Dr. Mourina Ghosh
Associate Professor

PhD (ISM Dhanbad)

Department of Electronics &
Communication Engineering

✉ mourina@iiitg.ac.in

Joined the Institute in June 2015

About

Hello, welcome to my Homepage. I am working as an Assistant Professor in the department of Electronics and Communication Engineering at Indian Institute of Information Technology, Guwahati. I have joined the institute in May, 2015, before that I have completed my Ph.D in the year 2015 from Indian Institute of Technology (Indian School of Mines), Dhanbad under the supervision of Dr. Sajal K Paul. Currently I am working in the area of VLSI Design.

For more information Please Visit.

Research Interests

Current Mode Circuits, Bipolar and MOS Analog Integrated Circuits.

- Microelectronics
- Current Mode Circuits
- Analog and Mixed Signal IC Design
- Neuromorphic Analog VLSI Circuits

Teaching

- Analog Circuits
- VLSI Design
- Basic Electronics
- Measurement and Instrumentation
- Low Power VLSI Design
- Analog Integrated Circuit Lab
- VLSI Design Lab
- Basic Electronics Lab

Invited talks

- A webinar on "Design of Analog Filters Using OPAMP and diffent Current Mode Building Blocks" at Dept. of ETCE in palan Technical Campus and Dept of ECE at Palian College of Management and Technology, West Benal on 4th August, 2020.

- Invited lecture in "Analog Circuit Design Using ORCAD: Hands On Training" in the department of Electronics and Communication Engineering, National Institute of Technology Manipur, India from 30.11.2021 to 04.12.2021 in Virtual mode

- nvited Speaker in One Week Workshop in Electronic Circuit and PCB Designing (ECPCD-2022), organized by Dept. of E.C.E and Dept. of EE,K.K.Polytechnic, Dhanbad, India from 26-30th September, 2022

- Title: "VLSI Based System Design" 12th – 14th March, 2021, Co ordinator: Dr.Mourina Ghosh in association with IIIT Guwahati (sponsored by TEQIP III), University of California, SantaCruz, Technion – Israel Institute of Technology, IIT Kanpur, IIT Roorkee, IIT Guwahati, IIT Jodhpur, IIT Mandi, NIT Manipur,NIT Meghalaya, University of Calcutta, Jamia Millia Islamia- A Central University

Students Supervision

PhD Students

1. Shekhar Suman Borah (Completed)
2. Gourango Mondal
3. Amal Thomas

B.Tech Students

1. Ankur Singh - 2017 batch
2. Shivika Agarwal - 2017 batch
3. Chandrima Bhattacharya - 2016 batch
4. Yugendra Vavila - 2016 batch
5. Suyash Maruya - 2016 batch
6. Abhinav Sinha - 2015 batch
7. Kunal Yadav - 2014 batch
8. Vishal Tiwari - 2013 batch

Publication

Journal

- S. S. Borah, A.Singh, M. Ghosh and A. Ranjan, "S. S. Borah, A.Singh, M. Ghosh and A. Ranjan, "Electronically Tunable Higher-Order Quadrature Oscillator Employing CDBA," Microelectronics Journal ,Vol. 108, 104985, 2021.", (2021),

- A. Ranjan, M. Ghosh and S.K.Paul, "A. Ranjan, M. Ghosh and S.K.Paul, "Third Order Voltage Node Active-C Band pass filter," International Journal of Electronics, Vol.102, No.5, pp. 781-791, 2015.", (2015),

- M. Ghosh and S. K. Paul, "M. Ghosh and S. K. Paul, "Design of Lossless Grounded Negative Inductance Simulator Using OTRA," Revue Roumaine Des Sciences Techniquesselri Electrotechnique Et Energétique ,Vol. 59, No 4, pp. 381-390, 2014.", (2014),

- M. Ghosh, S. K. Paul, R. K. Ranjan and A. Ranjan, "M. Ghosh, S. K. Paul, R. K. Ranjan and A. Ranjan, "Third Order Universal Filter Using Single Operational Transresistance Amplifier," Journal of Engineering , Vol. 2013, No 1, pp. 1-6, 2013.", (2013),

- M. Ghosh and Sajal K.Paul, "M. Ghosh and Sajal K.Paul, "Design of Grounded Immittance Simulator Using Single CDBA," Journal of VLSI Design Tools & Technology, Vol.3, No 3, pp. 1-10, 2013.", (2013),

- S. K. Paul, M. Ghosh and A. Ranjan, "S. K. Paul, M. Ghosh and A. Ranjan, "Design of Feedback Circuit of Scanning Tunneling Microscope," Journal of Electronic Devices ,Vol. 13, pp. 997-1001, 2012.", (2012),

- A.Kumar, M. Ghosh, A. Ranjan and S. K. Paul, "A.Kumar, M. Ghosh, A. Ranjan and S. K. Paul, "Current Conveyor based CMOS Sinusoidal Oscillator," Journal of Active and Passive Electron Devices , Vol.7, pp. 173-179, 2012.", (2012),

- R.Singh, A.Ranjan, M. Ghoshand Sajal K.Paul, ""Realization of Fourth Order Multiification Filters Using Operational Transresistance Amplifier" ", Journal of Electronic Design Technology,Vol. 3, No 2, (2012), pages. 1-7,

- M. Ghosh, S.Bhattacharya, A. Ranjan and S. K. Paul, "M. Ghosh, S.Bhattacharya, A. Ranjan and S. K. Paul, "Gain Controlled Sinusoidal Oscillator Using Current Controlled Current Conveyor," Journal of VLSI Design Tools & Technology , Vol. 1, No 1, pp. 26-30, 2011.", (2011),

Conference

- S. S. Borah, A. Singh, M. Ghosh, ""A Novel Low-Power Electronically Tunable Higher-Order Quadrature Oscillator using CDBA"", 34th International Conference on VLSI Design & 20th International Conference On Embedded Systems (VLSID 2021), IIT Guwahati, India, Feb 20-24, 2021. (Paper accepted), (2021),

- S. S. Borah, Y. Vavila, C. Bhattacharjee, "S. S. Borah, Y. Vavila, C. Bhattacharjee, A. Singh and M. Ghosh, "Active Higher Order Filter and its Application Employing Current Differencing Buffered Amplifier," Springer International Conference on Fourth Industrial Revolution based Technology and Practices ICFIRTP2020 (IEEE UP Section), Quantum University, Roorkee, Uttarakhand, 2020.", (2020),

- A. Singh, S. S. Borah, M. Ghosh, "A. Singh, S. S. Borah, M. Ghosh, "CDBA Based Quadrature Sinusoidal Oscillator with Non-Interactive Control," 9th IEEE International Conference on Communication and Signal Processing (ICCSP-2020), Melmaruvathur, Tamil Nadu, India, April 9-11, 2020. , IEEE Xplore, DOI: 10.1109/ICCSP48568.2020.9182456.", (2020),

- S. S. Borah, A.Singh, M. Ghosh, ""CMOS CDBA Based 6th Order Inverse Filter Realization for Low-Power Applications"", TENCON IEEE Region 10 Conference, pp. 11-15, Osaka, Japan, Nov 16-19, (2020), IEEE Xplore, DOI 10.1109/TENCON50793.2020.9293817

- A. Singh, S. S. Borah, M. Ghosh, ""Single VOTA Based Grounded Memristor Model and its Applications"", TENCON IEEE Region 10 Conference, Osaka, Japan, Nov 16-19, (2020), pages. 7-10, IEEE Xplore, DOI 10.1109/TENCON50793.2020.9293938

- S. S. Borah, M. Ghosh, ""Interactive and Non-Interactive Control Based Lossless Grounded Negative Inductor Simulator using Current Differencing Buffered Amplifier,", Springer International Conference on Communication, Circuits, and Systems (IC3S 2020), KIIT University, Bhubaneshwar, Odisha, India, Oct 16-18., (2020),

- V. Kumar, B. C. Nagar, S. S. Borah, M. Ghosh, "V. Kumar, B. C. Nagar, S. S. Borah, M. Ghosh, "New Realization of Multi-Function Filter using Bulk-Driven Differential Difference Current Conveyor," 8th IEEE International Conference on Communication and Signal Processing (ICCSP-2019), Melmaruvathur, Tamil Nadu, India, April 4-6, 2019, IEEE Xplore, DOI 10.1109/ICCSP.2019.8698060.", (2019),

- S. Banerjee, S. S. Borah, M. Ghosh, P. Mondal, "S. Banerjee, S. S. Borah, M. Ghosh, P. Mondal, "Three Novel Configurations of Second Order Inverse Band Reject Filter using A Single Operational Transresistance Amplifier," TENCON IEEE Region 10 Conference, pp. 2173-2178, Kochi, India, Oct 16-20, 2016 , IEEE Xplore, DOI 10.1109/TENCON.2019.8929318.", (2019),

- S. Banerjee, P. Mondal, M. Ghosh, "S. Banerjee, P. Mondal, M. Ghosh,"Novel Realization of Second Order Inverse Bandreject Filter and Inverse Allpass Filter Using Operational Transresistance Amplifier," 2019 IEEE Region 10 Symposium (TENSYMP), pp. 623-627,Kolkata, India, 2019. IEEE Xplore, DOI 10.1109/TENSYMP46218.2019.8971031.", (2019),

- S. Banerjee, M. Ghosh, P. Mondal, "S. Banerjee, M. Ghosh, P. Mondal, "OTRA based Realization of Second Order Inverse Lowpass Filter and Inverse Bandpass Filter," 2019 International Conference on Communication and Signal Processing (ICCSP), Chennai, India, 2019, pp. 0148-0152, IEEE Xplore, DOI 10.1109/ICCSP.2019.8698012.", (2019),

- M. Ghosh, S.Bhattacharya, A. Ranjan and S. K. Paul, ""CMOS Sinusoidal Oscillator Using Current Conveyor"", Proc. of International Colloquiums on Computer Electronics Electrical Mechanical and Civil (CEMC-2011) held in ILAHIA College of Engineering and Technology , Kerala, 19-20 September, (2019), pages. 142-144,

- B. C. Nagar, M. Ghosh, "B. C. Nagar, M. Ghosh, "Single OTRA Based Immittance Simulator and its Application," 2018 International Conference on Communication and Signal Processing (ICCSP), Chennai, pp. 0050-0053, 2018. IEEE Xplore, DOI 10.1109/ICCSP.2018.8524297.", (2018),

- B. C. Nagar, M. Ghosh, ""Squarer and Sinusoidal Frequency Doubler Based on Single OTRA"", 2018 2nd International Conference on Power, Energy and Environment: Towards Smart Technology (ICEPE), Shillong, India, (2018), pages. 1-4, IEEE Xplore, DOI 10.1109/EPETSG.2018.8658905.

- M. Ghosh, "M. Ghosh, "Design of Signal Processing Circuits Using Current Mode Analog Building Block", Regional Celebration of Women in Computing, East and North-East organized by CSE department of IIT Guwahati in association with ACM-W, 2015.", (2015),

- R.Singh, A. Ranjan, M.Ghosh and S. K.Paul, ""Realization of Fourth order Voltage mode Low pass Filter using Operational Transresistance Amplifier"", National Conference on Emerging Trends of Electrical, Instrumentation and Communication Engineering (ETEIC 2012) held in Anand Engineering College, Agra, 6-7 April ., (2012),

- M.Ghosh, S.K. Paul and R. K. Ranjan, ""Universal Filter using operational transresistance amplifier"", Proc. of 5th International Conference on Computers and Devices for Communication (CODEC 2012),Kolkata India, Dec 17-19, (2012), IEEE Xplore, DOI 10.1109/CODEC.2012.6509217.

- A.Ranjan, M. Ghosh and S. K. Paul, ""Voltage-Mode Third Order Band Pass Filter Employing Operational Transresistance Amplifier"", Proc. of 5th International Conference on Computers and Devices for Communication, Kolkata, India, Dec 17-19, (2012), IEEE Xplore, DOI 10.1109/CODEC.2012.6509215

- A.Ranjan, M. Ghosh and S. K. Paul, ""Realization of Current-Mode Third Order Band Pass Filter Using DOCCCII",", Proc. of National Conference on Frontiers in Electronics Communication and Instrumentation Technology, Dhanbad, India, Nov 3-4, (2011),

Book Chapters

- S. S. Borah, A. Singh, M. Ghosh, "S. S. Borah, A. Singh, M. Ghosh,, "Two Novel Configurations of Electronically Tunable Quadrature Sinewave Oscillator using CDBA," In: Mallick P.K., Meher P., Majumder A., Das S.K. (eds) Electronic Systems and Intelligent Computing. Lecture Notes in Electrical Engineering, vol 686. Springer, Singapore, 2020. DOI https://doi.org/10.1007/978-981-15-7031-5_27", (2020),

- M. Ghosh, S. Banerjee, S. S. Borah, P. Mondal, "M. Ghosh, S. Banerjee, S. S. Borah, P. Mondal, "Single OTRA-Based Implementation of Second-Order Band Reject Filter (Three Configurations)," In: Goel N., Hasan S., Kalaichelvi V. (eds) Modelling, Simulation and Intelligent Computing. MoSiCom

2020, Dubai, UAE, Lecture Notes in Electrical Engineering, vol. 659, pp. 319-327, Springer, Singapore, 2020. DOI https://doi.org/10.1007/978-981-15-4775-1_34.", (2020),

- M. Ghosh, B. C. Nagar, V. Tiwari, "M. Ghosh, B. C. Nagar, V. Tiwari, "Higher order low-pass filter using single current differencing buffered amplifier," In: Abraham A., Dutta P., Mandal J., Bhattacharya A., Dutta S. (eds) Emerging Technologies in Data Mining and Information Security. Advances in Intelligent Systems and Computing, vol 814. Springer, Singapore, 2018. DOI https://doi.org/10.1007/978-981-13-1501-5_6", (2018),

IIIT Guwahati

Bongora, Assam
Guwahati -781015
INDIA

0824 2474000

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2020, Dubai, UAE, Lecture Notes in Electrical Engineering, vol. 659, pp. 319-327, Springer, Singapore, 2020. DOI https://doi.org/10.1007/978-981-15-4775-1_34.", (2020),

- M. Ghosh, B. C. Nagar, V. Tiwari, "M. Ghosh, B. C. Nagar, V. Tiwari, "Higher order low-pass filter using single current differencing buffered amplifier," In: Abraham A., Dutta P., Mandal J., Bhattacharya A., Dutta S. (eds) Emerging Technologies in Data Mining and Information Security. Advances in Intelligent Systems and Computing, vol 814. Springer, Singapore, 2018. DOI https://doi.org/10.1007/978-981-13-1501-5_6", (2018),