National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty

Curriculum Vitae

1. Name: Takhellambam Sonamani Singh
2. Designation: Assistant Professor
3. Office Address: PH314, Department of Physics, OJAS Building, NIT Trichy
4. Email (Primary): takhel@nitt.edu
5. Field(s) of Specialization: Microrobotics, Nanorobotics, Electronic Nose (E-nose), Swarm Intelligence (SI), and Artificial Neural Network.

6. Employment Profile

Job Title	Employer	From	To
Assistant Professor	NIT Trichy	May 2020	Till Date

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

Degree	Board / University	Year	Division/ Grade	Subjects
Ph.D.	Institute of Science, Banaras Hindu University, India	2019	NA	Physics
Master of Science	Institute of Science, Banaras Hindu University, India	2012	First	Physics
B.Sc. B.Ed. (Integrated)	RIE B.B.S.R. (N.C.E.R.T.), Utkal University, India	2010	First	Physics, Math, Chemistry, Education

8. Academic/Administrative Responsibilities within the Institute

Position	Faculty/Department/Centre/Institution	From	To

BTech Class Coordinator	Physics Department	June 2020	Till date
Department level Vlab Coordinators	Physics Department	2020	2021
Placement & Higher Studies, Department Coordinator		2021	2022

9. Details of Academic Work

(i)Curriculum Development
Developed practical videos for BTech First Year Laboratory
(ii) Courses taught at Postgraduate and Undergraduate levels
PG: Electronics (PH657) and Computational Techniques (PH674) UG: Physics Theory and Laboratory (PHIR11 and PHIR12)
(iii) Projects guided at Postgraduate level
2020-2021
"MODELLING OF NONLINEAR BEHAVIOR OF MEMS CANTILEVER SENSOR" by Vikram Singh (213219019)
2021-2022
"EFFECTS OF FLAGELLAR TAPERING ON THE LOCOMOTION OF SPERMATOZOA" by Divakar Bhatt (213220005)
"DESIGN OF MAGNETIC ACTUATION SYSTEM FOR LOW REYNOLDS NUMBER MAGNETIC SWIMMER" by Rhythm Khurana (213220018)
"STATISTICAL ANALYSIS FOR MAGNETIC BARKHAUSEN EMISSION BASED CHARACTERIZATION OF MICROSTRUCTURE IN A MARTENSITIC STEEL" by Rohit Thakur (213120017)
(iv) Other Contribution: Organized weekend competition (CSIR-NET, GATE) oriented classes for PG students

10. Number of PhDs guided

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

Sharanya S	NA	Supervisor	Ongoing

11. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
T. Sonamani Singh, and R. D. S. Yadava	Navigation control of flagellated magnetic microswimmer by parametric excitation	Journal of Physics D: Applied Physics, IOP	53 (9)	095402 (pp. 1-11)	2019	3.207
A. Gupta, T. Sonamani Singh and R. D. S. Yadava	MEMS sensor array based electronic nose for breath analysis ─ a simulation study	J. Breath Research	13	016003 (pp. 1-17)	2018	4.538
T. Sonamani Singh, P. Singh and R. D. S. Yadava	Effect of interfilament hydrodynamic interaction on swimming performance of two-filament microswimmers	Soft Matter, RSC	14	7748-7758	2018	3.679
T. Sonamani Singh, and R. D. S. Yadava	Effect of Tapering on Elastic Filament Microswimming under Planar Body Actuation	Biomedical Phy. & Eng. Exp., IOP	4(1)	015019 (pp. 1-10)	2017	NA

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
Sharanya S, T. Sonamani Singh	Hydrodynamic Coupling Between Comoving Microrobots	Smart Innovation, Systems and Technologies book series (SIST,volume 292)	77-84	Modeling, Simulation and Optimization Proceedings of CoMSO 2021	NIT Silchar	2021
T. Sonamani Singh, and R. D. S. Yadava	Application of PSO Clustering for Selection of Chemical Interface Materials for Sensor Array Electronic Nose	SoCTA 2016, AISC Series, vol. 583, Springer	449-456	SoCTA 2016	Amity University, Rajasthan	2018

T. Sonamani Singh, and R. D. S. Yadava	Effect of Tapering on Swimming Efficiency of Flagellated Microswimmer at Low Reynolds Number	ICACCP 2017, AISC Series, vol. 706, Springer	627-637	ICACCP 2017	Sikkim Manipal University	2018
Anurag Gupta, T. Sonamani Singh and R.D.S. Yadava	Application of Fuzzy Clustering for Selection of Coating Materials for MEMS Sensor Array	ICACCP 2017, LNEE Series, vol. 475, Springer	pp. 454-464	ICACCP 2017	Sikkim Manipal University	2018
T. Sonamani Singh, and R. D. S. Yadava	Elastohydrodynamics of Microfilament under Distributed Body Actuation	ICC 2017, AIP Conference Proceedings	140121 (pp.1-5)	ICC 2017	Govt. Engineering College, Bikaner	2018
Anurag Gupta, T. Sonamani Singh, Priyanka Singh and R.D.S. Yadava	Oxidative stress detection by MEMS cantilever sensor array based electronic nose	ICC 2017, AIP Conference Proceedings	140131, pp. 1-5	ICC 2017	Govt. Engineering College, Bikaner	2018
Anurag Gupta, T. Sonamani Singh and R.D.S. Yadava	Polymer-coated MEMS chemical sensor array for monitoring oxidative stress by breath analysis	ICIIECS 2017, IEEE Xplore, Feb. 2018	pp. 1-8	ICIIECS 2017	Coimbatore, India	2017
T. Sonamani Singh, P. Verma and R. D. S. Yadava	Fuzzy Subtractive Clustering for Polymer Data Mining for SAW Sensor Array Based Electronic Nose	SocProS 2016, AISC Series, vol. 546, Springer	245-253	SocProS 2016	Thapar University, Patiala, India	2017

(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
T Sonamani Singh, Priyanka Singh, RDS Yadava	Perspectives for Electronic Nose Technology in Green Analytical Chemistry	Apple Academic Press	2021	9781003083917