

Name of Faculty Dr. Puli Ashok Kumar

Designation Assistant Professor

Nature of Job/Appointment Regular

Date of Joining 01-12-2022

E-mail ashokkumarp\_ece@cbit.ac.in



Education Qualifications	Name of the Degree	Class
Ph.D.	Doctor of Philosophy (ECE) Koneru Lakshmaiah Education Foundation (Deemed to be University), Vaddeswaram, Guntur, Andhra Pradesh.	Awarded (Full Time)
PG	M.Tech (Very Large Scale Integration, ECE) Koneru Lakshmaiah Education Foundation (Deemed to be University), Vaddeswaram, Guntur, Andhra Pradesh	First
UG	B.Tech (ECE) CVR College of Engineering, Mangalpally, Ibrahimpattanam, Hyderabad, Telangana.	Distinction
Work Experience		
Teaching	1 Year 11 Months	
Research	--	
Industry	--	
Others	--	
Area of Specialization	VLSI, MEMS	
Academic Identity	Vidwan-ID: 338991 Researcher Id: rid44358 Web of Science: ABL-0931-2022	Scopus Id: 57201189894 Orcid Id: 0000-0002-2430-0580
Professional Memberships	--	
Responsibilities held at Institution Level	--	
Responsibilities held at Department Level	---	
Research Guidance		
Awards Received	i. Received CSIR SRF award in 2021 ii. JRF & SRF in DST – SERB Sponsored Project under ECRA	
Courses Handled at Under Graduate / Post Graduate Level.	VLSI Design, System Design through Verilog, Switching Theory and Logic Design, CMOS Digital IC Design, MEMS Technology and its Applications, CPLD & FPGA Architectures and Applications,	
No. of Papers Published	National Journals --- National Conference ---	International Journals – 31 International Conference –05
Projects Carried out		----
Patents		----
Technology Transfer		----
Invited Speaker		----
No. of Books/Chapter Published with details		----

Details of Short-Term Training Programs/Faculty Development Programs/Seminars/Workshops. Other Trainings (**Attended and/or Organized**).

1. INUP Familiarization Workshop on Basic Training Program in Nano Science and Technology on 10-12-Sep-2018 - CeNSE, IISc, Bangalore.
2. INUP Hands – on Training Workshop on Advanced Training Program on Nanofabrication and Characterization Techniques on 20-30 Aug-2019 - CeNSE, IISc, Bangalore.
3. Advances in MEMS Devices for Space Application (NWAMSA-18) conducted by Microelectronics research group (MERG) at K L University, on 24th February, 2018.
4. Recent Advances in RF and Bio MEMS Devices for Engineering Applications” conducted by Microelectronics research group (MERG) at K L University, on 30th and 31st march, 2017.
5. Recent Trends in MEMS, NEMS & VLSI (NWRTMNV-16) conducted by Microelectronics research group (MERG) at K L University, on 9th and 10th march, 2016.

Details of Journal Publications/ Conferences

1. Attended and presented poster in “International Conference on Material Science Processing and Applications” (ICMPA) at VIT University, on 14-16th December, 2016.
2. Attended and presented a paper in International Conference on Microelectronics “MICRO 2017” at Darjeeling on 3-4th June, 2017.
3. Attended and presented a paper in 7th International conference on Computing, Communication and Sensor Network, 27th -28th October, 2018 at Biswa Bangla Convention Centre, NewTown, Kolkata, India.

### International Journal publications

Ashok Kumar, P., Karumuri, S. R., Kondavitee, G. S., & Guha, K. (2022). Design and performance analysis of a low-pull-in-voltage RF MEMS shunt switch for millimeter-wave therapy, IoT, and 5G applications. *Journal of Computational Electronics*, 21(2), 522-529.

Kumar, P. A., Rao, K. S., Sravani, K. G., Balaji, B., Aditya, M., Guha, K., & Elsinawi, A. (2021). An intensive approach to optimize capacitive type RF MEMS shunt switch. *Microelectronics Journal*, 112, 105050.

Kumar, P. A., Rao, K. S., Balaji, B., Aditya, M., Maity, N. P., Maity, R., ... & Sravani, K. G. (2021). Low pull-in-voltage RF-MEMS shunt switch for 5G millimeter wave applications. *Transactions on electrical and electronic materials*, 22, 821-832.

Kumar, P. A., Rao, K. S., & Sravani, K. G. (2021). Effect of perforations on fabricated iterative meandered RF MEMS switch for millimeter wave applications. *Microsystem Technologies*, 27(10), 3611-3616.

Kumar, P. A., Rao, K. S., & Sravani, K. G. (2020). Design and simulation of millimeter wave reconfigurable antenna using iterative meandered RF MEMS switch for 5G mobile communications. *Microsystem Technologies*, 26, 2267-2277.

Rao, K. S., Kumar, P. A., Guha, K., Sailaja, B. V. S., Vineetha, K. V., Baishnab, K. L., & Sravani, K. G. (2021). Design and simulation of fixed-fixed flexure type RF MEMS switch for reconfigurable antenna. *Microsystem Technologies*, 27, 455-462.

- Kumar, P. A., Sravani, K. G., Sailaja, B. V. S., Vineetha, K. V., Guha, K., & Rao, K. S. (2018). Performance analysis of series: shunt configuration based RF MEMS switch for satellite communication applications. *Microsystem Technologies*, 24, 4909-4920.
- Rao, K. S., Sateesh, J., Guha, K., Baishnab, K. L., **Ashok, P.**, & Sravani, K. G. (2020). Design and analysis of MEMS based piezoelectric micro pump integrated with micro needle. *Microsystem Technologies*, 26, 3153-3159.
- Sravani, K. Girija, D. Prathyusha, K. Srinivasa Rao, P. Ashok Kumar, G. Sai Lakshmi, Ch Gopi Chand, P. Naveena, Lakshmi Narayana Thalluri, and Koushik Guha. "Design and performance analysis of low pull-in voltage of dimple type capacitive RF MEMS shunt switch for Ka-band." *IEEE Access* 7 (2019): 44471-44488.
- Rao, K. Srinivasa, B. V. S. Sailaja, K. Girija Sravani, K. V. Vineetha, P. Ashok Kumar, D. Prathyusha, G. Sai Lakshmi, CH Gopi Chand, and Koushik Guha. "New Analytical Capacitance Modeling of the Perforated Switch Considering the Fringing Effect." *IEEE Access* 7 (2019): 27026-27036.
- Rao, K. Srinivasa, Ch Gopi Chand, K. Girija Sravani, D. Prathyusha, P. Naveena, G. Sai Lakshmi, P. Ashok Kumar, and T. Lakshmi Narayana. "Design, modeling and analysis of perforated RF MEMS capacitive shunt switch." *IEEE access* 7 (2019): 74869-74878.
- Srinivasa Rao, K., Shaik Shoukat Vali, P. Ashok Kumar, and K. Girija Sravani. "Design and Analysis of MEMS Electro spray Thruster Device." *Transactions on Electrical and Electronic Materials* 22 (2021): 204-210.
- Sravani, K. Girija, D. Prathyusha, G. R. K. Prasad, Ch Gopi Chand, P. Ashok Kumar, Koushik Guha, and K. Srinivasa Rao. "Design of reconfigurable antenna by capacitive type RF MEMS switch for 5G applications." *Microsystem Technologies* (2020): 1-9.
- Rao, K. Srinivasa, W. Samyuktha, D. Vazad Vardhan, B. Girish Naidu, P. Ashok Kumar, K. Girija Sravani, and Koushik Guha. "Design and sensitivity analysis of capacitive MEMS pressure sensor for blood pressure measurement." *Microsystem Technologies* 26, no. 8 (2020): 2371-2379.
- Rao, K. Srinivasa, K. Vasanth, P. Ashok Kumar, Koushik Guha, and K. Girija Sravani. "Design and of analysis of SPDT Ohmic RF MEMS switch." *Microsystem Technologies* 26, no. 8 (2020): 2381-2387.
- Rao, K. Srinivasa, Y. Sundar Sai Kumar, K. Sai Sree Rohini, P. Ravi, K. G. Sravani, and P. Ashok Kumar. "Design and analysis of MEMS based electro spray thruster." *Microsystem Technologies* 26 (2020): 2005-2012.
- Srinivasa Rao, K., B. Mohitha Reddy, V. Bala Teja, G. V. S. Krishnateja, P. Ashok Kumar, and K. S. Ramesh. "Design and simulation of MEMS based capacitive pressure sensor for harsh environment." *Microsystem Technologies* 26, no. 6 (2020): 1875-1880.
- Srinivasa Rao, K., Md Hamza, P. Ashok Kumar, and K. Girija Sravani. "Design and optimization of MEMS based piezoelectric actuator for drug delivery systems." *Microsystem Technologies* 26 (2020): 1671-1679.
- Rao, K. Srinivasa, P. Naveena, TV Aravind Swamy, P. Ashok Kumar, Koushik Guha, and K. Girija Sravani. "Design and performance analysis of self-similar reconfigurable antenna by cantilever type RF MEMS switch." *Microsystem Technologies* 28, no. 3 (2022): 733-744.
- Rao, K. Srinivasa, B. V. S. Sailaja, K. V. Vineetha, P. Ashok Kumar, Koushik Guha, and K. Girija Sravani. "Design and analysis of asymmetric structure capacitive RF MEMS shunt switch." *Microsystem Technologies* 27 (2021): 503-513.
- Rao, K. Srinivasa, P. S. Mounika, P. Pavan, V. Guru, N. Dinesh, P. Ashok Kumar, K. Vineetha, and K. Girija Sravani. "Design, simulation and analysis of RF-MEMS shunt capacitive switch for 5G application." *Microsystem Technologies* 25 (2019): 4197-4208.
- Vineetha, K. V., K. Girija Sravani, B. V. S. Sailaja, P. Ashok Kumar, Koushik Guha, Sarat Kr Kotamraju, V. S. V. Prabhakar, and K. Srinivasa Rao. "Performance analysis of MEMS sensor for the detection of cholera and diarrhea." *Microsystem Technologies* 24 (2018): 3705-3712.
- Vineetha, K. V., P. Ashok Kumar, B. V. S. Sailaja, Koushik Guha, K. Girija Sravani, and K. Srinivasa Rao. "Design of MEMS sensor for the detection of cholera and diarrhea by capacitance modulation." *Microsystem Technologies* 24 (2018): 3371-3379.
- Rao, K. Srinivasa, J. Sateesh, Koushik Guha, K. L. Baishnab, P. Ashok, and K. Girija Sravani. "Design and analysis of MEMS based piezoelectric micro pump integrated with micro needle." *Microsystem Technologies* 26 (2020): 3153-3159.
- Ravirala, Akshay Kumar, Leela Koteswari Bethapudi, Jeevani Kommareddy, Bhanu Sai Thommandru, Sateesh Jasti, Prakash Raju Gorantla, Ashok Puli, Girija Sravani Karumuri, and Srinivasa Rao Karumuri. "Design and performance analysis of uniform meander structured RF MEMS capacitive shunt switch along with perforations." *Microsystem Technologies* 24 (2018): 901-908.

Vinay, P., S. S. Venkata, M. Hemanth, and A. Saiteja. "Design and simulation of MEMS based accelerometer for crash detection and air bags deployment in automobiles." *International Journal of Mechanical Engineering and Technology* 8, no. 4 (2017): 424-434.

P. Ashok Kumar, G.K.S. Prakash Raaju, K. Srinivasa Rao, "Design and simulation of Capacitive Type Comb-Drive Accelerometer to Detect Heart Beat Frequency", *Mechanics, Materials Science & Engineering*, Vol. 11(1), pp. 1-8 July 2017.

P. Ashok Kumar and K. Srinivasa Rao, "Performance of comb drive accelerometer to Detect heart beat vibrations", *Journal of Mechanics and MEMS Serial Publications*, Vol.9, No.1, pp. 97-105, June 2017

Kumar, P. Ashok, R. G. K. S. Prakash, and K. Srinivasa Rao. "Design and simulation of capacitive type comb-drive accelerometer to detect heart beat frequency." *International Journal of Biosen Bioelectron* (2017): 90-91.

Raju, GKS Prakash, P. Ashok Kumar, K. Srinivasa Srinivasa Rao, and Vanaja Aravapalli. "Design and simulation of cantilever based MEMS bimorph piezoelectric energy harvester." *Mechanics, Materials Science & Engineering Journal*, Vol.9, no. 1 (2017).

P. Michael Preetam Raj, P. Ashok kumar, P.G.R.Alekhyia, K.L.Manasa, G.S.Spandana, Sliced BFS, *International Refereed Journal of Engineering and Science (IRJES)*, Vol.5(2), pp. 12 -16, February 2016

Jeet Ghosh, Sandip Ghosal, Debasis Mitra, S.R. Bhadra Chaudhuri, Mutual coupling reduction between closely placed microstrip patch antenna using meander line resonator. *Progress In Electromagnetics Research Letter*, Vol. 59, pp. 115–122, 2016.

#### **International Conference Publications**

P.Ashok Kumar, N. Siddaiah, K.Vidyullatha, E.S.S.Lakshman, J.Rajesh, V.Sreeja and K.Srinivasa Rao: Design and Model analysis of  $\pi$ -shaped cantilever based RF MEMS switch for wireless applications. 4th International Conference on Microelectronics, Circuits and Systems in 3rd - 4th June, 2017, at Darjeeling, West Bengal.

B V S Sailaja, D Manaswi, K V Vineetha, P Ashok Kumar, Koushik Guha, K Girija Sravani, K Srinivasa Rao: Design a novel structure of shunt Configuration based Switch via asymmetric structures. 6th International Conference on 'Computing, Communication and Sensor Networks', CCSN 2017, Kolkata; 01/2018

K V Vineetha, P Ashok Kumar, B V S Sailaja, Koushik Guha, K Girija Sravani, K Srinivasa Rao: Design and Simulation of Circular Type Tunable Patch Antenna. 6th International Conference on Computing, Communication and Sensor Networks', CCSN 2017, Kolkata; 01/2018.

Akula Susmitha, Thiparani Sravani, Bhogadula Yogitha, G. Keerthika, M. Sonali, P. Ashok Kumar, K. Girija Sravani, K. Srinivas Rao: Design and Simulation of a MIM Capacitor Type RF MEMS Switch for Surface Radar Application: Proceedings of the Fourth ICMEET 2018. *Microelectronics, Electromagnetics and Telecommunications*, 01/2019: pages 443-452; , ISBN: 978-981-13-1905-1, DOI:10.1007/978-981-13-1906-8\_46

V. Durga Bhavani, D. Indra Jagadeesh, K. Girija Sravani, P. Ashok Kumar, Koushik Guha, K. Srinivasa Rao: Design and Implementation of MEMS Baseless Mouse: Proceedings of the Fourth ICMEET 2018. *Microelectronics, Electromagnetics and Telecommunications*, 01/2019: pages 587-595; , ISBN: 978-981-13-1905-1, DOI:10.1007/978-981-13-1906-8\_60.