BRIJENDRA SANGAR

Assistant Professor at
GIET,KOTA(RTU)

Date of Birth: Oct. 2, 1984

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Interests

- 🎓 Robotics and Automation
- 🎓 Control and Instrumentation
- 🎓 Embedded Systems Design
- 🎓 Electric Vehicle
- 🎓 Power Electronics

Skills

Programming:

MATLAB	● ● ● ● ●
SCADA	● ● ● ● ●
Embedded C	● ● ● ● ○
Python	● ● ● ○ ○

Tools:

dSPACE	● ● ● ● ●
STM32	● ● ● ○ ○
ARDUINO	● ● ● ● ●
Raspberry Pi	● ● ● ○ ○

Working Experience

July, 2015 – ongoing	**Associate Professor**	**GIET,Kota(RTU)**
	Associate Professor of Electrical Engineering Department, Gurukul Institute of Engineering and Technology (Kota), Rajasthan Technical University.	
July, 2013 – July, 2015	**Assistant Professor**	**GIET,Kota(RTU)**
	Worked as an Assistant Professor for Electrical Engineering Department, Gurukul Institute of Engineering and technology (Kota), Rajasthan Technical University.	
Sep, 2009 – Feb, 2013	**Assistant professor**	**MIT,Kota(RTU)**
	Worked as an Assistant Professor for Applied Electronics and Instrumentation Department, Modi Institute of Technology (Kota), Rajasthan Technical .	

Education

Postgraduate Studies

2021 – 2025	**Ph.D. in Electrical Engineering (QIP)**	**DTU,Delhi (Formerly Delhi College of Engineering)**

Title: Performance Enhancement of Permanent Magnet Synchronous Motor (PMSM) for Electric Vehicle Applications.
Supervisors: Prof. Madhusudan Singh , Prof. Mini sreejeth
Grade: CGPA: 7.2

`EV` `PMSM` `ANFIS` `AC DRIVE`

2007 – 2009	**M.E. in Control and Instrumentation Engineering**	**Delhi College of Engineering,Delhi(Delhi,University)**

Title: Design and Implementation of PLC based Induction Motor Monitoring Control System .
Supervisors: Prof. Madhusudan Singh
Grade: CGPA: 6.7

`PLC` `SCADA` `AC DRIVE` `MOTORS`

Undergraduate Study

2002 – 2006	**B.E. in Electronic Instrumentation and Control Engineering**	**IET,Alwar(Rajasthan University)**

Project Title: Robotic Manipulator for four Legged Robot.
Supervisors: Dr. Neeraj Jain
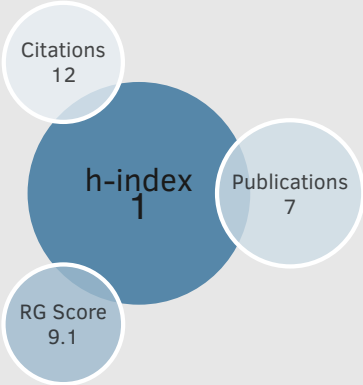**Grade:** CGPA: 6.8

Publications

Journals

- Sangar, B., Singh, M. and Sreejeth, M. An improved ANFIS model predictive current control approach for minimizing torque and current ripples in PMSM-driven electric vehicle. Electr Eng 106, 5897–5907 (2024). https://doi.org/10.1007/s00202-024-02346-3

- Sangar, B., Singh, M. and Sreejeth, M. Enhancing PMSM Drive Performance for Electric Vehicles Through ANFIS-HCC Integration. Arab J Sci Eng (2025). https://doi.org/10.1007/s13369-025-10509-y

- Sangar, B., Singh, M. and Sreejeth, M. Developing a Compact PMSM Drive with Integrated Charging Functionality for Electric Vehicle Propulsion. Iran J Sci Technol Trans Electr Eng (2025). https://doi.org/10.1007/s40998-025-00903-5.

- Sangar, B., Singh, M. and Sreejeth, M. Adaptive neuro- fuzzy sliding mode control for torque ripple mitigation in PMSM drives for electric vehicle. International Journal of Circuit Theory and Applications(2025),https://doi.org/10.1002/cta.70173.

- Sangar, B.,Ranjan,S., Singh, M. and Sreejeth, M. Torque Ripple Mitigation and Rotor Position Error Reduction in PMSM Sensorless Drives via ANFIS-SMO. Arab J Sci Eng, (Revision Submitted)
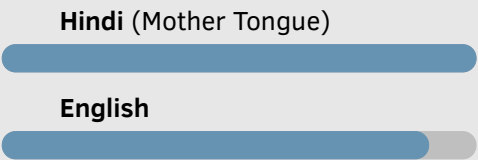
Conferences

- Sangar, B., Singh, M. and Sreejeth, M. Improving the performance of foc based PMSM drive by utilizing incremental encoder feedback. In 2024 IEEE Third International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES), 2024.

- Sangar, B., Singh, M. and Sreejeth, M. Implementation of a fractional order pid controller in a PMSM drive to reduce torque ripples. In First International Conference on Recent Advances IN Smart Energy System Intelligent Automation(RASESIA 2024), 2024.

Teaching Experience

Postgraduate Courses

DTU,Delhi	**Process Control**	2024-2025
	E-Mobilty, Electric Vehicle Fundamental, Industrial Automation ,PLC,SCADA,Instrumentation,Control of Chemical Process	
GIET,Kota	**Intelligent Control Systems**	2016-2018
	Fuzzy Logic Control, Neural Network Control, Evolutionary Algorithms and Genetic Programming.	
GIET,Kota	**Advanced Embedded Systems**	2017-2019
	Micro-controllers and Microprocessors Applications	

Undergradute Courses

GIET,Kota	**Embedded Systems**	2017-2021
	Micro-controllers and Microprocessors Applications	
GIET,Kota	**Control & Instrumentation**	2016-2020
	Transfer function, State-Space, First and Second Order Systems, Stability Analysis and Root Locus.	
GIET,Kota	**Digital Electronic**	2013-2019
	Gates,Encoder,Decoder,Timers,Counter	
GIET,Kota	**Electrical and Electronic Measurements**	2013-2019
	PMMC, Digital Instruments, Sensor and actuators.	
MIT,Kota	**Control & Instrumentation**	2009-2012
	Transfer function, State-Space, First and Second Order Systems, Stability Analysis and Root Locus.	

Other Training

Sept 19–23, 2022	**MATLAB and SIMULINK basics for Hardware Projects**	**NITTR, Chandigarh**
	Attended AICTE sponsored short term course (one week) on "MATLAB and SIMULINK basics for Hardware Projects" at NITTR Chandigarh	
May 02–06, 2022	**Basics of Hardware in Loop Simulation**	**NITTR, Chandigarh**
	Attended AICTE sponsored short term course (one week) on "Basics of Hardware in Loop Simulation" at NITTR Chandigarh	
June 25-29,2017	**Embedded System Design For IoT**	**IIT KANPUR**
	Attended AICTE sponsored short term course (one week) on "Embedded System Design For IoT at IIT, Kanpur	
Dec 9–15, 2014	**Advances in Solar Energy Technologies**	**IIT Delhi**
	Attended AICTE sponsored short term course (one week) on "Advances in Solar Energy Technologies" at IIT Delhi	

References

Ref. 1	**Prof. Madhusudan Singh**	EED,Delhi Technological Univ., Delhi
	madhusudan@dce.ac.in	
Ref. 2	**Prof. J.N.Rai**	EED,Delhi Technological Univ., Delhi
	jnrai@dce.ac.in	
Ref. 3	**Prof. Vivek Shrivastava**	EED,NIT,Uttrakhand
	shvivek@nituk.ac.in	