

**Kumar Gopinath Khandagle**  
Assistant Professor &  
VLSI Trainer

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## Education

Degree	College/ Board	Percentage/CGPA	Year
Ph.D.(Pursuing)	Sardar Patel Institute of Technology	Coursework SPI : 7.5	2018
M.Tech	Veer mata Jijabai Technological Institute	CGPI : 9.75 [Rank 1 <sup>st</sup> ]	2016
B.E.	R. C. Patel Institute of Technology	79.33 % [University Rank : 1 <sup>st</sup> ]	2013
H.S.C.	Mumbai Division Board	71.33 %	2009
S.S.C.	Mumbai Division Board	76.76 %	2007

## Engineering Entrance Exam Qualified

Exam	Marks	Branch	Year
Graduate Aptitude Test in Engineering (GATE)	<b>54.50</b>	Electronics and Communication(EC)	2014
Graduate Aptitude Test in Engineering (GATE)	<b>34.41</b>	Electronics and Communication(EC)	2016

## Experience

Position	Organization	From	To	Experience in years
Assistant Professor	Sardar Patel Institute of Technology, Mumbai	Jun 2017	Present	2 Years 5 Months
Research Scientist	Society for Applied Microwave Electronics Engineering & Research (SAMEER), IITB	Jul 2016	Jun 2017	1

## Professional Outputs

<b>Publications in last 2 Years</b>	<b>6</b>
<b>Total Publications</b>	<b>8</b>
<b>Sponsored R &amp; D Projects</b>	<b>1</b>

## Publications`

Sr. No.	Paper
1	D. P. Rathod, K. Khandagle, " <b>LDPC Codes for Error Control in Optical Discs</b> ," International Journal of Engineering Research, Issue 6, June 2016, ISSN 2321-1717.
2	Kumar Khandagle et. al., " <b>FPGA based Transmitter, Gradient and Receiver System</b> ," 2nd International Conference on Magnetic Resonance Imaging, Society for Applied Microwave Electronics Engineering & Research (SAMEER), May 2017.
3	K. Khandagle and S. S. Rathod, " <b>Implementation of MRI gradient generation system and controller on field programmable gate array(FPGA)</b> ," International Conference on Communication information and Computing Technology (ICCICT), Mumbai, 2018.
4	S. S. Rathod, K. Khandagle, Nikunj Parikh, " <b>Hardware Logic Debugging with Vivado IDE and Nexys 4 DDR</b> ," International Journal of Science and Research, Vol 8, Issue 9, 2019.
5	S. S. Rathod, K. Khandagle, " <b>Low Cost Network Management System for Water Quality Monitoring</b> ," International Journal of Science and Research, Vol 9, Issue 10, 2019.
6	S. S. Rathod, K. Khandagle, " <b>Design of Multi-channel Logic Analyzer with Nexys 4 DDR and LabVIEW GUI</b> ," International Journal of Engineering Research in Electrical and Electronic Engineering, Vol 5, Issue 11, 2019.
7	S. S. Rathod, K. Khandagle, " <b>Design and development of the FPGA IP's and LabVIEW based Neuron Spikes generation for Neuromorphic Circuits</b> ," International Journal of Engineering Research in Electrical and Electronic Engineering, Vol 5, Issue 12, 2019.

## Projects

- 1) Design of Software Tool-chain for modeling and simulating Lab-On-Chip Systems.
- 2) Designing of Timing and Signal Generation unit for Magnetic Resonance Imaging System.
- 3) Design of the Gradient Controller for Magnetic Resonance Imaging System.
- 4) Design of Digital to Analog Interface for generating Neuron Spikes with FPGAs.
- 5) Graphical User interface design for Distributed Temperature Sensing on LabVIEW
- 6) Low Cost 32-channel Logic Analyzer with FPGA.
- 7) Low Cost Real time monitoring system for Water Quality.

## Technical Proficiency

### Languages

VHDL, Verilog, Embedded C, Graphical Programming Language, Multiphysics Modeling, Latex

### Software

Xilinx ISE, Xilinx Vivado, Xilinx SDK, Xilinx HLS, IAR Embedded workbench, NI LabVIEW, Comsol, Proteus, NI Multism, Microsoft Office, Overleaf, Fusion 360

### Architectures experienced

Zynq 7200, Artix 7, Spartan 7, Kintex 7, Spartan 6, Spartan 3, Spartan 3AN, ARM cortex M0, 8051, Atmega 328

## Courses Completed

Sr. No.	Course Title	Organizer	Year
1	Consumer Electronic Product Design, Testing, Reliability and Patenting	Sardar Patel Institute of Technology	2019
2	Electronic Systems for Cancer Diagnosis	IISC Bangalore	2019
3	Autodesk Fusion 360 for Engineer	Autodesk Education	2019
4	Arduino Programming and Simulation without Coding	Udemy	2019
5	Tech Basics: Cables & Connectors	Udemy	2019
6	Oxford Instruments Workshop: Bringing the Nanoworld Together	IIT Bombay	2018
7	INUP Familiarization Workshop	IIT Bombay	2018
8	Introduction to FPGA's and prototyping with the Elbert	Udemy	2018
9	Industrializing Additive Manufacturing for Electronics through an Integrated, End-to-End Process	IEEE	2018
10	IC Design Process: A Beginner's Overview to VLSI Technology	Udemy	2018
11	Automotive: Reshaping Semiconductor Test	IEEE	2018
12	The Importance of Reducing Dust Accumulation in Electronics Systems	IEEE	2018
13	Detection of Signals in Noise	IEEE	2017
14	Mobile Web Technologies for the Developing World	IEEE	2017

## Member of College Organized Event

Sr. No.	Title	Sponsored	Year
1	Troubleshooting Competition	Electronics Engg Department	2019
2	Front End VLSI Design and Verification	AICTE	2019
3	Innovative Teaching Learning Practices to achieve Outcome based Education and Accreditation	AICTE-ISTE	2018
4	Technologies for Development of Rural Areas	AICTE	2017
5	2 <sup>nd</sup> International Conference on Magnetic Resonance Imaging	SAMEER	2017
6	3 <sup>rd</sup> International Workshop on Magnetic Resonance Imaging	SAMEER	2017
7	MiniProject I	Electronics Engg Department	2017

## Resource Person

Sr. No.	Title	Venue	Year
1	Front End VLSI Design and Verification	Sardar Patel Institute of Technology (AICTE sponsored)	2019
2	Consumer Electronics	Sardar Patel Institute of Technology (AICTE sponsored)	2019
3	Trends in LabVIEW Virtual Instrumentation	K. J. Somaiya Institute of Technology	2018

## Course Content Developed

Sr. No.	Course	Category
1	Verilog Programming I	SCOPE Course
2	Programming with FPGA Softcore Processor	SCOPE Course
3	LabVIEW Programming I	SCOPE Course
4	Programming NI-Elvis, Ni-MyDAQ, NI-MyRio with LabVIEW	SCOPE Course
5	Consumer Electronics	T.E. Electronics
6	HDL Programming Lab	S.E. Electronics

## Revenue Generation through SCOPE Course

Sr. No.	Amount	Course	Total Candidates trained
1	2,79,000	Verilog Programming I	93
2	72,000	LabVIEW Programming I	24
<b>Total</b>		<b>3,51,000</b>	

## Awards and Recognition

Sr. No.	Award	Organization	Year
1	Gold Medalist	Veermata Jijabai Technological Institute	2016
2	Gold Medalist	North Maharashtra University	2013
3	IEEE Conference Paper Reviewer	IBSSC 2019 / IEEE Bombay Section	2019
4	Vishwakarma Chhatra Award Regional Convention Selection	AICTE	2019
5	Elite Academicians	Texas Instruments	2019
6	Technical Mentor	Texas Instruments	2019

## Industrial Training Attended

Sr. No.	Title	Organiser	Year
1	WEBENCH	Texas Instruments	2019
2	Matlab On Ramp	Mathworks Inc.	2018
3	Fundamentals of Verilog and System Verilog	Mentor Graphics	2018
4	MSp430 Launchpad Workshop	Texas Instruments	2017

## Departmental Activities

Sr. No.	Title	Category
1	Higher Studies and Placement Co-ordinator	NBA & NAAC
2	Innovative Teaching and Learning Practices	NBA & NAAC
3	SCOPE Co-ordinator	SCOPE
4	Annual Student Program Exit Survey	Electronics Engg Department
5	Social Media Champion Committee	Electronics Engg Department
6	Linkedin Alumni Network Core Committee	Electronics Engg Department

## Poster Presentations

Sr. No.	Title	Event	Venue
1	Water Quality Monitoring	International Conference on Sustainable Solutions Implemented to Achieve Safe Drinking Water and Beyond	Bhavan's Research Center and Dept. Of Microbiology, Bhavan's College, NEERI and NSF International
2	Design of Gradient Controller on FPGA	International Workshop on Magnetic Resonance Imaging	SAMEER, IIT Bombay
3	Energy Storage with Adiabatic Air bags	Techfest International Student Conference	IIT Bombay

## Area of Interests

- 1) Microfluidics
- 2) Embedded System Design
- 3) Front End VLSI Design
- 4) Digital System Design
- 5) Biomedical Circuits
- 6) Water Quality Monitoring

## Subjects taught

- 1) Digital Circuits
- 2) Biomedical Electronics
- 3) Human Health Science approach
- 4) Consumer Electronics
- 5) HDL Programming Lab
- 6) Instrumentation Lab
- 7) Circuit Simulation Lab

## References

Title	Designation	Organisation	Contact
Dr. S. S. Rathod	Professor	S.P.I.T., Mumbai	Surendra_rathod@spit.ac.in
Dr. R. G. Sutar	Associate Professor	S.P.I.T., Mumbai	Rajendra_sutar@spit.ac.in
Dr. D. P. Rathod	Professor	V.J.T.I., Mumbai	dprathod@vjti.org.in