CURRICULUM VITAE

Dr. Puli Ashok Kumar.

H.No: 2-107, Malkapuram Village,

Thullur Mandal, Guntur – 522503, Andhra Pradesh.

Ph No: +91 7659857980

Email: puliashok9915@gmail.com, ashok09411@gmail.com.



Objective

To be a part of Teaching/Research organization where I can have ample opportunities to prove my abilities, enhance my knowledge and talent for the development of both the organization and myself in the fields of Teaching and Research & Development.

Research Profile

Data Base (Indexing)	Profile URL	
SCOPUS	https://www.scopus.com/authid/detail.uri?authorId=58198175800	9
GOOGLE SCHOLAR	https://scholar.google.com/citations?user=4PTyeQsAAAAJ&hl=en&oi=sra	10
PUBLONS	https://publons.com/wos-op/researcher/4711962/ashok-puli/	8
ORCID	https://orcid.org/0000-0002-2430-0580	

Work Experience

Designation	College / University	Duration
Associate Professor	Potti Sriramulu Chalavadi Mallikarjunarao College of Engineering & Technology, ijayawada, Andhra Pradesh 520001	17 th January 2024 onwards
Assistant Professor	Chaitanya Bharathi Institute of Technology, Gandipet, Ranga Reddy, Hyderabad – 500075, Telangana	1 st December 2022 to 13 th January 2024
Assistant Professor	Sri Vasavi Engineering College, Pedatadepalli, West Godavari Dist., Tadepalligudem, Andhra Pradesh – 534101.	1 st March 2021 to 26 th November 2022
Senior Research Fellow	Koneru Lakshmaiah Education Foundation (Deemed to be University), Guntur, Andhra Pradesh – 522502.	12 th November 2018 to 11 th November 2019
Junior Research Fellow	Koneru Lakshmaiah Education Foundation (Deemed to be University), Guntur, Andhra Pradesh – 522502	20 th July 2017 to 11 th November 2018

Subject Handled

B.Tech: VLSI Technology, CMOS Digital IC Design, VLSI Design. STLD. Design for Testability.

M.Tech: CPLD and FPGA Architectures & Applications, CMOS Digital IC Design, MEMS.

Academic Profile

Qualification	Specialization	College/School	Academic Year	Percentage
Ph. D	VLSI (RF MEMS)	Koneru Lakshmaiah Educational Foundation (Deemed to be University) Andhra Pradesh	2017-2021	AWARDED
Master of Technology	VLSI	K.L Deemed to be University, Vijayawada, Andhra Pradesh.	2015-2017	84%
Bachelor of Technology	ECE	CVR college of engineering, Ibrahimpatnam, Rangareddy district. Telangana State.	2009-2013	73.64%
Board Of Intermediate Education	MPC	Nalanda Junior College, Vijayawada, Krishna district. Andhra Pradesh.	2007-2009	93.6%
Board of Secondary Education	-	Don Bosco High School, Yerrabalem, Guntur district, Andhra Pradesh.	2006-2007	88.8%

Research Areas

VLSI System Design, Reconfigurable Antennas, RF MEMS Switches, Reconfigurable MEMS Filters, MEMS Accelerometers, MEMS Sensors, BIO – SENSORS, MEMS based Energy Harvesters and Microfluidics, MEMS based Drug Delivery Systems.

Technical Exposure

CAD Tools (FEM): COMSOL INTELLISUITE, CADENCE, CST Studio, HFSS, CLEWIN AND SCHEMATIC EDITOR, VHDL, VERILOG, MENTOR GRAPHICS, MATLAB.

Workshops Organized

- ➤ Co Convenor for DST Sponsored 5 Days workshop on "CMOS MEMS Integrated Sensor Technology for Human Centred Applications in Healthcare, Safety and Environmental Sensing: A Theory to Practice" (Amount Sactioned: 75,000/-)
- ➤ Co Convenor for DST Sponsored 5 Days workshop on "Design of Portable IoT Enabled Reconfigurable Antennas for Healthcare Monitoring ---Theory to Practice, A Machine Learning Approach" held on 22nd 26th August, 2022. (Amount Sactioned: 1,00,000/-).

Achievements and Co-Curricular Activities

- > Shortlisted and Awarded CSIR Direct SRF but not availed due to PhD completion.
- ➤ Shortlisted and fabricated device through Indian Nanoelectronics User Program conducted by Department of CeNSE, Indian Institute of Science, Bengaluru, funded by Ministry of Human Resource Development (MHRD), Ministry of Electronics and Information Technology (MeitY), and Nanomission, Department of Science and Technology (DST), Govt. of India

- Awarded 1st prize in Kalvana Chakravarthi memorial talent test in 10th class.
- > Stood Mandal 1st in SSC in Thullur Mandal, Guntur district.
- > Organized Real Steal event in CIENCIA-2K11 at CVR College of engineering during B.Tech.
- ➤ Awarded 2nd prize in "Poster Presentation" in SAMYAK 2017 at KL University during M.Tech.

Ph. D. Project Details

Title : Design, Modelling, Fabrication and Characterization of RF MEMS Switch

Integrated with Micropatch Antenna for Frequency Reconfigurable

Millimeterwave Applications.

Organization: Koneru Lakshmaiah Education Foundation (deemed to be university)

: The dissertation work is motivated to replace State – of – Art semiconductor switches (such as PIN diodes & FETs) by RF – MEMS Switches due to their superior performance characteristics over radio frequencies which ranges from 3 GHz – 30 GHz. The potentiality to integrate these switches over antennas for frequency reconfigurability made them widely used in microwave and millimeterwave communication systems. Reconfigurable antenna has become a striking topic in the modern and future wireless communication system such as military, satellite, Autonomous Vehicular Driving system, 5G and millimeter therapy because it enables single antenna to be used for multiple systems. The prevalent high voltage actuation mode of RF – MEMS Switches limits the reliability and applications especially, in wireless communications, therefore the thesis mainly focuses on the realization of electrostatic low actuation switches with main emphasis on the pull-in voltage and RF responses. Later, the proposed switch is monolithically integrated on micropatch antenna to achieve reconfigurability in the radiating frequency over millimeter wave frequency range.

Projects undertaken

SRF & JRF

Description

Title : Design, Fabrication And Characterization of MEMS Bio-Sensor for Detection of

Cholera And Diarrhea.

Organization: K.L University, Vijayawada

Description: Biosensors are increasingly important devices that have generated huge impact on

our lives. Many of them have already been used in clinical applications for early detection of diseases. As the micromachining technology has been growing in an unprecedented pace, the combination of micromachining technology and traditional biosensing technologies provides real opportunities to realize a new generation of biosensors with clear advantages of low cost, miniaturized, and high sensitivity. In this project we analysed high sensitive micro-channel based bio-sensor for detection

of E-coli and V-cholerae bacteria in water.

Publications

Total No. of Publications : 37 (32 Journals + 5 Conferences)

Journal Publications Published : 32 Science Citation Index: 23

Publishers : IET, IEEE, Springer, Bentham Science, John Wiley & Sons.

Targeted Journals : IET Nanobiotechnology, IEEE ACCESS, Microsystem

Technologies, Journal of Numerical Modelling, Micro and Nano

Systems.

Journal Full length Papers under Review

1. Design, Fabrication and Characterization of Reconfigurable Antenna integrated with Iterative Meander type RF MEMS Switch for Millimeterwave Applications

P. Ashok Kumar, K. Srinivasa Rao et. al

Journal: IEEE Transaction on Electronic Devices Indexing: SCI, Scopus, IET, Web

of Science, ProQuest Publisher: IEEE

(Under Review) Impact Factor: 2.913

Journal Full length Papers Published

33. Dual bit control and match-line division in content addressable memory for low energy

S.V.V. Satyanarayana, P. Ashok Kumar, K. Baboji, M. Priyadharshni

Journal: e-Prime - Advances in Electrical Engineering, Indexing: Scopus

Electronics and Energy

Date of Publication: 12 December 2023 (Accepted)

Publisher: Elsevier
DOI: https://doi.org/10.1016/j.prime.2023.100396

Impact Factor: 1.5

32. Modelling, Fabrication and Testing of RF Micro-Electro-Mechanical-Systems Switch.

P. Ashok Kumar, K. Srinivasa Rao et. al

Journal: IEEE open Journal of Nanotechnology Indexing: SCI, Scopus, Materials

SCI, INSPEC

Date of Publication: 26 December 2022 Publisher: IEEE
DOI: 10.1109/OJNANO.2022.3232182 Impact Factor: 2.212

31. Design and Performance Analysis of Low Pull – in Voltage RF MEMS Shunt Switch for

Millimeterwave Therapy, IoT and 5G Applications

P. Ashok Kumar, K. Srinivasa Rao et. al

Journal: Journal of Computational Electronics Indexing: SCI, SCI-E, Scopus,

Issue 21, pages. 522–529

https://doi.org/10.1007/s10825-022-01863-3

Publisher: Springer
Impact Factor: 1.807

30. An intensive approach to optimize capacitive type RF MEMS shunt switch

P. Ashok Kumar, K. Srinivasa Rao et. al

Journal: Microelectronics Indexing: SCI, SCI-E, Scopus,

Volume 112, Issue 1, Pages. 1-8. Publisher: Elsevier https://doi.org/10.1016/j.mejo.2021.105050 Impact Factor: 1.605

29. Low Pull-in-Voltage RF-MEMS Shunt Switch for 5G Millimeter Wave Applications

P. Ashok Kumar, K. Srinivasa Rao et. al

Journal: Transaction on Electrical and Electronic Indexing: Scopus, E-SCI,

Materials INSPEC, UGC-CARE list (India)

Volume. 22, Issue 1, Pages Publisher: Springer

https://doi.org/10.1007/s42341-021-00304-5 Impact Factor: 0.185 (SJR)

28. Effect of Perforations on Fabricated Iterative Meandered RF MEMS Switch for Millimetre Wave Applications

P. Ashok Kumar, K. Srinivasa Rao et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Volume 27, Issue 1, Pages: 3611 - 3616 Publisher: Springer DOI: https://doi.org/10.1007/s00542-020-05107-x Impact Factor: 1.737

27. Design and Simulation of Millimetre wave Reconfigurable Antenna using Iterative Meandered RF MEMS Switch for 5G mobile communications

P. Ashok Kumar, K. Srinivasa Rao et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Volume 26, issue 7, pp.2267-2277, July 2020 Publisher: Springer DOI: https://doi.org/10.1007/s00542-019-04606-w Impact Factor: 1.737

26. Design and simulation of fixed–fixed flexure type RF MEMS switch for reconfigurable antenna

P. Ashok Kumar, K. Srinivasa Rao et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol.27, Issue.1, pp 455 - 462

Publisher: Springer

Political (10 1007) 00542 019 2002 2

DOI: https://doi.org/10.1007/s00542-018-3983-2 Impact Factor: 1.737

25. Performance analysis of series - shunt configuration based RF MEMS switch for satellite communication applications

P. Ashok Kumar, K. Srinivasa Rao et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol.24, Issue 12, pp 4909–4920 Publisher: Springer DOI: https://doi.org/10.1007/s00542-018-3907-1 Impact Factor: 1.737

 Design, Simulation and Analysis of MEMS Microneedle for Micropump in drug Delivery Systems

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: IET Nanobiotechnology Indexing:, IET, SCI-E, Scopus

Volume.15, Issue.5, Pages 484-491 Publisher: The IET https://doi.org/10.1049/nbt2.12013 Impact Factor: 1.859

23. Design and Performance Analysis of Low Pull-In Voltage of Dimple Type Capacitive RF MEMS Shunt Switch for Ka-Band

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: IEEE Access Indexing: Web of Science,

Scopus. EBSCO

Vol. 7, pp. 44471 - 44488, April 2019 Publisher: IEEE
Doi: 10.1109/ACCESS.2019.2905726 Impact Factor: **4.098**

22. New Analytical Capacitance Modelling of the Perforated Switch Considering the Fringing Effect

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: IEEE Access Indexing: Web of Science,

Scopus. EBSCO

Vol. 7, pp.27026-27036, March 2019 Publisher: IEEE
Doi: 10.1109/ACCESS.2018.2889724 Impact Factor: **4.098**

21. Design, Modeling and Analysis of Perforated RF MEMS Capacitive Shunt Switch

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: IEEE Access Indexing: Web of Science,

Scopus. EBSCO

Vol. 7, pp.27026-27036, March 2019 Publisher: IEEE
Doi: 10.1109/ACCESS.2019.2914260 Impact Factor: **4.098**

20. Design and Analysis of MEMS Electrospray Thruster Device

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Transactions on Electrical and Electronic Indexing: Scopus, E-SCI,

Materials INSPEC, UGC-CARE list

(India)

Vol. 22, pp. 204 – 210 Publisher: Springer

19. Design of reconfigurable antenna by capacitive type RF MEMS switch for 5G applications

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol. 28, pp. 845 - 853

Publisher: Springer

DOI: https://doi.org/10.1007/s00542-020-04958-8

Impact Factor: 1.737

 Design and sensitivity analysis of capacitive MEMS pressure sensor for blood pressure measurement

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol. 26, Issue:8, pp. 2371–2379 Publisher: Springer DOI: 10.1007/s00542-020-04777-x Impact Factor: 1.737

17. Design and analysis of SPDT Ohmic RF MEMS switch

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol. 26, Issue:8, pp.2381–2387 Publisher: Springer https://doi.org/10.1007/s00542-020-04778-w Impact Factor: 1.737

16. Design and analysis of MEMS based electrospray thruster

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Publisher: Springer
DOI: 10.1007/s00542-020-04751-7
Impact Factor: 1.737

15. Design and simulation of MEMS based capacitive pressure sensor for harsh environment.

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol. 26, Issue:8, pp.1875-1880 Publisher: Springer DOI: 10.1007/s00542-019-04735-2 Impact Factor: 1.581

14. Design and optimization of MEMS based piezoelectric actuator for drug delivery systems

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol. 26, Issue:5, pp. 1671 - 1679 Publisher: Springer DOI: 10.1007/s00542-019-04712-9 Impact Factor: 1.737

13. Design and performance analysis of self-similar reconfigurable antenna by cantilever type RF

MEMS switch

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Publisher: Springer

DOI: https://doi.org/10.1007/s00542-019-04370-x Impact Factor: 1.737

12. Design, simulation and analysis of RF-MEMS shunt capacitive switch for 5G application

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol. 25, Issue:11, pp. 4197 - 4208 Publisher: Springer DOI: https://doi.org/10.1007/s00542-019-04389-0 Impact Factor: 1.581

11. Performance analysis of MEMS sensor for the detection of cholera and diarrhea.

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol.24, Issue.9, pp.3705–3712 Publisher: Springer DOI: https://doi.org/10.1007/s00542-018-3810-9 Impact Factor: 1.581

10. Design of MEMS sensor for the detection of cholera and Diarrehea by capacitance modulation.

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol.24, Issue.8, pp. 3371–3379 Publisher: Springer DOI: https://doi.org/10.1007/s00542-017-3702-4 Impact Factor: 1.581

9. Design and analysis of MEMS based piezoelectric micro pump integrated with micro needle.

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol.24, Issue.6, pp.1-7, March.2018 Publisher: Springer DOI: https://doi.org/10.1007/s00542-018-3807-4 Impact Factor: 1.581

8. Design and performance analysis of uniform meander structured RF MEMS capacitive shunt switch along with perforations.

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol.24, Issue.2, pp.901-908, Feb.2018 Publisher: Springer DOI: https://doi.org/10.1007/s00542-017-3403-z Impact Factor: 1.581

7. Design and analysis of asymmetric structure based capacitive RF MEMS shunt switch.

K. Srinivasa Rao, P. Ashok Kumar et. al

Journal: Microsystem Technologies Indexing: SCI, Scopus, SCI-E,

UGC-CARE list (India)

Vol.27, Issue.8, pp. 503–513, Aug.2018. Publisher: Springer

6. Design and Simulation of MEMS based Accelerometer for Crash Detection and Air Bags Deployment in Automobiles.

P. Ashok Kumar, K. Srinivasa Rao

Journal: International Journal of Mechanical

Engineering and Technology (IJMET)

Volume 8, Issue 4, April 2017, pp. 424–434 Publisher: IAEME

 Design and Simulation of Capacitive Type Comb-Drive Accelerometer to Detect Heart Beat Frequency

P. Ashok Kumar, K. Srinivasa Rao,

Journal: Mechanics, Materials Science & Engineering Indexing: Web of Science

(Thomson Reuters)

Indexing: Scopus

DOI 10.2412/mmse.20.62.334

4. Performance of Comb-Drive Accelerometer to Detect Heart Beat Vibrations

P. Ashok Kumar, K. Srinivasa Rao,

Journal: Journal of Mechanics and MEMS

3. Design and Simulation of Capacitive Type Comb-Drive Accelerometer to Detect Heart Beat.

P. Ashok Kumar, K. Srinivasa Rao

Journal: International Journal of Biosensors & Bioelectronics

DOI: 10.4172/2155-6210.1000238 Publisher: MedCrave

2. Design and Simulation of Cantilever Based MEMS Bimorph Piezoelectric Energy Harvester.

P. Ashok Kumar, K. Srinivasa Rao

Journal: Mechanics, Materials Science & Engineering Indexing: Web of Science

DOI 10.2412/mmse.16.9.490

1. Sliced BFS.

P. Ashok Kumar, P.G.R.Alekhya, K.L.Manasa, G.S.Spandana

Journal: International Refereed Journal of Engineering and Science (IRJES)

Volume 5, Issue 2 (February 2016), PP.12-16

Conference Proceedings: Book Chapters

- 1. P.Ashok Kumar, N. Siddaiah, K. Vidyullatha , E.S.S. Lakshman, J.Rajesh, , V. Sreeja and K. Srinivasa Rao: *Design and Model analysis of* π -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
- **3.** 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', CCSN2017, Kolkata; 01/2018.
- 4. 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
- 5. 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

Conferences Attended

- 1. Attended and presented poster in "International Conference on Material Science Processing and Applications" (ICMPA) at VIT University, on 14-16th December, 2016.
- 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.

Workshops

- 1. Attended Two days "INUP Familiarization Workshop on Basic Training Program in Nano Science and Technology" on 10-12-Sep-2018 CeNSE, IISc, Bangalore.
- Attended Ten days "INUP Hands on Training Workshop on Advanced Training Program on Nanofabrication and Characterization Techniques" on 20-30 Aug-2019 -CeNSE, IISc, Bangalore.
- 3. Attended a one day National Workshop on "Advances in MEMS Devices for Space Application" (NWAMSA-18) conducted by Microelectronics research group (MERG) at K L University, on 24th February, 2018.

- 4. Attended a Two day National Workshop on "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. Attended a Two day National Workshop on "Recent Trends in MEMS, NEMS & VLSI" (NWRTMNV-16) conducted by Microelectronics research group (MERG) at K L University, on 9th and 10th march, 2016.

Strengths

- > Hard work.
- > Discipline and Dedication.
- ➤ Willing to learn and adapt to new opportunities and challenges.

Extra Circular Activities

Have been actively participated in Cricket, Football and volley ball during B.Tech and M.Tech.

Hobbies

- Watching TV
- Playing Cricket.

Personal Details

Name : P. Ashok Kumar

Qualification : Ph.D.

Date of Birth : 22-07-1991

Gender : Male

Father's Name : P Issaku (Late)

Mother's Name : P Pramila Rani

Nationality : Indian
Marital Status : Married

Languages known : Telugu, Hindi, English.

Address : 2-107, Malkapuram village, Thullur mandal, Guntur-522503.

Email ID : puliashok9915@gmail.com , ashok09411@gmail.com

Declaration:

I hereby declare that above mentioned information is true to the best of my knowledge and belief.

Station: Malkapuram.

Date: 18/04/2024

P. Ashok Kumar