22-23 NOVEMBER, 2024

6TH INTERNATIONAL CONFERENCE ON EMERGING TECHNOLOGIES: MICRO TO NANO (ETMN-2024)

Prof. Karabi Biswas

(http://www.facweb.iitkgp.ac.in/~karabi/f_karabi.html)

Present Designation: Professor

Dr. Karabi Biswas is a professor in the Department of Electrical Engineering, Indian Institute of Technology Kharagpur, India. Her current research interests are Sensors, Instrumentation, Fractional order systems. She has developed a new circuit element named as fractional-order-capacitor with tuneable parameters. The work has motivated researchers across the world to fabricate fractional-order-capacitor by modulating the dielectric property of the material. The work has opened the door to validate the 300 years old-concept of mathematics called "fractional-calculus". She has also indigenously developed several instruments for precision-agriculture and point-of-care health monitoring. She has received the Friedrich Wilhelm Bessel Research Award in 2021. Presently she is serving as an editor for he journals "IEEE Sensors" and "International Journal of Circuit Theory and Application". She has more than 97000 article reads in ResearchGate and citations in Google Scholar is 2942.

Publications at a Glance

Publication	Number Published
1. Chapter in Books	6
2. International Journals	55
3. International Conferences	35
4. National Conference	11
4. Book (Edited Volume)	1
5. Patent filed	5

International recognition

• **Nominated** as **International management committee observer** for European COSTAction-CA15225, a program of **European Union**, 2017
• Invited to deliver talk to the Training School in University of Catania, Sicily, Italy 5-8September, 2017**: Fully funded by European Union**

• Invited to give talk to the conference (ICNR-18) devoted to the 95-th birth anniversary of Dr.Prof. Rashid. Sh.Nigmatullin, Kazan Russia, 9-12th Oct 2018: **Fully funded by RussianGovernment**
• **Two of our papers have been selected** for the monograph to be published in Russianlanguage "**Fractal elements: the pioneering constructive – technological solutions**" by thepublisher "FIZMATLIT" (Moscow, Russia)

Award

• AICTE Career Award forYoung Teachers, 2007
• BOYSCAST Fellowship, 2008
• DAAD Fellowship 2012
• Armen H. Zemanina BestPaper Award, Springer, 2013
• AvH Friedrich WilhelmBessel award from Humboldtfoundation, 2021

22-23 NOVEMBER, 2024

6TH INTERNATIONAL CONFERENCE ON EMERGING TECHNOLOGIES: MICRO TO NANO (ETMN-2024)

Prof. Abhinav Kranti

(http://people.iiti.ac.in/~akranti/)

Present Designation: Professor

Abhinav Kranti worked at Université catholique de Louvain (Belgium), Queen's University Belfast (UK), and Tyndall National Institute (Ireland), before joining Indian Institute of Technology Indore, India, in November 2010. Since December 2017, he is serving as a Professor in the Department of Electrical Engineering at IIT Indore. Prof. Kranti's research interests include steep switching devices, memory technology, cryogenics, quantum phenomenon, and CMOS Analog/RF design. Prof. Kranti has been a recipient of fellowships from the Academic Exchange Service, Germany, and the Academy for Research and Higher Education, Belgium.

His research group (Low Power Nanoelectronics Research Group) is engaged in pioneering research on capacitorless dynamic random access memory, steep switching devices, vertically stacked transistors, quantum phenomenon, CMOS Analog/RF design, material-device-circuit co-design and approaches for enabling competitive multi-functionality, all of which are essential for the development of next generation logic and memory technology. The group has strong collaborations with leading international researchers, and after completing PhD, students receive offers for post-doctoral positions abroad.

22-23 NOVEMBER, 2024

6TH INTERNATIONAL CONFERENCE ON EMERGING TECHNOLOGIES: MICRO TO NANO (ETMN-2024)

Prof. Amitava Chatterjee

(http://www.jaduniv.edu.in/profile.php?uid=322)

Present Designation: Professor

Amitava Chatterjee received the B.E.E, M.E.E, and Ph.D. degrees in Electrical Engineering from Jadavpur University, Kolkata, India, in 1991, 1994 and 2002, respectively. In 1997, he joined the Department of Electrical Engineering, Jadavpur University, as a faculty where he is currently serving as a Professor.

He is a recipient of the Japanese Government (Monbukagakusho) Scholarship in 2003 and a recipient of the Japan Society for the Promotion of Science (JSPS) Post-Doctoral Fellowship in 2004. In 2004 and 2009 he visited University of Paris XII, Val de Marne, France, and in 2017 he visited University of Paris Est, as an Invited Teacher. Dr. Chatterjee became a Fellow of Indian National Academy of Engineering (FNAE) in 2018. He is a Fellow of IETE (India), a Fellow of the Institution of Engineers (India), a Senior Member of the IEEE (USA), and a Life Member of Operational Research Society of India. Dr. Chatterjee's key research interests include systems and control, signal and image processing, AI and ML, intelligent instrumentation, and robotics.

Dr. Chatterjee has co-authored two books and co-edited two books, all published by Springer Publishers. He presently serves as an Associate Editor-in-Chief of IEEE Transactions on Instrumentation and Measurement, an Editor of Engineering Applications of Artificial Intelligence *Journal* (Elsevier), an Associate Editor of ISA Transactions *Journal* (Elsevier), and as an Editorial Board Member of Artificial Life and Robotics Journal (Springer). He has served in the past as an Associate Editor of IEEE Sensors Journal, an Editor of IEEE Transactions on Vehicular Technology, an Associate Editor of Control Engineering Practice *Journal* (Elsevier)

and an Associate Editor of IEEE Open Journal of Instrumentation and Measurement. He has authored/coauthored more than 180 technical articles, including 107 international journal papers. This includes 36 papers in IEEE and 46 papers in Elsevier. Dr. Chatterjee is recognized in World Ranking of Top 2% Scientists from India in the Field of "Artificial Intelligence and Image Processing" published by scientists from Stanford University in 2020, 2021, and 2022 (both in Life-Long Career category and in Single-Year category, in each year).

He has also served as the Founder Secretary of Joint IEEE Control Systems Society and Instrumentation & Measurement Society (CSS-IMS) Chapter, Kolkata Section (2014-2015), as an Executive Committee Member of IEEE Kolkata Section (2015 – 2019), as the Chapter Advisor of IEEE Instrumentation & Measurement Society Madras Chapter (Chennai), India (2015 – 2017), and as a Member of the Technical Committee on "Imaging Measurements and Systems", *IEEE Instrumentation & Measurement Society, USA* .

His research group (Low Power Nanoelectronics Research Group) is engaged in pioneering research on capacitorless dynamic random-access memory, steep switching devices, vertically stacked transistors, quantum phenomenon, CMOS Analog/RF design, material-device-circuit co-design and approaches for enabling competitive multi-functionality, all of which are essential for the development of next generation logic and memory technology. The group has strong collaborations with leading international researchers, and after completing PhD, students receive offers for post-doctoral positions abroad.

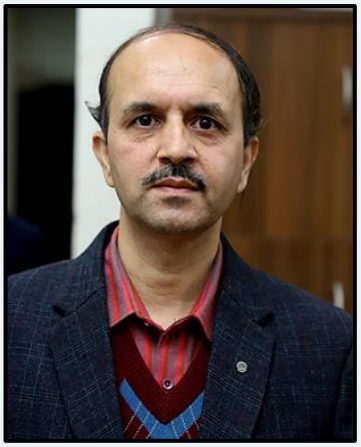
22-23 NOVEMBER, 2024

6TH INTERNATIONAL CONFERENCE ON EMERGING TECHNOLOGIES: MICRO TO NANO (ETMN-2024)

Prof. Rajendra Singh

(https://web.iitd.ac.in/~rsingh/#:~:text=in%202001%20with%20degree%20from,heterojunction%20bipolar%20transistors%20(HBTs).

Present Designation: Professor



Dr. Rajendra Singh is a Professor at the Department of Physics, IIT Delhi. He is also a Joint Faculty at the Department of Electrical Engineering, IIT Delhi. He did M.Sc. (Physics) from D.B.S. College, Dehra Dun (affiliated to H.N.B. Garhwal University) in 1995. After that he joined Inter University Accelerator Centre (formerly Nuclear Science Centre), New Delhi for Ph.D. His Ph.D. work was related to the study of the effect of swift heavy ion irradiation on electrical properties of Si and GaAs. He completed his Ph.D. in 2001 with degree from Jawaharlal Nehru University, New Delhi. He then joined Walter Schottky Institute (WSI), Technical University of Munich (TUM), Germany as a post-doctoral fellow. There he worked on the design, fabrication and characterization of InP-based heterojunction bipolar transistors (HBTs). He extensively used Class 100 Cleanroom facilities at WSI working on various processing tools such as photolithography, wet etching, reactive ion etching, UHV metallization and rapid thermal annealing. In January 2004 he joined the Max Planck Institute of Microstructure Physics, Halle, Germany as a post-doctoral fellow. There he worked in the area of direct wafer bonding and layer splitting of semiconductors for the fabrication of silicon-on-insulator (SOI) and strained silicon-on-insulator (sSOI). He worked in a Class 10 Cleanroom facility at MPI Halle using processing tools such as wet benches, wafer bonding system, plasma enhanced chemical vapour deposition (PECVD) and annealing furnaces. There he also initiated activities on hydrogen implantation induced layer splitting (called as ion cut process) of GaN, AlN and ZnO. He joined the Department of Physics, IIT Delhi in November, 2006. At present he is Professor in the Department of Physics, IIT Delhi. His areas of interest are GaN based

materials and devices, gallium oxide based devices, growth and characterization of semiconductor nanowires, wafer bonding and layer splitting of crystalline materials, 2D-3D interfaces, 2D quantum materials and devices, CVD, MOCVD and MBE growth of semiconductors and quantum materials, Nanolithography and nanofabrication. He has made significant contributions for the establishing of state-of-the-art Nanoscale Research facility (NRF) at IIT Delhi. He has about 160 publications in International Journals and a similar number of publications in conference proceedings/edited volumes/abstracts in National/International conferences and workshops. He is the recipient of "MRSI Medal Award" for 2017. He also received "Teaching Excellence Award" from IIT Delhi in 2018.

22-23 NOVEMBER, 2024

6TH INTERNATIONAL CONFERENCE ON EMERGING TECHNOLOGIES: MICRO TO NANO (ETMN-2024)

Prof. Sanket Goel

Dean, Sponsored Research and Consulting, BITS Pilani, India
(https://www.bits-pilani.ac.in/hyderabad/sanket-goel/)
Present Designation: Professor

Dr Sanket Goel is a Professor in the Department of Electrical and Electronics Engineering at Birla Institute of Technology and Science (BITS) Pilani, Hyderabad Campus, Telangana. He is the Principal Investigator of MEMS, Microfluidics and Nanoelectronics (MMNE) Lab and Founding Director of Cleome Innovations Pvt. Ltd. Currently, he is also serving as a Dean where he spearheads Research and Innovation activities across all the campuses of BITS Pilani. Prof. Goel's work focuses on MEMS, microfluidics, and nanoelectronics in diverse applications like sensing, energy harvesting, and storage. His most cited works include papers on sustainable fuel, laser-induced graphene, and biofuel cells, both enzymatic and microbial. He has over 210 journal papers, 90 conference papers and 20 book chapters. His team has filed 24 patents so far. He has edited two books, Microelectronics and Signal Processing: Advanced Concepts and Applications and Miniaturized Electrochemical Devices. His lab (MMNE Lab) and company focus on developing miniaturized smart sensors and energy harvesters for a variety of applications. His group has also developed droplet microfluidic devices for diverse applications and his team is also working on characterizing and optimizing solar cells for underwater applications and 3D printed devices for space applications. His team has started developing IoT enabled devices for soil parameter monitoring, DNA amplification, and Nanomaterial Synthesis applications. Prof. Goel has given more than 95 invited talks at various conferences, workshops, and public forums.

Prof. Goel has won several awards, honors and distinctions, including the Japan Society for the Promotion of Science Invitational Fellowship (2021), Fulbright Fellowship (2015) and Dr C R Mitra Best Faculty Award by Prof V S Rao Foundation / BITS-Pilani (2021). In 2022, he has become the fellow of Institution of Electronics and Telecommunication Engineers (IETE) and Institution of Engineers (IE). Prof. Goel is with the editorial team of several journals including IEEE Sensors Journal, IEEE Transactions on Nano Bioscience, Journal of Micromechanics and Microengineering, Applied Nanoscience, and Journal of Nanobiotechnology. Earlier, he was in the Editorial Board of IEEE Access Journal. He has also been appointed as a Distinguished Lecturer by the IEEE Sensors Council in 2024.

22-23 NOVEMBER, 2024

6TH INTERNATIONAL CONFERENCE ON EMERGING TECHNOLOGIES: MICRO TO NANO (ETMN-2024)

Prof. Subir Kumar Sarkar

(http://www.jaduniv.edu.in/profile.php?uid=352)

Present Designation: Professor

Prof. Subir Kumar Sarkar (currently a Visiting Professor in the Dept of Electronics and Telecommunication Engineering, IIEST, Shibpur) has completed his B. Tech (1981), M. Tech (1983) and PhD (Tech)[1999] from Institute of Radiophysics and Electronics, University of Calcutta and Post-Doctoral from Virginia Commonwealth University (VCU), USA . He worked around 10 years in industry like Oil and Natural Gas Corporation (ONGC) as an Executive Engineer and 30 years in universities (8 Years IIEST (formerly BESU) and 22 years in Jadavpur University) in different capacities (Professor from 14th June 2007 till retirement on 31st January 2023). He was the Head of the Dept of Electronics and Telecommunication Engg., Jadavpur University during 2011-2013. He was the coordinator of the Evening course, M. Tech in "VLSI Design and Microelectronics Technology" for ten years and the Co-ordinator of IC Design & Fabrication Centre, Jadavpur University more than six years. He has authored 6 Engineering text books published by CRC Press USA, Artech House USA, PAN STANFOPRD USA, S. Chand & Company Pvt. Ltd., India. He has already guided 60 PhD scholars (5 more registered and currently working),21 R&D projects (with Total funding of more than two crores' rupees) sponsored by different Govt. of India funding agencies have been completed. Published more than 735 technical research papers in archived International/ National journals (281) and peer reviewed conferences (454). He has visited several countries like Australia, USA, France, the United Kingdom, Switzerland, Japan, Thailand and Bangladesh as Keynote speaker, Special Guest of Honour, Invited speaker, for training, presenting papers and visiting sophisticated laboratories as a part of his collaborative research activities. He has delivered around 133 Plenary/ Keynote/ Invited talks, 20 IEEE DL talks, four tutorial

talks and chaired around 50 technical sessions in various academic programs. Prof. Sarkar has acted as a member of NBA team for evaluating more than 30 Engineering & Technology Institutes all over India. Honoured with the prestigious IETE – Brig M L Anand Award-2019 for notable expertise in Network domain as is evident from his 183 research papers , 20PG and 18 PhD thesis guidance in Network Area and publication of two books (CRC press & Artech House) whose review came in IEEE communication Magazine and has stupendous citation record of 700 and Prof. S K Mitra Memorial Award-2019 from IETE 2019 for one of his research work as the best research oriented paper among all the papers published in IETE Technical Review Journal in the year 2018-2019. He is a Senior Member of IEEE, IEEE Distinguished Lecturer of Electron Device Society, Life fellow of IE(India) and IETE, Life member of ISTE and Life member of Indian Association for the Cultivation of Science (IACS). He has successfully organized four IEEE sponsored International Conferences as Convener in 2004 & 2022 and as General Chair in 2012 & 2019.

22-23 NOVEMBER, 2024

6TH INTERNATIONAL CONFERENCE ON EMERGING TECHNOLOGIES: MICRO TO NANO (ETMN-2024)

Dr. Shubhajit Roy Chowdhury

(https://faculty.iitmandi.ac.in/~src/)

Present Designation: Assistant Professor

Dr. Shubhajit Roy Chowdhury was born on August 27, 1981. He completed his Ph. D from the Department of Electronics and Telecommunication Engineering, Jadavpur University in the year 2010. He is currently an Associate Professor at the School of Computing and Electrical Engineering, Indian Institute of Technology (IIT) Mandi. Previously, he also served as an Assistant Professor at the Centre for VLSI and Embedded Systems Technology, IIIT Hyderabad and thereafter as an Assistant Professor at the School of Computing and Electrical Engineering, IIT Mandi. He has also taught at Jadavpur University in the capacity of a lecturer from 2006 to 2010. He is a Senior Member of Institute of Electrical and Electronics Engineers (IEEE), member of VLSI Society of India, ACM and a life member of Indian Statistical Institute, Microelectronics Society of India, Institution of Electronic and Telecommunication Engineers and Telemedicine Society of India. He is a member of scientific, technical and editorial committee of Engineering and Natural Sciences Division of World Academy of Engineering, Science and Technology. He is the recipient of university gold medals in 2004 and 2006 for his B.E. and M.E. respectively, Altera Embedded Processor Designer Award in 2007, winner of five best paper awards. He received the award of the Fellow of Society of Applied Biotechnology (FSAB) by the Society of Applied Biotechnology in the year 2012. He is also awarded Young Engineers Award 2012-13 by the Institution of Engineers, India for his outstanding contribution in the field of Electronics and Telecommunication Engineering. He also received the award of the Fellow of the Association for the advancement of Biodiversity Sciences in the year 2014. He is the recipient of VIFA Young Faculty Award in the year 2015 and also the recipient of Young Neurologist Award from the World Stroke Organization in the

year 2015. He has published over one hundred and fifty papers in international journals and conferences. He is a reviewer of IEEE Transactions on VLSI Systems, IEEE Transactions on Measurement and Instrumentation, IEEE Sensors Journal, ACM Transactions on Design Automation of Electronic Systems, Journal of Medical Systems, Medical and Biological Engineering and Computing and other reputed journals. He is an Associate Editor of IEEE Sensors Journal, IEEE Journal of Translational Engineering in Health and Medicine, IEEE Access Journal, Journal of Medical Systems, Frontiers in Public Health and Frontiers in Medical Technology. He has authored 9 books and book-chapters. He has currently filed six patents and has been granted one US patent and two Indian copyrights in the field of non-invasive medical diagnosis. His research interests span around the development of Biomedical Embedded Systems, VLSI architectures, near infra-red spectroscopy based non-invasive diagnosis and ASIC design of intelligent signal processing circuits. He is keenly interested in the educational system and its necessary transformation.