

Name: Dr. Gayitri H M

Designation: Associate Professor

Qualification: BE, Mtech, Ph.D

Email/LinkedIn/ORCID: 0000-0003-2653-9883

Work Experience: 17

Specialization: Nano science and Technology, AI & ML for Medical applications, Communication system

Subjects Taught: principles of Communication systems, Advanced communication systems , wireless and mobile communications systems, elements of electronics systems.-Process control systems, IOT ,

Research Guidance: 3 students registered (2-part time , 1 full time)

Publications: 30 (journals), 12 (conferences)

Patents: 6 (2-published, 2 filed, 2 granted)

Projects/Consultancy: nil

Book(s) Published: 1

FDPs organised/attended: 4 –organized, 30-attended

Achievements: Best young researcher award, 2-Research excellence award

Professional Membership: nil

LIST OF PUBLICATIONS

1“H. M. Gayitri, Murad Al-Gunaid, B. S. Madhukar, Siddaramaiah and A. P. Gnana Prakash , Structural, Dielectric Permittivity and Optical Characteristics of Casting Poly Vinyl Alcohol/Calcium Nickel Aluminate Nanocomposit Films”, Polymer –Plastic Technology and Materials, Vol.58, pp.1110-1124,(2019) (Taylor &Francis) IF : 3.267

2. “H. M. Gayitri, Murad Al-Gunaid, Siddaramaiah and A. P. Gnana Prakash , Investigation of triplex $\text{CaAl}_2\text{ZnO}_5$ nanocrystals on electrical permittivity, optical and structural characteristics of PVA nanocomposite films”, Polymer Bulletin, Vol.77: pp.5005–5026 (2020) (Springer) IF: 2.87

3. H. M. Gayitri, Murad Al-Gunaid, Siddaramaiah and A. P. Gnana Prakash, “Optical, structural and thermal properties of hybrid PVA/ $\text{CaAl}_2\text{ZrO}_6$ nanocomposite films “ Indian Journal of Engineering and Materials Sciences, Vol. 27, , pp. 320-332, (2020) (NISCAIR) IF:0.88

4. Gayitri H.M, Murad Q.A. Al-Gunaid, Somesh T.E, Fares Hezam Al-Ostoot and Siddaramaiah, "Optimized nano-perovskite lanthanum cuprate decorated PVA based solid polymer electrolyte" Polymer–Plastic Technology and Materials. Polymer-Plastics Technology and Materials, 59 (2), pp. 215-229. (2020). (Taylor &Francis) IF: 3.267

5 Gayitri H.M, Murad Q.A. Al-Gunaid, Somesh T.E, and Siddaramaiah, . “Impact of nano-perovskite La_2CuO_4 on dc-conduction, opto-electrical sensing and thermal behavior of PVA nanocomposite films” Polymer-Plastics Technology and Materials 59, no. 5 (2020): 469-483. (Taylor &Francis) IF: 3.267

6. H.Gayitri, H. M., Yathish Kumar, M. V., Kambar, M., Shubhang, D. K., Rudraswamy, S. U., & Madhukar, B. S. (2019). Ga-ZnO/PVDF Nanogenerator. *Journal of Emerging Technologies and Innovative Research (JETIR)*, 6, 406-408. ISSN: 2349-5162. www.jetir.org
7. Gayitri, H. M., & Shwetha. (2018). Design and Implementation of Supervisory Control and Data Acquisition system for Paint shop. *International Journal of Research and Analytical Reviews (IJRAR)*, 5(3). ISSN: 2348-1269 / E-ISSN: 2349-5138. www.ijrar.com
8. Gayitri, H. M. Supriya, L. C., & (2018). Automatic Back-Wash Filtering System. *International Journal of Pure and Applied Mathematics*, 120(6), 6385-6400. ISSN: 1311-8080 (Print) / 1314-3395 (Online). <https://www.ijpam.eu>
9. Gayitri, H.M., Al-Gunaid, M.Q., AL-Ostoot, F.H., Al-Zaqri, N., Boshala, A. and Gnanaprakash, A.P., 2023. Investigation on opto-electrical, structural and electro-chemical performance of PVA/ZnBi₂MoO₇ hybrid nanocomposites. *Polymer Bulletin*, 80(1), pp.773-790.", *Polymer Bulletin* (in press) (Springer) IF: 2.87
- 10." Gayitri, H. M., Murad QA Al-Gunaid, and J. R. Kumar. "Investigation on optical, structural and electrochemical properties of hybrid PVA/ZnW₂MoO₇ nanocomposite film for optoelectronics and super capacitor applications." *Polymer Bulletin* (2022): 1-19.",
11. Gayitri H M , Harshitha C. A, Kumar J R "Hand Gesture Recognition and Voice Conversion for Speech Impaired", *Mathematical Statistician and Engineering Applications* ISSN: 2094-0343 2326-9865 , Page Number: 2739-2746 .Publication Issue: Vol. 71 No. 4 (2022)
- 12 Gayitri HM, Suhas G Adhikari, Kumar J R , . Smart Robot for Restaurant Food Delivery , " *Mathematical Statistician and Engineering Applications*, ISSN: 2094-0343 2326-9865, Page Number: 2747-2753 ,Publication Issue: Vol. 71 No. 4 (2022)
13. ., Gayitri H. M., Murad Q. A. Al-Gunaid*, Shashikala B. SKhaled Alkanad, Nabil Al-Zaqri, Ahmed Boshala, and Fares H. Al-Ostoot Characterization of Opto-Electrical, Electrochemical and Mechanical Behaviors of Flexible PVA/(PANI+La₂CuO₄)/LiClO₄-PC Polymer Blend Electrolyte Films **Macromol. Res.*, 30, 00 (2022) DOI 10.1007/s13233-022-0070-4 www.springer.com/13233 pISSN 1598-5032 eISSN 2092-7673, PP(1-9)
14. Gayitri H M, Xavier Fernandis, Shrikant Malgai, Ujwal Naik, Shobit Naik, Kumar J R, AI Based Advanced Navigation Assistant for the Visually Impaired *Mathematical Statistician and Engineering Applications* ISSN: 2094-0343 2326-9865
15. Al-Gunaid, M. Q., Saeed, A. M., HM, G., & Basavarajaiah, S. (2020). Impact of nano-perovskite La₂CuO₄ on dc-conduction, opto-electrical sensing and thermal behavior of PVA nanocomposite films. *Polymer-Plastics Technology and Materials*, 59(5), 469-483.
16. Madappa, E. A., & Gayitri, H. M. (2026). UV to blue luminescent flexible PVA/bismuth vanadate nanocomposite films for optical applications. *Optical Materials*, 178, 118209. <https://doi.org/10.1016/j.optmat.2025.118209>
17. Gayitri, H. M., Al-Gunaid, M. Q. A., Shivanna, S. B., Ahmed, W. A., Al-Ghaberi, W. A., Dhaif-Allah, M. A. H., Zabiulla, S., Makarem, A., & Al-Ostoot, F. H. (2026). Tuning the screening effect on

optical properties of flexible PVA films via the synergistic incorporation of nano-La₂CuO₄, electrolytic LiClO₄, and varied plasticizer PC content. ACS Organic & Inorganic Au, 6, Article 6c00056. <https://doi.org/10.1021/acsorginorgau.6c00056>

18. Gayitri, H. M., Shashikala, B. S., Al-Gunaid, M. Q. A., Keerthan, T. H., Thanushree, M., Ahmed, W. A., Dhaif-Allah, M. A. H., Al-Horaibi, S. A., & Al-Ostoot, F. H. (2026). Synergistic impact of core-shell PANI/HNT nanofillers in polycarbonate films: Engineering structural integrity, electrical permittivity, and thermal stability for advanced energy storage systems. Inorganic Chemistry Communications, 184, 115990. <https://doi.org/10.1016/j.inoche.2025.115990>

19. Al-Gunaid, M. Q. A., Maheshwarappa, G. H., Shivanna, S. B., Dhaif-Allah, M. A. H., Ahmed, W. A., & Al-Ostoot, F. H. (2023). Metal oxide nanofillers induced changes in material properties and related applications of polymer composites. European Journal of Chemistry, 14(3), 401-413. <https://doi.org/10.5155/eurjchem.14.3.401-413.243920>. Gayitri, H. M., Rajalakshmi, M. C., Komalakumari, Pallavi, J., & Hemavathi, A. B. (2025), Gayitri, H. M., et al. (2025). Synthesis and characterization of hybrid nanostructures based natural dye sensitized solar cell. Journal of Electrical Systems, 21(1), 641-647. <https://doi.org/10.52783/jes.XXXX>

21 Gayitri, H. M., Shwetha, M., Gayathri, S., & Hugar, R. (2018). Gayitri, H. M., et al. (2018). Design and implementation of supervisory control and data acquisition system for paint shop. International Journal of Research and Analytical Reviews (IJRAR), 5(3), E-ISSN 2348-1269. <https://ijrar.com>

22. Gayitri, H. M., et al. (2023). Gayitri, H. M., [Co-author 2], & [Co-author 3]. (2023). AI based advanced navigation assistant for the visually impaired. Mathematical Statistician and Engineering Applications, 72(1), 2754-2764. <https://philstat.org>

23. Gayitri, H. M., Ranjitha, R., & Saniha, H. N. (2024). Robot for deploying first aid kit during natural disasters. Journal of Telecommunication Study, 8(2). <https://doi.org/10.5281/matjournals.co.in/JTS-2024-8-2>

24. 24. Gayitri, H. M., Krishnagowda, K., & Goravappa, A. (2025). A secure and transparent e-voting framework using Ethereum blockchain. Journal of Information Systems Engineering and Management, 10(8s). e-ISSN: 2468-4376.

25. Gayitri, H. M., Shobhini, G. R., Sanjana, P., Sravya, N. P., & Raj, S. T. (2025). Res-Q bot: Smart borewell rescue solution. Journal of Dalian University of Technology, 12(7), 632. Link: ijemr.net / dalian journal

26. Gayitri, H. M., Naveen, N., Patil, V., Kumar, G. L., & Gayathri, S. (2023). Solar-powered portable mobile phone charger for motorbikes. International Journal of Innovative Research in Electrical, Electronics, Instrumentation and Control Engineering, 11(6). <https://doi.org/10.17148/IJIREICE.2023.11619>

27. Gayitri, H. M., et al. (2024). Wireless charging and optimized solar energy harvesting for electric vehicles. Journal of Xidian University, 18(10). <https://doi.org/10.5281/Zenodo.13891451>, ISSN: 1001-2400 | Scopus Q3

28. Gayitri, H. M., Shashidhar, K., Jayanth, M., & Sojay, M. P. (2024). Hybrid power generation using solar and wind energy. Journal of Xidian University. <https://doi.org/10.5281/zenodo.12217166>

29 Gayitri, H. M., Bhumika, K. P., Sanjana, M. C., Keshav Nanda Sai, Mallikarjun Kanned, & Harish, M. H. (2025). Implementation of a cost-effective Arduino Uno based drone for agricultural applications. In Proceedings of the 2025 International Conference on Emerging Technologies in Electronics and Green Energy (ICETEG). IEEE.

30. Gayitri, H. M., Keshav Swamy, M., Mahadeva Swamy, et al. (2025). ML-based multimodal assistive robotic navigator: A voice-enabled communication and path-adaptive line follower for visually impaired mobility support. In Proceedings of the 2025 International Conference on Emerging Technologies in Electronics and Green Energy (ICETEG) (pp. 1-6). IEEE.
<https://doi.org/10.1109/ICETEG>. ISBN: 978-1-6654-7735-0/25

PhD Guiding

1. Eshwari A Madappa , Assistant professor, Dept of E&C ,registered (JSSSTU) Part time – Nano composites and Tehnology for Electronic application
2. Abhishek G. Assistant professor, Dept of E&C, registered (JSSSTU) Part time— Nano composites and Tehnology for Electronic application
3. Siri Sanjay B, Full time research scholar- registered (JSSSTU) Full time – AI & ML for Health care

Book/ book chapter published

1. Antenna and Microwave Engineering –ISBN:978-93-5757-173-9, publisher : Scientific International Publishing house. 1st Edition- 2023
2. Polymer science , Nano materials and Beyond Exploring the interdisciplinary of materials Research, Edited by Fernando Gomes de souza

Papers Presented in Conference

1. H. M. Gayitri, Murad Al-Gunaid, B. S. Madhukar, Siddaramaiah and A. P. Gnana Prakash, "Effect of lithium chloride content on spectral, electrical and microstructural behaviours of polyvinyl alcohol composites", Intl. Conf. on Advanced Materials and Tech. (ICMAT-16), held at Sri Jayachamarajendra College of Engineering, Mysuru, May 26-28, 2016.
2. H. M. Gayitri, B. S. Madhukar, Siddaramaiah and A. P. Gnana Prakash, "Effect of gamma irradiation on crystalline and conducting properties of polymer nanocomposite films", organized by XL Indian Social Science Congress, and University of Mysore, Mysore, December 19-23, 2016.
3. H. M. Gayitri, T. S. Vinay, Siddaramaiah and A. P. Gnana Prakash, "Lithium barium doped cerium oxide nano materials for dye synthesized solar cell applications", 7th Natl. Conf. on Novel Polymeric Materials (Synthesis, processing & characterization). Polycon-2017, held at Sri Jayachamarajendra College of Engineering, Mysuru, Sept.15- 16, 2017.
4. H. M. Gayitri, M. D. Ayub, and materials Siddaramaiah and A. P. Gnana Prakash, "Synthesis and characterization of nano hybrid materials for super capacitor applications" Innovative Design, Analysis and Development Practices in Aeronautical and Automobile Engineering (IDAD), Vel Tech Rangarajan Dr Sagunthala R&D Institute of Science and Technology, Avadi, Chennai, India. February 22-24, 2018.
5. H. M. Gayitri, Murad Al-Gunaid, B. S. Madhukar, Siddaramaiah and A. P. Gnana Prakash, "Interactive effect of nano-CaCdAl₂O₅ contents on opto-electrical constants of PVA-OH

nanocomposites", Intl. Conf. on Advanced Materials and Tech. (ICMAT-20), held at Sri Jayachamarajendra College of Engineering, Mysuru, January 16 -18, 2020.

6. Gayitri H M, Dheeraj P, Aniruddha S, Prathviraj M V, Santhosh K Paper ID: EC007Title: Integrated IoT Architecture for Automated Drainage and Weather-Responsive Soil Management, In Proceedings of ICOATES 2025 (p. 44). KR Pete Krishna Government Engineering College, Krishnarajapete, Mandya, India.
7. Paper ID: EC008Title: Gayitri H M, Arfan Mohammed Shariff, Improved FASTag Lane System for Efficient Toll, In Proceedings of ICOATES 2025 (p. 44). KR Pete Krishna Government Engineering College, Krishnarajapete, Mandya, India.
8. Gayitri H M, Safety Button using SMS Gateway with GSM Module, EC004, In Proceedings of ICOATES 2025 (p. 44). KR Pete Krishna Government Engineering College, Krishnarajapete, Mandya, India.
9. Gayitri, H. M. Revankar, P., Suravi, B. R., Bhuvanesh, R., & (2025). Cloud-integrated RFID system for real-time data retrieval, automated attendance and multi-center access in educational institutions (Paper ID: EC006). In Proceedings of ICOATES 2025 (p. 44). KR Pete Krishna Government Engineering College, Krishnarajapete, Mandya, India.
10. Gayitri, H. M., Bhumika, K. P., Sanjana, M. C., Keshav Nanda Sai, Mallikarjun Kanned, & Harish, M. H. (2025). Implementation of a cost-effective Arduino Uno based drone for agricultural applications. In Proceedings of the 2025 International Conference on Emerging Technologies in Electronics and Green Energy (ICETEG). IEEE.
11. Gayitri, H. M., Keshav Swamy, M., Mahadeva Swamy, et al. (2025). ML-based multimodal assistive robotic navigator: A voice-enabled communication and path-adaptive line follower for visually impaired mobility support. In Proceedings of the 2025 International Conference on Emerging Technologies in Electronics and Green Energy (ICETEG) (pp. 1-6). IEEE. <https://doi.org/10.1109/ICETEG>. ISBN: 978-1-6654-7735-0/25

Funds received from external agencies

Sl. No.	Title of the Project/workshop	Inventor and his/her group	Funding agency & application no/ Date	amount received in Rs.
1	Next Gen Communications	1 Dr.Gayitri H M (Co-ordinator) 2.Eshwari A M (Co –ordinator)	AICTE-VAANI 2024-2025 17/05/2024	Rs. 2,00,000/-
2	Solar energized Smart Umbrella for street vendors	1. Dr.Gayitri H M 2. Priyanka 3. Chaitra 4. Ranjitha 5. Harshitha	KSCST-SPP 24 /04/2023	Rs.5,000/-
3	Hand gesture recognition and voice conversion Sytem for speech Impaired	1. Dr. Gayitri H M 2. Harshitha C A 3. Suhas Adhikari	KSCST-SPP 11/05/2022	Rs.7,000/-
4.	Synthesis and characterization of metal oxide Nanocomposites for super capacitor applications	1. Dr. Gayitri H M 2. Chandrakanth K N 3. Iram Hasan	KSCST-SPP 24/04/2021	Rs. 5,000/-

Patents filed /published/Granted

Sl. No.	Title of the invention	Inventor and his/her group	Patent application filled date	Patent No. if notified with date & year
1	Smart borewell rescue solution	1 Dr.Gayitri H M 2.Shishira 3.Sanjana 4.Smayana 5.Smaitha Raj	23/01/2025	Patent Design grant No: 445342-001 Date :23/01/2025 granted :2/07/2026
2	An Image processing Device Based on Machine learning for plant disease Identification	1 Dr.Gayitri H M 2.Dr Nagalambika Prasad 3. Dr. J R Kumar 4.Dr. Chjandrashekar S 5.Mr. Akash Patel M P 6.Ms. Anusha 7. Ms. Noor Fathima	27/12/2023	Patent Design grant No: 403229-001 Date :02/02/2024
3	Multipurpose ATM card	1.Suhail Khan 2.Abdur Rahmaan 3.Daarain M.Khan	29/03/ 2023	Filed

		4.Kshithij V S		Patent Number: 382290-001
4	Hand gesture communication and Information Control	1.Gayitri H M 2.Rabi Sudheer 3.Pramodini 4.Ramya	08/02/2022	Published Dt:11/2/2022
5	Novel Nano Coating Based Opto Electronic Devices	1.Dr.Kumar J R 2.Dr.Suma G R 3.Dr. Vidya C 4.Dr. Gayitri H M	05/05/2022	Published Dt:20/5/2022
6	IoT-Based Device for Parkinson's Disease Detection and Monitoring	1 Charan S M 2.Gayitri H M 3.Dr. Nagalambika Prasad 4. Dr. J R Kumar 5. Eshwari A M 6.Punithkumar NK 7.DEEKSHITH R 8.Raksha R	13/02/ 2026	Patent Filed Number: 490922-001 CBR Number: 203647