

Resume of Dr. Nagesh M

Dr. Nagesh M

Assistant Professor,
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Academic Qualifications:

Doctor of Philosophy (Ph.D)

Specialization: Solar cells, Thin Film fabrication and Characterization

Thesis title: Simulation and Fabrication of HIT Solar cells for enhanced parameters

Supervisors: Dr. Jayapal R, Professor & Former Principal, RVITM

Research Centre: RV College of Engineering, Bangalore

University: Visvesvaraya Technological University, Karnataka.

Year of Award: 2025

Master of Technology (M.Tech)

Specialization: Biomedical Signal Processing & Instrumentation

Institute: RV College of Engineering, Bangalore

Year of award: 2014

Grade: First class with Distinction

Bachelor of Engineering (B.E)

Specialization: Electronics and Communication Engineering

Institute: BNM Institute of Technology, Bangalore

Year of award: 2011

Certification:

Front end VLSI Design and Verification using System Verilog, VHDL using xilinx
14.7 at Maven Silicon, Bangalore (2011)

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EXPERIENCE DETAILS:

10 Years (6 Years Full time Research Experience & 4 Years Teaching)

Assistant Professor in Electronics & Communication Engineering Department at RV Institute of Technology and Management, Bangalore; 2022 to Present

Research Assistant, DST HIT Solar cell Project, R.V. College of Engineering, Bangalore; 2018 – 2021

Research Assistant, TEQIP-CoE, R.V. College of Engineering, Bangalore; 2016– 2017

Intern, Confident Electronics Pvt Ltd; 2014

Trainee, Maven silicon; 2012

- Front end VLSI Design and Verification using System Verilog, VHDL.

Skill Expertise:

Experimental Skills:

- Design, Simulation, Development & Characterization of Thin Film Electronics Materials, Biomedical Thin films and Solar Cells
- Thin Film Deposition:
 - Sputtering System: DC,RF Sputtering –TCO Optimization
 - Thermal Evaporation: Electrode Deposition
 - PECVD System: i-,p-,n- a-Si:H Semiconductor Layers
- Characterization & Testing:
 - I-V Measurement for Solar cell
 - Raman Spectroscopy,
 - Scanning Electron Microscope (SEM)
 - X-ray Diffraction (XRD)
 - UV-VIS Spectroscopy

Software Skills:

- Matlab, Simulink,
- Lumerical,
- NI Labview,
- Comsol Multiphysics,
- TCAD silvaco,
- xilinx 14.7
- Multisim
- Python_3.12
- Computer Vision
- AFORS HET Software

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Robotics: Designed and developed over 15 projects, including Robo Car development with control system integration and Android application development.

Artificial Intelligence & Deep Learning: Implemented multiple projects using Python, specializing in Computer Vision and deep learning module.

Arduino & IoT: Designed and implemented sensor integration projects using Arduino Uno and NodeMCU (ESP32) for IoT-based applications.

Resource Person for Various FDPs/SDPs:

- Conducted FDP on “**Robotics Skill Lab**” for RVITM Faculty on 10th May 2024
- Resource person for the 2- Days Student Development Program on "**Bots and Things: Workshop on Smart Robotics and IoT fusion**" held on 4th and 5th of January, 2024 in the Dept. of ECE, Dayananda Sagar College of Engineering, Bengaluru.
- Resource person for FDP on **IoT Technologies and Applications** 11th to 13th July 2024 in the Department of Electronics & Telecommunication Engineering, Bangalore Institute of Technology, Bangalore
- Keynote Speaker and Resource Person 3-day FDP on “**Hands-On Skill Development in Arduino Sensor Applications,**” held from 28th to 30th August 2025, organized by the Department of Mechanical Engineering, in association with the IIC Cell, Dayananda Sagar Institute of Technology, Bengaluru
- Keynote Speaker and Resource Person 3-day FDP on “**Hands-On Skill Development in Robotics Using Mobile Applications,**” held from 25th to 27th September 2025, organized by the Department of Mechanical Engineering, in association with the IIC Cell, Dayananda Sagar Institute of Technology, Bengaluru
- Resource person for 5-day Workshop on “**Modern solar PV Materials Fabrication and Simulation**” from 30th May 2016 to 4th June 2016 held at RV College of Engineering, Bangalore.

Technical Talk Delivered:

- Delivered Technical Talk on “**Robots in Manufacturing**” at Dayanand Sagar Institute of Technology for 3rd Year Mechanical Engineering-Diploma students on 25/09/2024
- Delivered Technical Talk on “**Biomedical Waste Management System**” at Dayanand Sagar Institute of Technology for 3rd Year Civil Engineering-Diploma students on 18/10/2024
- Delivered talk on “**Introduction to system Verilog**” during FDP on VLSI IC Design and Avenues of Interdisciplinary Research on 2nd March 2023 at RVITM

Technical Talks Organized:

- Organized an Alumni Talk on “Future-Ready Skills: Preparing for Tomorrow’s Industry” event for 3rd Semester ECE students on November 24th, 2025 at RVITM as the Alumni Coordinator.

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FDPs Organized:

- Two day Workshop on “**PCB Design & Fabrication-Hands on**” in association with Indian Tech-Keys on 21st and 22nd Oct, 24.
- Organized 5-Day Workshop on “**Thin Film Fabrication Techniques**” from 6th June 2016 to 11th June 2016 at IDRC, RV College of Engineering, Bangalore
- Organized 5-Day Workshop on “**Material Characterization**” from 13th June 2016 to 18th June 2016 at IDRC, RV College of Engineering, Bangalore

Conference Organized/ coordinated:

- Coordinated in conducting 2nd International Conference on Large Area & Flexible Microelectronics (**ILAFM 2016**) at R V College of Engineering, Bengaluru from 20th to 22nd Dec. 2016. The theme of the conference is "*Wearable Electronics*".
- Served as a **Session Chair** for International Conference on Digital Technologies and Engineering (ICDTE 2025), Organized by RVITM, 16th-17th October, 2025.
- Served as **Member of Organizing Committee** for International Conference on Digital Technologies and Engineering (ICDTE 2025), Organized by RVITM, 16th-17th October, 2025.

FDPs/Workshop Participated:

- Participated in a one-week Faculty Development Programme on “AI-Driven Image Intelligence: Advances in Processing and Learning” organized by E&ICT Academy IIT Guwahati in association with RV Institute of Management and Technology from 08th-12th September, 2025.
- Participated in 2 Day Conclave on "Excellence in Technical Training: Lessons from Industry" Organised by Centre of Educational Excellence and development (CEED) at KEA, Bangalore on 6th and 7th Feb '2025.
- Participated in 5 Day FDP on “SPARK-AI: Signal Processing, automation and Real time Communication using AI in electronic Design" Organized by Dept. of ECE, RV Institute of Technology and Management, Bangalore on 10th and 14th Feb 2025.
- Participated in 3 Day FDP on “Industry Driven FDP on PCB Design using Altium 365" Organized by K. S Institute of Technology, Bangalore on 27th and 28th Feb 2025.
- Participated in ONLINE (FDP) on ‘**Analytical Techniques for Nanomaterials**’-18th July - 25th July 2022 Organized by Electronics & ICT Academy, NIT Warangal [Sponsored by Ministry of Electronics and Information Technology, (MeitY), GOI] in association with JSS MAHAVIDYAPEETA, Mysore

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- Participated in the training program/FDP on “**Practical Aspects of ICT Tools & Online Teaching in current scenario**” Organized by Research Foundation of India, RFI-CARE & Arena Animation from 19th August to 25 August 2022.
- Participated in the training program/FDP on “**IoT-Hands on Training**” Organized by RV Institute of Technology from 3rd December to 4th December 2022.
- Participated in the Five Days training program/FDP on “**VLSI IC Design and Avenues of Interdisciplinary Research**” Organized by RV Institute of Technology from 27th February 23 to 3rd March 23.

Consultancy/Internship:

Organised summer Internship on “**Robotics for Beginners**” from 10th October to 31st October 2022

Courses Completed:

- Successfully completed a **Two-Week Online Course** in “**Artificial Intelligence**” organized by **SkillDzire** in collaboration with **AICTE**, held from 4th August 2025 to 16th August 2025. The course provided an in-depth understanding of AI concepts, tools, and applications, enhancing expertise in machine learning, intelligent systems, and emerging technologies.
- Completed technical Training on ‘From Classroom to cloud-Navigating the world of IoT Development using model Based Design’ from **MATHWORKS** on 21st September 2024
- Completed an online certified course titled “**Ultimate MATLAB-Simulink for Electrical Engineering**” in May 2025, offered by Udemy. The course focused on advanced simulation techniques and practical applications relevant to electrical and electronics engineering.
- Completed an online Certified Course on “**Altium 365 Training Bundle - 2024**” on May 2025 offered by Altium designer. The intensive course provided rigorous training in the organisation and stewardship of electronic-design libraries within the Altium 365 cloud.

LIST OF JOURNALS:

International Journal-11

- [1]. **Nagesh M**, Jayapal R, Suresh kumar, Prasad C D, Nataraj Vijapur et al. “Simulation-Driven Fabrication and Optimization of HIT Solar Cells using Nanocrystalline Silicon”, F1000Research (Q1 -Scopus), ACCEPTED.
- [2]. **Nagesh M**, Chaitra Ravi, M Shruthi, Druva Kumar S, Santhosh Kumar R, “Fabrication and Characterization of Electrospun Functionalized CNT-PVDF Nanofibers for Artificial Basilar Membrane design”, TPM-Testing, Psychometrics, Methodology in applied Psychology, Vol.32, No.S8, pp-1563-1570, 2025 (Q3).

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- [3]. Pavithra S, Kushi Agrawal, P Brunda Yadav, Anushka N S, **Nagesh M** “Implementation of Hybrid Asynchronous Analog-to Digital Converter”, International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE), Vol.14,Issue-6,June 2025, DOI:10.15662/IJAREEIE.2025.1406009
- [4]. P Brunda Yadav, Anushka N S, Pavithra S, Kushi Agrawal, **Nagesh M**,”A Review on Asynchronous Analog-to Digital Converter” Vol. 14, Issue 6, June 2025,DOI: 10.15680/IJRSET.2025.1406096
- [5]. **Nagesh, M.**, Jayapal R., Suresh, R. ‘Optimization Of Intrinsic And Doped Hydrogenated Amorphous Silicon Layers for Heterojunction Intrinsic Thin Solar Cells’. International Journal of Applied Engineering & Technology (London). vol. 5 no.4, pp.1809-1817, 2023. (Q4)
- [6]. **Nagesh, M.**, Suresh, R., Jayapal, R, K N Subramanya ‘Surface Passivation Studies of n- type Crystalline Silicon for HIT Solar Cells’ Transactions on Electrical and Electronic Materials, vol.23.no.1, pp. 45–51,2022. (Q3)
- [7]. Ranjitha R, T.K. Subramanyam, S. Pavan kumar, **Nagesh M** ‘Studies on DC Magnetron Sputtered AZO Thin Films for HIT Solar Cell Application’, Journal Of Nano- And Electronic Physics, vol. 12 No 2, pp.02037-02043,2020 (WoS).
- [8]. **Nagesh M**, Subramanyam T K ‘Sputtered Aluminum Doped Zinc Oxide Thin Films as Tco In Improving the Current Density (JSC) for Hit Solar Cell’ IJNIET-International Journal of New Innovations in Engineering and Technology, vol.12 no.1 pp.87-92 ,2019
- [9]. Dr. Sathesh Babu Gandla, **Nagesh M** ‘Effect of Sputtered Zinc Oxide as Anti Reflection Coating in Amorphous Silicon Solar Cell’, International Journal of Science and Research (IJSR), vol. 5 no. 2, pp.1376 – 1379,2016
- [10]. Uday, Jayaprakash Kanive, N K Jayashimhan, and **Nagesh M** ‘Design and Development Efficient Pressure Generating System at Expiratory End in a Bubble CPAP System’, International Journal of Innovation and Applied Studies, vol. 6 No. 3, pp. 414-419, 2014
- [11]. **Nagesh M**, Anand Jatti ‘Full Design and Developing Efficient Pressure Generating System at Expiratory End in a Bubble CPAP System’ International Journal of Scientific Research and Education (IJSAR) vol. 2 no.9, pp. 1880-1886, 2014.

National Journal-02

- [1]. **Nagesh M**, Anujeeth S Mirji, Likhith S, Poorna Chandra N, Vinodh Kumar S “Numerical Simulation of Silicon HIT Solar Cell”, Indiana Journal of Multidisciplinary Research,vol-4, no.3, pp.146-149, 2024
- [2].Kishan M, Veeresh J, Manoj J, Labya S, Nagesh M “IoT Based Automated Waste Segregation System” TIJER-International Research Journal, vol.10, no 7, pp.140-142.2023

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International Conference:02

- [1].**Nagesh M**, Jayapal R ‘Design and Development of Piezoelectric PVDF Sensor With Copper, Graphene, Cobalt With PMMA For Energy Harvesting’ *IEEE International Conference on The Confluence of Advancements in Robotics, Vision, and Interdisciplinary Technology Management*, Bangalore, November 28th-29th, 2023, **Best paper Award**
- [2].**Nagesh M**, T.K.Subramanyam ‘Preparation and Characterization of RF Magnetron Sputtered AZO Thin Films for a-Si:H Solar Cell Application’ *International conference on Nanomaterials and their applications*, Mysore, March,1-2, 2018

National Conference:02

- [1].Anujeeth S Mirji, Poorna Chandra N, Likhith S, Vinodh Kumar S, **Nagesh M** "Numerical Simulation of Silicon HIT Solar Cell", *National Conference on Digital Technology and Engineering*, Bangalore, May 2024
- [2].Kishan M, Veeresh J, Nagesh M “IoT Based Automated waste segregation system” National Conference on Digital Technology and Engineering”, Bangalore, April 2023.

Patent details:

“UV-VISIBLE SPECTROPHOTOMETER”, Dr. Nataraj V, Dr. S Satyanarayana Reddy, Dr. Venugopal B T, Dr. Nagesh M, Design No. 444284-001, Date of Issue: 26/03/2025 [published]

Teaching:

Core Courses handled:

- Network Analysis
- Control Systems
- Intro. To Electrical Engineering
- Microcontroller
- System Modeling using Simulink

Responsibilities:

Skill Lab Institutional VTU Coordinator:

- Design & Developed more than 20 Robotics projects for Skill Lab- Which will be given for all 4th Semester RVITM Students every year.
- Conducted Consultancy work by providing internship to 2021 Scheme students on Robotics for both Internal & External Students.
- Organizing & Conducting Workshops on Skill lab Sensors, IoT Based Skill Lab & Robotics & AI Lab for both Intra & Inter Institutions

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Awards:

- **Best Paper Presentation– IEEE International Conference** on “The Confluence of Advancements In Robotics, Vision, And Interdisciplinary Technology Management”, 2023
- Mentored students who secured **2nd Prize** at the State Level Inter-Collegiate Project Exhibition “PROTATVA – 2024” conducted by the Department of ISE, RV Institute of Technology and Management, Bangalore.