Dr. Yogesh Singh

Assistant Professor NIT Silchar



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Email: yogesh@mech.nits.ac.in

OBJECTIVE

Highly Self-motivated, Versatile and Logical thinking person seeking an excellent opportunity/a challenging area to apply existing skills, and to continue the learning and providing positive growth for my organization.

EDUCATION

Program	Institution	% / CGPA	Year of completion
PhD in Engineering Design	Indian Institute of Technology Indore	9.45	2016
M. Tech in Machine Design	National Institute of Technology, Rourkela	9.21	2012
B E in Mechanical Engineering	Government Engineering College, Jagdalpur	7.8	2008
XII	St. Joseph Higher Secondary School, Jairamnagar	72	2002
Х	St. Joseph Higher Secondary School, Jairamnagar	75.4	2000

RESEARCH AREAS AND WORK:

- Design and development of planar parallel manipulator
- Design and development of shape memory alloy actuation techniques
- Design and development of compliant mechanism
- Design and development of Micro-stereolithography mechanism
- Design and development of micro milling machine
- Design and development of lower limb rehabilitation robotic device
- Design and development of AUMS
- Design and development of mobile robotic manipulator system

POSITIONS OF RESPONSIBILITY

- Teaching assistant for kinematics and dynamics of machine lab in the Discipline of Mechanical Engineering at Indian institute of Technology Indore. (July, 2012 to Dec. 2016)
 Serier Descents Follow position at UT Indexs for a planer percent series based continue milling machine
- Senior Research Fellow position at IIT Indore for a planar parallel manipulator based vertical milling machine research work. (May, 2016 to Dec. 2016)

•	Member of Hindi Committee at NIT Silchar	(Jan, 2019 to till today)
•	Departmental Placement Coordinator at NIT Silchar	(July 2020 to till today)
•	Convenor of Departmental Infrastructure Committee at ME department of NIT Silchar	(Oct 2024 to till today)
•	Laboratory Incharge of Dynamics & Machinery Lab at ME department of NIT Silchar	(July 2020 to till today)

Developed Advanced Robotics Research Laboratory at NIT Silchar (July 2022 to till today) Organizing Secretary, 6th International Conference on Recent Advancements in Mechanical Engineering (ICRAME 2025) from 28th Feb-2nd March 2025 Joint Organizing Secretary, 5th International Conference on Recent Advancements in Mechanical Engineering (ICRAME 2024) from 2-4 Feb 2024 Joint Organizing Secretary, 3rd International Conference on Recent Advancements in Mechanical Engineering (ICRAME 2022) from 4-6 Feb 2022 Joint Organizing Secretary, 2nd International Conference on Recent Advancements in Mechanical Engineering (ICRAME 2021) from 7-9 Feb 2021 General Secretary of NIT Silchar Teachers' Association (March 2023 to April 2025) **Ex-officio of NIT Silchar Teachers' Association** (April 2025 to till today) Member of Capacity Building for Design & Entrepreneurship (CBDE) at NIT Silchar (January 2025 to till today)

PROFESSIONAL EXPERIENCE

Assistant Professor in Mechanical Engineering Deptt. of NIT Silchar, Assam	(July, 2018 to Cont.)
SERB International Post Doctoral Fellow at Hanbat National University, South Korea	(Jan, 2024 to July 2024)
Research Assistant Professor in Mechanical Engineering Department of SRMIST, Chenna	ai (Jul., 2017 to July, 2018)
Post-doctoral Fellow in Mechanical Engineering Department of IIT Bombay, MH	(Jan., 2017 to July, 2017)
PhD scholar in Mechanical Engineering Department of IIT Indore, MP	(July., 2012 to Dec, 2016)
Lecturer in Mechanical Engineering at Government Engineering College, Bilaspur.	(Sept., 2009 to Dec, 2009)
Lecturer in Mechanical Engineering at Government Polytechnic College, Korba.	(March, 2009 to June, 2009)

SCHOLASTIC ACHIEVEMENTS

- Secured First rank in BE Mechanical Engineering at Government Engineering College Jagdalpur, Chhattisgarh
- Secured Second rank in M Tech Machine Design at NIT Rourkela, Odisha
- Awarded MHRD India fellowship from July 2012 to June 2016 for pursuing Ph.D. at IIT Indore
- Awarded CSIR SRF FELLOWSHIP at IIT Indore from July 2016 to December 2026
- Awarded IIT Bombay Institute Post Doctoral fellowship from Jan 2017 to July 2017
- Awarded SERB SIRE fellowship to visit Hanbat National University, Daejeon, South Korea from Jan 2024 to July 2024

ACADEMIC PROJECTS

٠	PhD Level: Performance investigations on mechanical design and motion	control of planar parallel
	manipulators.	(July 2012 to Dec 2016)
•	PG Level: Free vibration analysis of the laminated composite beam with variou	s boundary conditions.
		(July 2011 to June 2012)
٠	UG Level: Development of the bladeless turbine (Tesla Turbine).	(July 2007 to June 2008)

PROFESSIONAL MEMBERSHIP

IEEE Robotics and Automation Society Membership

- Robotics and Robot Applications
- Robotic Control Systems
- Engineering Mechanics
- Theory of Machine and Mechanism
- Dynamics of Machinery
- Machine Design
- Measurement and Instrumentation
- CAD/CAM automation

PROFESSIONAL SKILLS

- Matlab, Simulink, LabView
- AutoCAD, SolidWorks, CATIA
- Kinematics and Dynamic modelling
- Control System
- Robot Operating System, Python
- Mathematica, Maple
- Latex, Word, Excel, Origin, Powerpoint, Linux, C/C++
- MSC Adams View, Nastran, Patran, ANSYS, Workbench

NUMBER OF PUBLICATIONS

International Journals: 22 International conferences :30 Book chapters:18 Patents: 03 (granted), 07 (filed and published)

PUBLICATIONS (JOURNALS, CONFERENCES, BOOK CHAPTERS) JULY 2012 ONWARDS

- Vinoth, V., Yogesh Singh, and M. Santhakumar. "Indirect disturbance compensation control of a planar parallel (2-PRP and 1-PPR) robotic manipulator." Robotics and Computer-Integrated Manufacturing 30, no. 5 (2014): 556-564. DOI: 10.1016/j.rcim.2014.03.010
- Singh, Yogesh, and M. Santhakumar. "Inverse dynamics and robust sliding mode control of a planar parallel (2-PRP and 1-PPR) robot augmented with a nonlinear disturbance observer." Mechanism and Machine Theory 92 (2015): 29-50.DOI: 10.1016/j.mechmachtheory.2015.05.002
- Singh, Yogesh, V. Vinoth, Y. Ravi Kiran, Jayant Kumar Mohanta, and Santhakumar Mohan. "Inverse dynamics and control of a 3-DOF planar parallel (U-shaped 3-PPR) manipulator." Robotics and Computer-Integrated Manufacturing 34 (2015): 164-179. DOI: 10.1016/j.rcim.2015.02.007
- 4. Singh, Yogesh, and Mohan Santhakumar. "Performance investigations on optimum mechanical design aspects of planar parallel manipulators." Advanced Robotics 30, no. 10 (2016): 652-675.

- 5. Londhe, P. S., Yogesh Singh, M. Santhakumar, Belasahab M. Patre, and L. M. Waghmare. "Robust nonlinear PID-like fuzzy logic control of a planar parallel (2PRP-PPR) manipulator." ISA transactions 63 (2016): 218-232.
- 6. Mohanta, Jayant Kumar, Yogesh Singh, and Santhakumar Mohan. "Kinematic and dynamic performance investigations of asymmetric (U-shape fixed base) planar parallel manipulators." Robotica 36, no. 8 (2018): 1111-1143.
- 7. Singh, Deep, Rutupurna Choudhury, Yogesh Singh, and Manidipto Mukherjee. "Workspace analysis of 3-DOF U-shape base planar parallel robotic motion stage using shape memory alloy restoration technique (SMART) linear actuators." SN Applied Sciences 3 (2021): 1-22.
- 8. Singh, Akhileshwar, Krishna Murari Pandey, and Yogesh Singh. "Triggering the Splitting Dynamics of Low-Viscous Fingers through Surface Wettability Inside Bifurcating Channel." Mathematical Problems in Engineering 2022, no. 1 (2022): 3462844.
- 9. Singh, Deep, Rutupurna Choudhury, Manidipto Mukherjee, and Yogesh Singh. "Development of non-linear models to evaluate the NiTi SMA spring actuator." Journal of Mechanical Engineering and Sciences 16, no. 1 (2022): 8754-8769.
- 10. Biswas, Shatarupa, Yogesh Singh, Manidipto Mukherjee, Shubhabrata Datta, Swapan Barman, and Manivannan Raja. "Design of multi-material model for wire electro-discharge machining of SS304 and SS316 using machine learning and MCDM techniques." Arabian Journal for Science and Engineering 47, no. 12 (2022): 15755-15778.
- Choudhury, Rutupurna, and Yogesh Singh. "Design development and control of a shape memory alloy linear actuation based XYθ motion stage." Engineering Research Express 5, no. 2 (2023): 025011.
- 12. Choudhury, Rutupurna, Pandurang Londhe, Santhakumar Mohan, and Yogesh Singh. "A simplified approach to develop fuzzy logic controller with disturbance estimator for control of a planar parallel (2PRP-PPR) motion platform." Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science 237, no. 10 (2023): 2413-2427.
- 13. Choudhury, Rutupurna, and Yogesh Singh. "Planar parallel manipulators: A review on kinematic, dynamic, and control aspects." Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering 238, no. 4 (2024): 1991-2016.
- Biswas, Shatarupa, Amrit Raj Paul, Yogesh Singh, and Manidipto Mukherjee. "Enhanced prediction and optimization of WEDM for titanium alloy (grade 5) with hybrid artificial neural network based meta-heuristics." International Journal on Interactive Design and Manufacturing (IJIDeM) (2024): 1-21.
- 15. Biswas, Shatarupa, Yogesh Singh, and Manidipto Mukherjee. "Unified supervised learning and optimization technique for wire electrical discharge machining of various grades of alloys: stochastic algorithm combined neural network approach." Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science 238, no. 9 (2024): 3818-3834.
- 16. Biswas, Shatarupa, Amrit Raj Paul, Ananda Rabi Dhar, Yogesh Singh, and Manidipto Mukherjee. "Multi-material modeling for wire electro-discharge machining of Ni-based superalloys using hybrid neural network and stochastic optimization techniques." CIRP Journal of Manufacturing Science and Technology 41 (2023): 350-364.

- 17. Choudhury, Rutupurna, and Yogesh Singh. "Development and performance investigations of the planar parallel robotic manipulators using shape memory alloy linear actuation technique." Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering (2023): 09544089231216022.
- Singh, Akhileshwar, Deepak Kumar Singh, Yogesh Singh, and Krishna Murari Pandey. "Splitting morphology of low-viscous finger at different junctions of microchannels." International Journal of Modern Physics C 35, no. 10 (2024): 2450124.
- 19. Singh, Akhileshwar, Deepak Kumar Singh, Yogesh Singh, and Krishna Murari Pandey. "Effects of viscosity ratio and surface wettability on viscous fingering instability in rectangular channel." International Journal of Modern Physics C 35, no. 06 (2024): 2450072.
- 20. Singh, Akhileshwar, Krishna Murari Pandey, and Yogesh Singh. "TUNING THE SPLITTING BEHAVIOR OF LOW-VISCOUS FINGER IN BIFURCATING NETWORK BY SURFACE WETTABILITY." International Journal of Fluid Mechanics Research 50, no. 3 (2023).
- 21. Singh, Deep, Rutupurna Choudhury, Yogesh Singh, and Santhakumar Mohan. "Design and Development of a Novel Rotary Actuator Based on Shape Memory Alloy and Permanent Magnet System." In Asian Conference on Multibody Systems, pp. 73-81. Singapore: Springer Nature Singapore, 2022.
- 22. Singh, Deep, Rutupurna Choudhury, and Yogesh Singh. "Robotic Systems Deployed to Combat COVID-19 Pandemic: A Review." Recent Advancements in Mechanical Engineering: Select Proceedings of ICRAME 2021 (2022): 179-196.
- 23. Biswas, Shatarupa, Yogesh Singh, and Manidipto Mukherjee. "Optimization of MRR and KW of SS 304 in Wire EDM by RSM Technique." In Recent Advancements in Mechanical Engineering: Select Proceedings of ICRAME 2021, pp. 57-68. Singapore: Springer Nature Singapore, 2022.
- 24. Biswas, Shatarupa, Yogesh Singh, and Manidipto Mukherjee. "A Review on Importance of Dielectric Fluids for Electro Discharge Machining (EDM)." Recent Advances in Smart Manufacturing and Materials: Select Proceedings of ICEM 2020 (2021): 43-55.
- 25. Singh, Akhileshwar, Krishna Murari Pandey, and Yogesh Singh. "Numerical investigation of immiscible liquid-liquid displacement in Hele-Shaw cell." Materials Today: Proceedings 45 (2021): 7151-7155.
- 26. Padhan, Ashutosh, and Yogesh Singh. "Design and Development of a XY Positioning Stage Using Shape Memory Alloy Spring Actuator." In Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020, pp. 593-600. Springer Singapore, 2021.
- 27. Singh, Abhimanyu Pratap, Atanu Paul, Yogesh Singh, and Koena Mukherjee. "Mechanical design of a modular underwater rov for surveillance and cleaning purpose." In Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020, pp. 779-793. Springer Singapore, 2021.
- 28. Choudhury, Rutupurna, Deep Singh, Anuj Kumar, Yogesh Singh, and Chinmaya Kumar Sahoo. "Development and workspace study of a 4-PP planar parallel XY positioning stage using SMA actuators." In Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020, pp. 21-31. Springer Singapore, 2021.

- 29. Biswas, Shatarupa, Yogesh Singh, and Manidipto Mukherjee. "An overview of wire electrical discharge machining (WEDM)." Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020 (2021): 643-652.
- 30. Singh, Deep, Rahul Kumar, Rutupurna Choudhury, Ashutosh Padhan, and Yogesh Singh. "Development of Feature Extraction-Based Currency Recognition System Using Artificial Neural Network." In Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020, pp. 259-270. Springer Singapore, 2021.
- 31. Khilji, Irshad Ahamad, Sunil Pathak, Siti Nadiah Binti Mohd Saffe, Shatarupa Biswas, and Yogesh Singh. "Opportunities and Challenges in Nanoparticles Formation by Electrical Discharge Machining." Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020 (2021): 203-210.
- 32. Choudhury, Rutupurna, Deep Singh, Anuj Kumar, and Yogesh Singh. "Design and Fabrication of Android Application-Based Grass Cutter Robotic System." In Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020, pp. 271-281. Springer Singapore, 2021.
- 33. Singh, Akhileshwar, Krishna Murari Pandey, and Yogesh Singh. "Interfacial Instabilities in Rotating Hele-Shaw Cell: A Review." Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020 (2021): 911-917.
- 34. Sharma, Vikas, Anand Parey, Abhimanyu Pratap Singh, Atanu Paul, and Yogesh Singh. "Detection of Fault in a Bevel Gearbox Under Varying Speed Conditions." In Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020, pp. 697-709. Springer Singapore, 2021.
- 35. Biswas, Shatarupa, Yogesh Singh, and Manidipto Mukherjee. "A Study on Austenitic Stainless-Steel Machining by Wire EDM." In International Conference on Advances in Materials Processing & Manufacturing Applications, pp. 353-366. Singapore: Springer Singapore, 2020.
- 36. Singh, Deep, Rutupurna Choudhury, Yogesh Singh, and Manidipto Mukherjee. "Development and workspace analysis of smart actuation based planar parallel robotic motion stage." In IOP Conference Series: Materials Science and Engineering, vol. 912, no. 3, p. 032063. IOP Publishing, 2020.
- 37. Biswas, Shatarupa, Yogesh Singh, and Manidipto Mukherjee. "A study on optimization techniques of electro discharge machining." In Intelligent Manufacturing, pp. 1-35. Cham: Springer International Publishing, 2020.
- 38. Singh, Deep, Yogesh Singh, and Manidipto Mukherjee. "Behaviour of NiTi based smart actuator for the development of planar parallel micro-motion stage." In Advances in Mechanical Engineering: Select Proceedings of ICAME 2020, pp. 221-228. Singapore: Springer Singapore, 2020.
- 39. Singh, Deep, Rutupurna Choudhury, and Yogesh Singh. "Kinematic, dynamic and stiffness analysis of an asymmetric 2PRP-PPR planar parallel manipulator." In Advances in mechanical engineering: Select proceedings of ICAME 2020, pp. 91-98. Singapore: Springer Singapore, 2020.
- 40. Singh, Akhileshwar, Yogesh Singh, and Krishna Murari Pandey. "A review on viscous fingering pattern formation in lifted Hele-Shaw cell." In Journal of Physics: Conference Series, vol. 1455, no. 1, p. 012022. IOP Publishing, 2020.
- 41. Singh, Akhileshwar, Yogesh Singh, and Krishna Murari Pandey. "Viscous fingering instabilities in radial Hele-Shaw cell: A review." Materials Today: Proceedings 26 (2020): 760-762.

- 42. Singh, Akhileshwar, Krishna Murari Pandey, and Yogesh Singh. "CFD analysis of viscous fingering in Hele-Shaw cell for air-glycerin system." Materials Today: Proceedings 45 (2021): 6381-6385.
- 43. Singh, Deep, and Yogesh Singh. "Development and analysis of a five degrees of freedom robotic manipulator serving as a goalkeeper to train the football players." In IOP Conference Series: Materials Science and Engineering, vol. 402, no. 1, p. 012092. IOP Publishing, 2018.
- 44. Singh, Yogesh, Saumya P. Shah, and Prasanna S. Gandhi. "High resolution flexible 4-PPR U-base planar parallel microstage robotic manipulator." In IOP Conference Series: Materials Science and Engineering, vol. 402, no. 1, p. 012034. IOP Publishing, 2018.
- 45. Singh, Yogesh, and Santhakumar Mohan. "Development of a planar 3PRP parallel manipulator using shape memory alloy spring based actuators." In Proceedings of the 2017 3rd International Conference on Advances in Robotics, pp. 1-6. 2017.
- 46. Mohan, Santhakumar, and Yogesh Singh. "Task space position tracking control of an autonomous underwater vehicle with four tilting thrusters." In OCEANS 2016-Shanghai, pp. 1-3. IEEE, 2016.
- 47. Santhakumar, Mohan, Jin Whan Kim, and Yogesh Singh. "A Robust Task Space Position Tracking Control of an Underwater Vehicle Manipulator System." In Advances in Robotics (2nd International Conference of Robotics Society of India). Robotics Society of India, 2015.
- 48. Singh, Yogesh, and Mohan Santhakumar. "Comparative kinematic and dynamic performance analysis of planar parallel manipulators." In Proceedings of the 2015 conference on advances in robotics, pp. 1-6. 2015.
- 49. Vinoth, V., Yogesh Singh, Jayant Kumar Mohanta, and M. Santhakumar. "Robust disturbance observer based sliding mode control of a planar parallel (3-PPR) manipulator." In 2014 Students Conference on Engineering and Systems, pp. 1-6. IEEE, 2014.
- 50. Singh, Yogesh, V. Vinoth, and M. Santhakumar. "Dynamic Modellingand Control of a 3-DOF Planar Parallel Robotic (XYθZ Motion) Platform." Procedia Materials Science 5 (2014): 1528-1539.
- 51. Singh, Deep, Rutupurna Choudhury, Yogesh Singh, and Santhakumar Mohan. "Design and Development of a Novel Rotary Actuator Based on Shape Memory Alloy and Permanent Magnet System." In Asian Conference on Multibody Systems, pp. 73-81. Singapore: Springer Nature Singapore, 2022.
- 52. Choudhury, Rutupurna, Deep Singh, Anuj Kumar, Yogesh Singh, and Chinmaya Kumar Sahoo. "Development and workspace study of a 4-PP planar parallel XY positioning stage using SMA actuators." In Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020, pp. 21-31. Springer Singapore, 2021.
- 53. Singh, Akhileshwar, Krishna Murari Pandey, and Yogesh Singh. "Interfacial Instabilities in Rotating Hele-Shaw Cell: A Review." Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020 (2021): 911-917.
- 54. Saurabh, Sunny Kumar, and Yogesh Singh. "Comparative Analysis of Flexure Hinge Design: Stress and Deflection Perspectives." In International Conference on Recent Advancements in Mechanical Engineering, pp. 653-662. Singapore: Springer Nature Singapore, 2024.
- 55. Saurabh, Sunny Kumar, and Yogesh Singh. "Design and Development of NiTi Alloy (SMA) Based Compliant Linear Actuator." In International Conference on Recent Advances in Mechanical Engineering Research and Development, pp. 319-328. Singapore: Springer Nature Singapore, 2022.

- 56. Ghatak, Arpan, Prashant Shakya, Mallidi Yashwanth Reddy, Koena Mukherjee, and Yogesh Singh. "Modeling and Analysis of an Underactuated Underwater Vehicle Manipulator System (UVMS) for Underwater Intervention." In International Conference on Emerging Electronics and Automation, pp. 123-135. Singapore: Springer Nature Singapore, 2023.
- 57. Ghatak, Arpan, Koena Mukherjee, and Yogesh Singh. "Classification on unmanned underwater vehicles: A review." International Journal of Vehicle Autonomous Systems 17, no. 3-4 (2023): 192-220.
- 58. Vellaiyan, Venkatesan, R. Venkateshkumar, Vishwanath Bijalwan, and Yogesh Singh. "Structural optimization and parameter investigation of trapezoidal shape soft pneumatic actuator." Engineering Research Express 6, no. 4 (2024): 045510.
- 59. Biswas, S., A. R. Paul, M. Mukherjee, and Y. Singh. "RSM-Based GA Model for Optimization of Machining Parameter of Ti–6Al–4 V in WEDM Process." In Advances in Modern Machining Processes: Proceedings of AIMTDR 2021, pp. 295-308. Singapore: Springer Nature Singapore, 2022.
- 60. Sharma, Vikas, Anand Parey, Abhimanyu Pratap Singh, Atanu Paul, and Yogesh Singh. "Detection of Fault in a Bevel Gearbox Under Varying Speed Conditions." In Recent Advances in Mechanical Engineering: Select Proceedings of ICRAME 2020, pp. 697-709. Springer Singapore, 2021.

Name of student/research scholar	Title of Thesis	Doctorate/Ma ster's/ B tech	Institute	Year of Completion	Supervisor (if any)
Rishi Kumar Yadav	Analyses of Dynamic Obstacle Avoidance of Mobile Robotic Manipulator	PhD	NIT SIlchar	Ongoing	Dr. Yogesh Sing, Dr. A. B. Deoghare
Sunny Kumar Saurabh	Design, Development and Control of Compliant Actuation based PPM	PhD	NIT SIlchar	Ongoing	Dr. Yogesh Singh
Ritwik Poddar	Design, Development and Control of 4- PR PPM based Lower Limb Rehabiliation Robotic Device	PhD	NIT SIlchar	Ongoing	Dr. Yogesh Singh
Dr.Akhileshwar Singh	NUMERICAL INVESTIGATION OF VISCOUS FINGERING INSTABILITY IN IMMISCIBLE FLUIDS DISPLACEMENT	PhD	NIT Silchar	2024	Prof. K. M. Pandey, Dr. Yogesh Singh
Dr.Shatrupa Biswas	Development of Wire Electrical Discharge Machining (WEDM) Parametric Correlation Model and Process Optimization for Different Alloys	PhD	NIT Silchar	2023	Dr. Yogesh Singh, Dr. Manidipto Mukherjee
Dr. Rutupurna Choudhury	Design, Development and Control of Three Degrees of Freedom Micro Motion Positioning Stages UsingSmart Actuation Techniques	PhD	NIT Silchar	2024	Dr. Yogesh Singh
Amos Thounaojam	Surface Modification of DP780 steel through Friction Stir Processing	M. Tech	NIT Silchar	ongoing	Dr. Yogesh Singh, Dr. Sunil Kumar
Prashant Shakya	Design and Analysis of hybrid underwater vehicle for cleaning and surveillance	M. Tech	NIT Silchar	2024	Dr. Yogesh Singh
ABHISHEK KUMAR	DESIGN AND DEVELOPMENT OF 4PR PARALLEL LOWER LIMB REHABILITATION ROBOTIC SYSTEM	M. Tech	NIT Silchar	2023	Dr. Yogesh Singh
Leonard A.L	Design and Analyses of a Robot towards the Drawing and Learning Approach for	M. Tech	NIT Silchar	2022	Dr. Yogesh Singh

GUIDANCE

Name of student/research	Title of Thesis	Doctorate/Ma ster's/ B tech	Institute	Year of Completion	Supervisor (if any)
scholar		ster s/ b teen		Completion	any)
PUTREVI	Numerical Modelling of SMA Actuated	M Tech	NIT Silchar	2021	Dr. Yogesh Singh
VENK ATA	Positioning Stage			2021	Di. Togesh bingh
KRISHNA	i ostioning stage				
CHAITANVA					
Sunny Kumar	Design and development of the Ni-Ti	M. Tech	NIT Silchar	2020	Dr. Vogesh Singh
Sumy Kuma Saurabh	allow (SMA) based compliant linear		INTI Silenai	2020	DI. Togesh Shigh
Sauraon	anoy (SWA) based compliant linear				
Anui Kumar	Design & development of VVA Planar	M. Tech	NIT Silebar	2020	Dr. Vogesh Singh
Alluj Kullai	Parallel motion platform for precision		INTI Silenai	2020	DI. Togesh Shigh
	movement of an object				
Achutach	DESIGN AND DEVELOPMENT OF	M. Taah	NIT Silehor	2020	Dr. Vogosh Singh
Dedher	A VV DOSITIONING STACE USING	NI. IECH	INTI Silchar	2020	DI. rogesh Singh
Paulian	SHADE MEMORY ALLOY SPRING				
Dalaal Vaaaaa	The Developer Communication	М. Т1.	NUT Citation	2010	Du Vasalı Cinal
Kanul Kumar	To Develop a Currency Recognition	M. Iech	NIT Stichar	2019	Dr. Yogesh Singh
DEED ODIOU	Technique from Feature Extraction			2010	D V 10'1
DEEP SINGH	DESIGN OF 3-DOF PLANAK	M. Iech	(SKM	2019	Dr. Yogesh Singh,
	PARALLEL ROBOTIC		INSTITUTE		Dr. Manidipto
	MANIPULATOR FOR MICRO –		OF		Mukherjee
	MOTION STAGE USING		SCIENCE &		
	SMARI ACTUATION		TECHNOL		
D' 1 1'			IOGY)		D W 10'1
Priyadarshi	LINEAR DISPLACEMENT SENSING	B. Iech	NIT Silchar	ongoing	Dr. Yogesh Singh
Narayan,	OF SMA (SHAPE MEMORY ALLOY)				
Ranjan Kr Kapar	BASED LINEAR ACTUATOR	D			
Bontalakoti	A Cost-Effective Controller For The	B. Tech	NIT Silchar	ongoing	Dr. Yogesh Singh
Venkata	Micro-Stereolithography				
Harshavardhan,					
Pampana Suraj		-			
Swaraj Singh,	Design and development of the lower	B. Tech	NIT Silchar	2024	Dr. Yogesh Singh
Bedabrat Bora	limb rehabilitation robotic system using				
	shape memory alloy actuation				
Girish Kumar	DYNAMIC AND KINEMATIC	B. Tech	NIT Silchar	2024	Dr. Yogesh Singh
Munda,	ANALYSIS OF 3PPR PLANAR				
Nidasanemetla	PARALLEL MANIPULATOR				
Abinava					
Koushik					
MONALISHA	SMART GRIPPER: Design and	B. Tech	NIT Silchar	2023	Dr. Yogesh Singh
MILI, MANALI	Development of Shape Memory Alloy				
GOGOI, SMITA	Based Robotic Gripper				
BARUAH,					
SAKSHI RATNA					
T H V Sandhya	OBSTACLE DETECTION AND	B. Tech	NIT Silchar	2023	Dr. Yogesh Singh
Rani, D Sai	AUTONOMOUS NAVIGATION OF				
Prudhvi, G Akshay	MOBILE ROBOT MANIPULATOR				
Varma, A Bhanu					
Sai Prakash					
Md Farhan Ahmad,	Design and Analysis of a Comfortable	B. Tech	NIT Silchar	2021	Dr. Yogesh Singh
Rajwant Yadav,	Robotic Chair Assistant with Sanitizing				
Vishnu Kumar,	and Screening test for Covid-19				
Amitesh Kumar			L		
AKASH KAMAL,	DESIGN, MODELLING AND	B. Tech	NIT Silchar	2020	Dr. Yogesh Singh
NITISH KUMAR,	SIMULATION OF STEWART				
SHASHANK PAL,	PLATFORM AND ITS APPLICATION				
REKHRAJ	FOR THE LOWER LIMB				
MEENA	REHABILITATION				

DETAILS OF ONGOING/COMPLETED PROJECTS

SN	Title	Cost in	Status	Role as	Agency
		Lakh		PI/Co-	
				PI	
1	Design and Development of a High Speed Three	27 lakhs	Completed	PI	CSIR
	Dimensional Pinter with a Large Range of Micro		(2020 2023)		
	Motion using a Scanning Stereolithography		(2020-2023)		
	Technique				
2	Design and development of a three dimensional	30 lakhs	Completed	PI	SERB
	printer based on shape memory alloy smart actuator		(2020-2022)		
	and micro stereo-lithography (MSL) technique		(2020-2022)		
3	Design and Development of a SMART (shape	33 Lakhs	Ongoing	PI	SEED-
	memory alloy restoration technique) Actuation based		(2022-2025)		TIDE
	Lower Limb Rehabilitation Robotic System				DST
4	Design and Development of a SMART Lower Limb	2.5 Lakhs	Completed	PI	DMIMS
	Rehabilitation Robotic System		r		NewGe
			(2021-2023)		n IEDC
					DST
5	Design & Implementation of a hybrid under water	39 Lakhs	Ongoing	Co-PI	ANRF
	vehicle manipulator (HUVM) for cleaning of bio-				
	fouling on a submerged pipeline in a sea		(2022-2025)		
6	Design and development of bath chair for safe	8 Lakhs	Ongoing	Co-PI	SEED-
	bathing for elderly		(2021-2025)		TIDE
					DST

PATENTS (FILED/PUBLISHED/GRANTED)

SN	Details	National or International	Status
1	Santhakumar Mohan, Yogesh Singh, A MECHANISM OF 2PRP-PRR PLANAR PARALLEL MANIPULATOR AND A METHOD THEREOF, 4678/MUM/2015, Indian Patent, 2024	National	Granted
2	Bipul Das, Rajeev Nayan Gupta, Yogesh Singh, Jasper Ramon, Devjani Devi, Bedanta Kumar Saharia, A MANUALLY OPERATIVE SYSTEM FOR MANUFACTURING BOTTLE USING BAMBOO POWDER, 2023/02617, South African Patent, 2024	International	Granted
3	Deep Singh, Yogesh Singh, Manidipto Mukherjee, Dr. Alfa Bisoi, PLANAR PARALLEL MANIPULATOR USING SHAPE MEMORY ALLOY ACTUATION, 202031003989, Indian patent, 2025	National	Granted
4	RUTUPURNA CHOUDHURY, Dr. YOGESH SINGH, Dr. KOENA MUKHERJEE, RECONFIGURABLE POSITIONING MECHANISM, 202031003986, Indian patent, 2024	National	Publishe d

5	Sunny Kumar Saurabh, Yogesh Singh, Santhakumar Mohan, A VOICE COIL ACTUATED MOTION STAGE SYSTEM FOR OBJECT TRANSLATION BASED ON A COMPLIANT MECHANISM, 202431003135, Indian Patent, 2024	National	Filed
6	Yogesh Singh, A SHAPE MEMORY ALLOY ACTUATION-BASED 4-PR LOWER LIMB REHABILITATION MECHANISM SYSTEM, 202431003414, Indian patent, 2024	National	Filed
7	Yogesh Singh; Rutupurna Choudhury and Deep Singh, A SHAPE MEMORY ALLOY ACTUATION-BASED 3D PRINTER MOTION STAGE SYSTEM, 202231050441, Indian Patent, 2022	National	Publishe d
8	Yogesh Singh; Rutupurna Choudhury and Deep Singh, Sumitra Sharma, Manidipto Mukherjee, SHAPE MEMORY ALLOY BASED CONTACTLESS ROTARY ACTUATOR, 202131009671, Indian Patent, 2021	National	Publishe d
9	Kommuri Satyanand, Kaushik Biswas, Kuchipudi Sai Kiran Chowdary, Yogesh Singh, Chinmaya Kumar Sahoo, BATHING SYSTEM FOR COMFORTABLE BATHING AND DRYING, 202331038531, Indian Patent, 2023	National	Publishe d
10	Yogesh Singh, Arpan Ghatak, Koena Mukherjee, Prashant Shakya, AN AUTOMATED SYSTEM FOR AN UNMANNED MARINE VEHICLE WITH A MANIPULATOR, 202531009412, Indian Patent, 2025	National	Filed

OTHER PROFESSIONAL ACTIVITIES

- 1. Organized GIAN course on "Modeling of aerial and parallel robotic manipulators using Lie group and screw theory" from 24/02/2025 to 28/02/2025.
- 2. Organized SERB Karyashala on "High end Workshop on: Hands on training on the high end equipment related to the current emerging fields of Robotics and Mechatronics" from 25/07/2023 to 31/07/2023.
- 3. Organized AICTE ATAL FDP on "3D PRINTING DESIGN AND TECHNOLOGY" from 19/07/2021 to 23/07/2021.
- Organized TEQIP-III sponsored FDP on "Electronic Systems for Mechanical Automation and Robotic Technology (eSMART 2020)" from 12/09/2020 to 16/09/2020.
- Organized TEQIP-III sponsored FDP on "Electronic Systems for Mechanical Automation and Robotic Technology (eSMART 2019)" from 20/05/2019 to 24/05/2019.

COURSES TAUGHT

Subject Code	Subject Name	UG/PG
ME 1208	Instrumentation and Measurement	UG
ME 1308	Machine Design-II	UG
ME 541	Robotics & Automation	PG
ME 1304	Machine Design-I	UG
ME 1433	Robotics and Robot Applications	UG
ME 1313	Workshop Practice	UG
ME 1403	Computer Aided Design & Manufacturing	UG
ME 1506	Robotics & Automation	PG
ME 101	Engineering Mechanics	UG
ME 5235	Soft Computing	UG
ME 202	Theory of Machines	UG
ME 436	Computer Aided Design	UG
ME 310	Dynamics and Control of Machinery	UG
ME 5202	Computer Aided Design	UG/PG
ME 5106	Robotics & Automation	UG
ME 302	Machine Design-I	UG
ME 209	Instrumentation and Measurement	UG

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