Curriculum Vitae

Brief Profile:

Dr. Deepak Patil was born in the Indian state of Maharashtra in 1991. In 2013, he earned B.Tech (Production Engineering) degree from SRTM University in Maharashtra, India, and an M. Tech (Manufacturing Technology) degree from NIT Calicut in Kerala, India. Doctorate degree (Department of Mechanical Engineering) received in 2021 at Indian Institute of Technology Delhi, India. He worked as a postdoctoral fellow in the Department of Materials Engineering at the Indian Institute of Science Bangalore on a joint project (IISc-UCSF, 2021-2022). He is currently employed as an Assistant Professor in the Department of Production Engineering at NIT Trichy. His Ph.D. research focuses on the interaction of micro-nano structured surfaces with bacterial and mammalian cells. Biofilm formation on titanium implants and urinary catheters has been addressed. His research interests are interdisciplinary in nature, and he typically applies advanced materials technologies to biomedical problems. His research interests include micro-nano fabrication, the generation of functional surfaces through texturing, and coating for biomedical applications.

Candidates with a strong interest in his research areas who want to pursue a Ph.D. should send their resume to deepakdeelip@nitt.edu or deepakpatil3030@gmail.com. NIT Students in Trichy's B.Tech. and M.Tech. programmes (all years) are welcome to contact me as a mentor for their dissertation/thesis or short- or long-term independent projects.

1. Name: Dr. Deepak Deelip Patil
2. Designation: Assistant Professor
3. Office Address: Room No. OJAS-117,
   Department of Production Engineering,
   National Institute of Technology
   Tiruchirappalli – 620015, Tamil Nadu, INDIA
4. Telephone (Direct) (Optional):

   Telephone : Extn (Optional):

   Mobile (Optional): +917020950289
5. Email (Primary): deepakdeelip@nitt.edu Email (Secondary) : deepakpatil3030@gmail.com

6. Field(s) of Specialization: Micro Nano Manufacturing, Precision Engineering, Functional Materials, Biomaterials

7. Employment Profile

Job Title	Employer	From	To
Postdoctoral Fellow	Department of Materials Engineering, Indian Institute of Science (IISc) Bangalore	February, 2021	October, 2022

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	Indian Institute of Technology Delhi	2015-2021	Distinction	Micro-nano Manufacturing (Development of Functional Surfaces for Biomedical Application)
M. Tech	National Institute of Technology Calicut	2013-2015	Distinction (Gold medalist)	Manufacturing Technology
B. Tech	Swami Ramanand Teerth Marathwada (SRTM) University, Nanded	2009-2013	Distinction (First Rank)	Production Engineering

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
NA			

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
NA			

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2018	Received travel grant from DST (ITS/2018/000300) for attending the conference in abroad.	SERB-DST GoI
2015	Gold Medalist in M. Tech, Mechanical Engineering Department, NIT Calicut, 2013-2015 for the outstanding academic record.	NIT Calicut
2015	MHRD, GoI fellowship during Ph.D, IIT Delhi (2015-2020)	MHRD GoI
2013	MHRD, GoI fellowship during M. Tech, NIT Calicut (2013-2015)	MHRD GoI
2013	Himanjay Best Project Award 2013 in Final Year of B. Tech, S.G.G.S.I.E & T, Nanded, 2013	SRTM University
2013	First Prize in Paper Presentation of PRAGYAA-2013, National Level Technical Fiesta of SGGSIE & T, NANDED, 2013.	SGGSIE & T, NANDED
2013	First Rank in Batch-2013 B. Tech Topper from Production Engineering Department, SGGSIE & T, Nanded.	SRTM University

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
NA				

13. Details of Academic Work
(i) Curriculum Development: NA
(ii) Courses taught at Postgraduate and Undergraduate levels : NA
(iii)Projects guided at Postgraduate level: NA
(iv)Other contribution(s)

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
NA				

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
NA			

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue
March, 2022	Research Presentation	International	Participant	ACS Spring 2022	San Diego, CA, USA.
December, 2015	Research Presentation	International	Participant	COPEN-9, IIT Bombay	Mumbai, INDIA
December, 2014	Research Presentation	International	Participant	ICMMCS, IIT Madras	Chennai, INDIA

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue
NA				

18. Invited Talks delivered

Topic	Date	Inviting Organization
NA		

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Ordinary Member	Japan Society for Precision Engineering (JSPE)	ID: A190031 (January, 2019 - till date)
Life Member	Industrial Institution of Industrial Engineering (IIIE)	ID: MIIE 10811 (41) (December, 2015 – till date)
Life Member	Indian Welding Society (IWS)	ID: L01978 (May, 2021 – till date)

20. Academic Foreign Visits

Country	Duration of Visit	Programme
NA		

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Vol. No.	Page No.	Year	Impact Factor of the Journal (Optional)
D. Patil, M. Overland, M. Stoller, K. Chatterjee	Bioinspired nanostructured bactericidal surfaces	Current Opinion in Chemical Engineering	34	100741	2021	6.117
D. Patil, S. Aravindan, R. Sarathi, P.V. Rao	Fabrication of self-cleaning superhydrophobic silicone rubber insulator through laser texturing	Surface Engineering	36	308-317	2020	3.169
D. Patil, S. Aravindan, M.K. Wasson, V. Perumal, P.V. Rao	Antibacterial and cytocompatibility study of modified Ti6Al4V surfaces through thermal	Materials Science and Engineering : C	99	1007-1020	2019	7.328

	annealing					
D. Patil, A. Goswami, S. Aravindan, P.V. Rao, M. Yoshino	Development of bacteria sensing platform through layered (metal-dielectric-metal) nanoparticles	Optics & Laser Technology	120	105771	2019	4.939
D. Patil, S. Aravindan, M.K. Wasson, V. Perumal, P.V. Rao	Fabrication of silver nanoparticles-embedded antibacterial polymer surface through thermal annealing and soft molding technique	Materials Research Express	6	045010 (1-8).	2019	2.025
D. Patil, A. Sharma, S. Aravindan, P.V. Rao	Development of hot embossing setup and fabrication of ordered nanostructures on large area of polymer surface for antibiofouling application	Micro & Nano Letters	14	191-195	2019	0.980
D. Patil, S. Aravindan, M.K. Wasson, V. Perumal, P.V. Rao	Fast Fabrication of Superhydrophobic Titanium Alloy as Antibacterial Surface Using Nanosecond Laser Texturing	ASME-Journal of Micro- and Nano Manufacturing	6	011002 (1-8)	2018	-

Patent Details:

	Details	Status
1.	Indian full patent, 202011026371, as IP of India in Journal No. 52/2021 dated December 24, 2021. Fabrication of coating free structured superhydrophobic polydimethylsiloxane (PDMS) surface and its use thereof, **D. Patil**, S. Aravindan, V. Perumal, P.V. Rao	Published
2.	Provisional Indian Patent filed on 29/06/2022, Application number 202241037423. "A Trapping Device and Implementations Thereof", **D. Patil**, M. Overland, M. Stoller, K. Chatterjee	Filed
3.	Provisional Indian Patent filed on 29/07/2022, Application number	Filed

	202241041607. "A 3d Printed Scaffold and Implementations Thereof", D. Patil, M. Overland, M. Stoller, K. Chatterjee	

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
A. Kumar, **D. Patil,** S. Aravindan, P.V. Rao,	Investigation into the effect of distinct nanostructures on silicon reflectivity for solar cells	Materials Today: Proceedings	617-622	International Conference on Materials, Mechanics & Modelling	NIT Jamshedpur	March, 2022
D. Patil, S. Aravindan, P.V. Rao	Experimental Investigation of reflectance characteristics of silicon surface covered with gold nanoparticles (AuNPs) embedded polymer film	Proceedings of the 11th International Conference on Precision. Meso, Micro and Nano Engineering	12-14	Precision. Meso, Micro and Nano Engineering	IIT Indore	December, 2019
D. Patil, P.V. Rao, S. Aravindan, Vivekanandan P	Experimental investigation of microtopography patterns on bacterial attachment	4th Annual Conference and Expo On Biomaterials	37	Biomaterials	London, UK	February, 2019
D. Patil, S. Aravindan, M. W., V. Perumal. and P.V. Rao	Fabrication of Nano-structured Surfaces and Their Effect on Bacterial Attachment	Proceedings of 17th International Conference on Precision Engineering (ICPE 17)		Precision Engineering	Kamakura, JAPAN	November , 2018
D. Patil, S. Aravindan and P.V. Rao	Effect of Thermal Annealing on Titanium Thin Film Deposited on Silicon	Proceedings of 17th International Conference on Precision		Precision Engineering	Kamakura, JAPAN	November , 2018

	Substrate	Engineering (ICPE 17)				
D. Patil, S. Aravindan, V. Perumal, P.V. Rao	Effect of Laser-Induced Microtopographic Pattern on Biofilm Formation	Proceedings of the 10th International Conference on Precision. Meso, Micro and Nano Engineering (COPEN-10)	5-8	Precision Engineering	IIT Madras	December, 2017
D. Patil, S. Aravindan, V. Perumal, P.V. Rao	Fabrication of Substrate Supported Silver Nanoparticles for Antibacterial Application	Proceedings of International Conference on Manufacturing Technology and Simulation	304-307	Manufacturing Technology and Simulation	IIT Madras	July, 2017
D. Patil, S. Aravindan, V. Perumal, P.V. Rao	Nano structure formation by annealing ultrathin polystyrene film	Proceedings of 6th International & 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR)	1538-1540	Manufacturing Technology, Design and Research	College of Engineering Pune, Maharashtra	December, 2016

(C) Books & Monographs

Author(s)	Title of Chapter	Name of Publishers	Year of Publication	ISSN/ISBN Number
Patil, D., Wasson, M.K., Perumal, V., Aravindan, S., Rao, P.V	"Bactericidal Nanostructured Titanium Surface Through Thermal Annealing" in Book titled, "Advances in Micro and Nano Manufacturing and Surface Engineering"	Springer, Singapore	2019	Print ISBN: 978-981-32-9424-0 Online ISBN: 978-981-32-

				9425-7

Current Openings

Candidates with a strong interest in his research areas who want to pursue a Ph.D. should send their resume to deepakdeelip@nitt.edu or deepakpatil3030@gmail.com. NIT Students in Trichy's B.Tech. and M.Tech. programmes (all years) are welcome to contact me as a mentor for their dissertation/thesis or short- or long-term independent projects.