. in Instrumentation and Control                                      2000-2002**

Thesis: MC based Electro-pneumatic Traction System

Specialization: Biomedical Instrumentation

Gangamai College of Engineering, Dhule

**B.E. in Instrumentation    1996-2000**

Project: "PC based Diesel Generator monitoring"

### **AWARDS**

Nominated for Mother Teresa Sadhbhavna Award                      **January 2013**

For contribution in the field of Micro-Nano Science and Technology by Global Achievers  
Foundation, Delhi

### **HONORS**

**Research proposal reviewer by Manipal University, Dubai Campus, UAE, January 2014**

**Invited as a "Vice president" of Institute of Project Engineering, India, August 2013**

**Editorial Board Member in Innovare Journal of Engineering & Technology, July 2013**

**Invited reviewer for Nanoletters, Springer publication, January 2013**

**Nominated as "Active Researcher" in the area of nanoscience and technology by Department of Science  
and Technology, Govt. of India, November 2012**

**Postdoctoral fellow from University of Alberta, Canada, October 2010- June 2011**

**INUP- MEMS- Process Coordinator, IIT Bombay, India, July 2010 - August 2010**

### **PROJECT THROUGH INDIAN GOVERNMENT GRANT**

Title: Fabrication of single beam RF-MEMS, **May 2014**

Agency: Indian Nano-electronics User Program, **CEN-IIT Bombay.**

Title: Nano-materials for biosensing, **August 10, 2013**

Agency: Department of Biomedical Engineering & CEN, IIT Bombay.

Title: "Design & Micro-fabrication of RF MEMS Switch for Communication Application" **January 2013**

Agency: Indian Nano-electronics User Program, **CEN-IIT Bombay.**

## NATIONAL & INTERNATIONAL NANOTECHNOLOGY EXPOSURE

- Center of Excellence in Nano-electronics, IIT Bombay, India
- Center of Excellence in Nano-electronics, IISc Bangalore, India.
- Center of Excellence in Nano-electronics, TIFR Mumbai, India.
- SAMMER, Powai, IIT Bombay, India.
- C-MET, Pune, India.
- NanoFab, University of Alberta, Canada.

## ADDITIONAL RESPONSIBILITIES AND ROLE

- Convener for organizing the panel meet at University level for removal of biology for Biomedical Engineering admission, 2014.
- Convener for BioMEMS subject syllabus at University level, 2014.
- Setting up “ Bio-signal computational Laboratory” , 2014.
- Electronics Instrumentation laboratory development, 2013.
- Consultant to VIT: Working as consultant for VIT for making Kit for Electronics Instrumentation and Biomedical Instrumentation from 2011.
- Chief controller of Mumbai University Examination 2011
- BMESI Convener, VIT, 2011.
- ISTE Convener, VIT, 2011.
- National Level Conference paper reviewer for “Recent Advances and Challenges in Engineering and Management”, December 2011.
- MEMS Process coordinator, Indian Nanotechnology User’s program, IIT Bombay (2010)
- MEMS processes development for different projects of CMOS, FET, MOSFET, Solar cells, and multidisciplinary research.
- Student Lab-In-Charge, Centre for Nano-Electronics laboratory, IIT Bombay (2008-2009)  
It involved site preparation for new instruments, installation of newly arrived instruments, maintaining clean room discipline in the lab, updating the policies for the lab users, training newcomers in the laboratory, maintaining equipment and arranging for repairs and managing the man power to accomplish tasks.
- Research fellow, Centre of Excellence in Nanoelectronics, IIT Bombay (2008-2009)  
It involves process development and scheduling fabrication processes for the completion of time bounded research in different fields
- EBL expertise (2008-2009)  
e-LiNE system optimization at Center of Excellence in Nanoelectronics (IISc Bangalore)
- Volunteer for IWPSD conference held in IIT Bombay, (2007-2008)
- Library Secretary (2000-2002)  
Instrumentation and control Department in M.E at Government college of Engineering, Pune.

## RESEARCH SKILLS

### Nano-fabrication tools

Electron beam lithography (JEOL 6400, e-LiNE, Raith 150 and Raith 150TWO), optical lithography, reactive ion etching system, dielectric and metal sputter, hot-wire CVD, PE-CVD, ICP-CVD and thermal Evaporation system.

### Characterization tools

Scanning electron microscope, Ellipsometer, profilometer, atomic force microscope, fluorimeter, UV-VIS spectrometer, fluorescence microscope, Raman spectrometer, Mercury probe with IV setup, contact angle

### Simulation tools

CoventorWare and RSoft (DiffractMODTM and BeamPROPTM)

## PUBLICATIONS AND PAPERS (10)

### International conference (06)

Manoj Joshi, **Gajanan Nagare**, Seena V., V. Ramgopal Rao, Soumyo Mukherji, "Functionalization of Hydrogen Silsesquioxane (HSQ) surface for biosensor applications", Proceedings of the European Materials Research Society (EMRS) Spring Meeting, MAY 28 to JUNE 1, 2007, Congress Center - STRASBOURG (France)

**Gajanan Nagare**, Soumyo Mukherji, "Regeneration of bio-functionalized SOG Surface", 10<sup>th</sup> International Conference on Advanced Materials, IUMRS- ICAM October 8 to October 13, 2007, Bangalore (India)

**Gajanan Nagare** and Soumyo Mukherji, "Fabrication of GMR device using direct electron beam lithography on insulator", ECS conference, May 2011, Montreal, Canada

**Gajanan Nagare**, Soumyo Mukherji and Sushanta Mitra, "Photonic Crystal based Biosensor with inbuilt Nano-fluidics channels", ECS conference, May 2011, Montreal, Canada

Amey S. Revandkar, Ajitkumar R. Khachane, **Gajanan D. Nagare**, "Analyzing the Effect of Metals on the Dynamic Performance of RF MEMS Switch", International Conference on Electronics and Communication Systems (ICECS- IEEE14), February 2014.

Amey S. Revandkar, Ajitkumar R. Khachane, **Gajanan D. Nagare**, "Analyzing the Effect of Metals on the Dynamic Performance of RF MEMS Switch", "Recent Advances in Computers and Communications" (RACEM-14), April 2014.

### Published journal paper (04)

Amey S. Revandkar, Ajitkumar R. Khachane, **Gajanan D. Nagare**, "Optimization, analysis and design of RF MEMS bridge switch", IEEE Microwave and Wireless Components Letters, 2014 (under review)

Sahil Potnis, **Gajanan Nagare**, "Graphical User Interface in Matlab for Lithography in Microscale Devices", International Journal of Engineering Research and Technology, Vol 2, Issue 10, October 2013.

**G. Nagare**, S. Mukherji and S. K. Mitra, "Photonic crystal based biosensor with built-in nanofluidic channels", ECS Transactions, Vol. 35, pp. 91 – 95, 2011.

**Gajanan Nagare**, Soumyo Mukherji, "Characterization of silanization and antibody immobilization on spin-on glass (SOG) surface", vol. 255, Issue 6, 2009, Pages 3696-3700, Applied Surface Science.

### US Patents

Polymeric MZI design for higher sensitivity (Under review: 2010086) Double optical device for effective detection (Under review: 2011006)

## MEMBERSHIPS

Life time membership of ISTE-LM 80988

Biomedical Engineering Society of India- L1079