Name of Teaching Staff Designation Department Date of Joining the Institution Email ID Office Contact	: : : : : :	Dr. Moses J Kartha Assistant Professor- Physics Department of Applied Science and Humanities 01.08.2024 moses.kartha@djsce.ac.in	
Vidwan Link	:	--	
Google Scholar Link:	:	https://scholar.google.com/citations?user=_80AL2oAAAAJ&hl=en	
Researchgate Link:	:	--	
ORCID	:	https://orcid.org/0000-0003-2272-8361	
Publons Researcher ID:		--	
Qualifications with Class / Grade	:	1. Post-Doctoral Fellow 19th August 2019 – 18th August 2022 Indian Institute of Technology, Bombay 2. Ph. D. Physics Department of Physics, Savitribai Phule Pune University, Pune Thesis: Computational Study of non-equilibrium Growth Models and Their Application to Aggregation of Patchy Particles 3. M. Phil. Physics Grade: A Department of Physics, Savitribai Phule Pune University, Pune Thesis: Self Assembly of Janus Particles- A Monte Carlo simulation study 4. M. Sc. Physics CPI: 8.11/10 Grade: A School of Pure and Applied Physics, Mahatma Gandhi University, Kottayam Dissertation: Studies on Synchronization in Coupled Predator- Prey Systems (IISER Pune) 5. B. Sc. Physics 85.1% Class : I st St. Berchmanns College, Mahatma Gandhi University, Kottayam	
Total Experience in Years	:	**<u>Teaching</u>**: **4 years**	
Papers Published in Journal:	:	1. Surface Ozone Variability in The Urban and Nearby Rural Locations of Tropical India. A. L. Londhe, D. B. Jadhav, P. S. Buchunde and **M. J. Kartha** *Current Science*, 95, 1724**(2008).** 2. Phase Transition in Diffusion Limited Aggregation with Patchy Particles in Two Dimensions **Moses J Kartha** and Ahmed Sayeed	

		Phys. Lett. A 380, 2791 **(2016).** 3.Experimental and Simulation Study on Nanosonic Particles and Nanomaterials of ZnS and Their Nano-Schottky Diodes Sachin V Mukhamale, Priyanka Tabhane, Archana A. Meshram, Vilas A. Tabhane and **Moses J Kartha** *Cryst. Growth. Des.* 16, 5501**(2016).** 4. Why Patchy-DLA Belongs To DP-Universality Class? **Moses J Kartha** and Arun G. Banpurkar, *Phys. Rev. E* 94,0621908 **(2016).** 5. Surface Morphology of Ballistic Deposition With Patchy Particles and Visibility Graph **Moses J Kartha** *Phys. Lett. A* 381,556 **(2017).** 6.Synthesis of CdS thin films at room temperature by RF-magnetron sputtering and study of its structural, electrical, optical and morphology properties S Rondiya, A Rokade, A Funde, **M Kartha**, H Pathan, S Jadkar, *Thin Solid Films* 631, 41 **(2017).** 7.Surfactants assisted solvothermal derived titania nanoparticles: synthesis and simulation D Dastan, N Chaure, **M Kartha** *Journal of Materials Science: Materials in Electronics* 28 (11), 7784 **(2017).** 8. Surface smoothening effects on growth of diamond films BA Reshi, S Kumar, **MJ Kartha**, R Varma *AIP Conference Proceedings*, 1942, 060027**(2018).** 9.Experimental and simulation study of growth of TiO 2 films on different substrates and its applications TT Ghogare**, MJ Kartha**, SD Kendre, HM Pathan *AIP Conference Proceedings* 1942 (1), 080056 **(2018).** 10. Investigation of diamond deposition on diamond, silicon and quartz substrates by microwave plasma chemical vapour deposition and Monte Carlo Simulations Bilal Ahmad Reshi, **Moses J. Kartha**, Anuradha Misra, and Raghava Varma *Material Research Express* 6(9),096420 **(2019).** 11.Simulation Study on Effect of Lockdown and Recovery Time on Spread of COVID-19 in High and Low-Density Areas; **Moses Kartha** and Habib Pathan 10 April **(2020)** http://dx.doi.org/10.2139/ssrn.3572697

		12. Growth transitions and Critical Behaviour in the non-equilibrium aggregation of short, patchy nanorods, **Moses J Kartha** and Mukta Tripathy *The European Physical Journal E* 44 (5), 1**(2021).** 13. Morphological study of thin films: Simulation and experimental insights using horizontal visibility graph **Moses J. Kartha** and Bilal Ahmad Reshi and Pravin S. Walke and Davoud Dastan *Ceramics International*, 48, 5066**(2022).** 14. Experimental, theoretical and numerical simulation-based investigations on the fabricated Cu_2ZnSn thin-film-based Schottky diodes with enhanced electron transport for solar cell. S.V. Mukhamale, **M.J. Kartha** and P.P. Khirade, ***Nature Sci Rep*** 14, 15970 **(2024).** https://doi.org/10.1038/s41598-024-63857-4 15. Experimental and simulation study of polymer nanocomposite thin films. N. S Karmakar, A.Valavade, S. Jain, **M. Kartha** et al. *Materials Science and Technology*. **(2025).** doi:10.1177/02670836251340454 16. Diffusion limited aggregation of polymers with anisotropic interactions and phase transition Applied Physics A, 131, 6, 507 (2025)
Papers Paper Presentation in conference:		1. Surface Morphology of Thin Films and Visibility Graph **Moses Kartha** *Third International Computational Science and Engineering Conference, Doha, Qatar under TEXAS A&M university at Qatar, 2019* 2. Non-equilibrium Phase Transition in Deposition of Patchy Nano-rods **Moses J Kartha**, Mukta Tripathy *e- Conference on Soft Matter (e-CoSoM 2020) Sathyabama Institute of Science and Technology, 2020, ISBN: 978-93-83409-57-0* 3. A Patchy model to study epidemic spreading in urban-like environments **Moses J Kartha** *Interdisciplinary National Conference on Scientific Approaches for Sustainable Development, Wilson College, Mumbai, 4^{th} 5^{th} December 2023, ISBN: 978-93-93789-57-0* 4. Diffusion Limited Aggregation of Polymers with Anisotropic Interactions and Phase Transitions **Moses J Kartha** *Indo-South Korea-Thailand 4th International Conference on Nanoscience and Nanotechnology for energy, environment and Biomedical Applications (iNEEBA-2024) 8-9 November 2024.*

		5. New Frontiers in Homeopathy-Approaches from Physics and Material Science **Moses Kartha** and P. Nidheesh Shodh- Rityu- 16-18 Special Issue (2025) ISSN-2454-6283 *Two days Multidisciplinary International Conference on Indian Knowledge System: Global Perspective (IKSGP-2025), Yeshwant Mahavidyalaya, Nanded. 10-11 February 2025* 6. Simulation of Epidemic Spread by an Angular Dependent Model **Moses Kartha** *First International Conference on Computational Science and Mathematical Modeling, VIT-AP University, July 17-19 2025* 7. Visibility Graph Analysis of Morphological Evolution of Interfaces during Thin film Deposition and Erosion **Moses Kartha**, Ankita B Jain, Bilal A Reshi *Emerging Trends in Experimental and Theoretical Physics (ETETO-2025), Veer Narmad South Gujarat University, Surat, 9th December 2025*	
Area of Specialization	:	Modeling and Simulation, Computational Physics, Soft matter, Statistical Physics, Thin films, Epidemic modeling.	
Professional Memberships	:	--	
Subjects Taught		**UG Level:** Classical Physics, Quantum Mechanics, Nuclear Physics, Optics, Engineering Physics **PG Level:** --	
Projects Guided	:	**UG Level:** Design of Small Scale Model to Understand spread of Diseases- Aavishkar, Zonal round, University of Mumbai, 2022-23 **PG Level:** --	
Recommended Students for Higher Education		**Name of the Student** --	**University/Industry** --
Institute/Department Responsibility handled:		--	