

:Curriculum Vitae:

Dr. DEBASISH DATTA
Professor Emeritus, SoE
KIIT Bhubaneswar

Academic Background:

- **Ph.D.** in Engineering, Indian Institute of Technology, Kharagpur, 1987.
- **M.Tech.** in Microwave and Radar Engg., Indian Institute of Technology, Kharagpur, 1976.
- **B.Tech.** in Radiophysics & Electronics, Institute of Radiophysics & Electronics, Calcutta University, 1973.

Research Areas: Optical Communication, Optical Networks, Quantum Communication and Computing (recent interest).

Current Research: Elastic Optical Networks, Passive optical Networks, Optically-augmented Datacenters, Quantum Communication.

Teaching Experience: Analog Communications, Digital Communications, Optical Communications, Modern Digital Communication Techniques, Advanced Optical Communication Systems, Optical Networks, Telecommunication Switching and Networks, Broadband Access Networks, Fiber Optic Metrology, Electronic Measurements and Instruments, Pulse and Digital Circuits, Network Theory, Basic Electronics, Electronic Devices.

Employments Held in India:

- **Post-retirement engagements:** Professor Emeritus, School of Electronics Engg, KIIT Bhubaneswar, Visiting/Adjunct Professor (IIT Jodhpur, IIT Dhanbad, IIT Kharagpur, IIIT Kalyani, BIT Mesra and other private universities).
- **1981-2017:** Electronics & Electrical Communication Engg. (E&ECE) Dept., IIT Kharagpur - Professor (1999-2017), Associate Professor (1993-1999), Assistant Professor (1986-1993), Lecturer (1981-1986) – retired in 2017.
- **1980-1981:** Philips, Calcutta - Production Manager (1978-1980).
- **1978-1980:** Radar & Comm. Centre, IIT Kharagpur - Lecturer (1979-1980), Scientific Officer (1978-1979).
- **1976-1978:** Indian Telephone Industries, Bangalore - Assistant Executive Engineer.

Overseas Visiting Assignments (on leave from IIT Kharagpur):

- **University of Malaya**, Kuala Lumpur, Malaysia 2013-2014 (one year) – Research and teaching.
- **Chonbuk National University**, South Korea 2003-2004 (one year) – Research and teaching.
- **University of California, Davis, USA**, 1999 Summer and 1997-1998 (one year) – Research.
- **Stanford University**, Stanford, USA, 1992-1993 (one year) – Research and teaching (shared with host).

Academic/Administrative Positions held at IIT Kharagpur:

- Head of School/Department, G. S. Sanyal School of Telecom. (twice), E & ECE Department.
- Member, Network Planning Committee, IIT Kharagpur (for the campus LAN development using PON).
- Member, Computer Purchase and Maintenance Committee, IIT Kharagpur.
- Member, National Expert Committee for Networking Educational Institutions of India.
- Faculty Adviser, M.Tech. Programs on *Fibre Optics and Lightwave Engineering*, *Telecommunication Systems Engineering*, and B.Tech Program, E & ECE Department.
- Professor-In-Charge, Fiber Optic Systems Laboratory, Communication Systems Laboratory, Telecom Networks Laboratory, E & ECE Department.
- Head-Examiner (Kharagpur), Paper-Setter, Moderator, National Graduate Aptitude Test Examination (GATE) for Electrical Communication Engineering.

Laboratory/Infrastructure Development Activities at IIT Kharagpur:

- **Telecom Networks Laboratory, E&ECE Department:** Developed a comprehensive telecom networking testbed, a unique training infrastructure of its kind in India, with the features of today's networking hierarchy and heterogeneity, including various network segments (Ethernet, IP, ATM, WiFi, ADSL, ISDN) all being interconnected through an SDH-based optical fiber ring as the core network.
- **G. S. Sanyal School of Telecommunications (GSSST):** As the Chairman, GSSST, during 1999-2002, developed the present setup for GSSST at Takshashila building.
- **Fiber Optics Laboratory, Communication Systems Laboratory, Networks Laboratory, Basic Electronics Laboratory** - in E&ECE Department.

Awards/Honours/Invitations:

- **IEEE Editor**, IEEE Communications Tutorials and Surveys (2010-2013).
- **Elsevier Editor**, Journal of Optical Switching and Networks, Elsevier (2006-2010).
- **IEEE ANTS 2008 Best Paper Award:** Paper Title: "A Heuristic Approach for Designing Hybrid PONs Employing WDM and OCDMA with Asymmetric Traffic Distribution," subsequently published in *Journal of Optical Switching and Networks*, Elsevier.
- **IEEE Guest Editor**, Special Issue of *IEEE Journal on Selected Areas in Communication* on *WDM-based Network Architectures*, January 2002.

- **Indo-US Science and Technology Fellowship:** Awarded to work as a Visiting Scientist on Coherent Optical Communications at Stanford University, USA, during July 1992 - June 1993.
- **J. of IERE, UK: Sir J. C. Bose Premium Award** from the Institution of Electronic and Radio Engineers (IERE, later merged with IEE/IET, UK), for the paper, entitled “Performance of an Optical Receiver Employing an Avalanche Photodetector in Presence of Timing Uncertainty”, in *Journal of IERE*, Feb.1985.

Project Activities: Carried out several sponsored/consultancy projects (15 plus) as PI/Co-PI at IIT Kharagpur. Developed first-ever indigenous optical transceiver modules and WDM links in India with the sponsorship of the erstwhile DoE, and a unique heterogeneous telecom networking laboratory including copper/wireless/fiber as the network media under DST-FIST program.

Short-Term Courses and Seminars: Conducted various short-term courses and seminars in the area of optical communication systems and networks at IIT Kharagpur.

Membership in Professional Bodies: Senior Member, IEEE, USA; Life Member, IE, India.

Professional Services for International/National Conferences (last 12 years): Member, International Advisory Committee, IEEE ANTS (Adv. Networking and Telecom. Systems) 2016; General Co-Chair, IEEE ANTS 2015; Technical Program Committee Co-Chair, IEEE ANTS 2012; Member, Advisory Committee, NCC (National Conf. on Comm.) 2012; Track Chair, IEEE ANTS 2009; Member, Steering Committee, Photonics 2008, 2010; Member, Advisory Committee, Conference on Computers and Devices for Communications (CODEC),2006.

Book: D. Datta, *Optical Networks*, Oxford University Press, UK, 2021.

Some Selected Journal Publications:

1. D. Adhikari, R. Datta and D. Datta, “Impact of BER in Fragmentation-aware Routing and Spectrum Assignment in Elastic Optical Networks,” *Computer Networks*, Elsevier, vol. 172, May 2020.
2. C. Bhar, A. Mitra, G. Das and D. Datta, "Enhancing End-User Bandwidth using Content sharing over Optical Access Networks," *IEEE/OSA Journal of Optical Communications and Networking*, vol.9, issue 9, pp. 756-772, Sept. 2017.
3. A. Bhattacharya, K. Sinha, R. N. Ghosh, D. Datta and B. P. Sinha, “Non-Contiguous Channel Allocation for Multimedia Communication in Cognitive Radio Networks,” *IEEE Trans. on Cognitive Communications and Networking*, vol.1, no.4, pp.420-434, Dec.2015.
4. C. Bhar, G. Das, A. Dixit, B. Lannoo, M. V. D. Wee, D. Colle, D. Datta, M. Pickavet and P. Demeester, “A Green Open Access Optical Distribution Network with Incremental Deployment Support,” *IEEE/OSA J. of Lightwave Technology*, 2015, vol. 33, No. 19, pp. 4079-4092, October 2015.
5. I. Datta, D. Datta and P. Pande, “Design Methodology for Optical Interconnect Topologies in NoCs with BER and Transmit Power Constraints,” *IEEE/OSA J. of Lightwave Technology*, Vol. 32, No.1, pp 163 – 175, January 2014.
6. A. Adhya and D. Datta, “Evaluation of Accumulated FWM Power at Lightpath Ends in Wavelength-Routed Optical Networks,” *IEEE/OSA J. of Optical Communications and Networking*, Vol. 4, Issue 4, pp. 314–325, April 2012.
7. K. Sinha, B. P. Sinha and D. Datta, "An Energy-Efficient Communication Scheme for Wireless Networks: A Redundant Radix-Based Approach," *IEEE Trans. on Wireless Commun.*, Vol.2, No.10, pp. 550-559, February 2011.
8. J. Ratnam, S. Chakraborti and D. Datta, "Impact of Transmission Impairments on Demultiplexed Channels in WDM PONs employing AWG-based Remote Nodes," *IEEE/OSA J. of Optical Communications and Networking*, Vol. 2, Issue 10, pp. 848-858, October 2010.
9. J. Zhang, L. S. Wang, K. Zhu, L. Song, D. Datta, Y. C. Kim and B. Mukherjee, "Optimized Routing for Fault Management in Optical Burst-Switched WDM Networks" Special Series on Optical Communications and Networking, *IEEE J. of Selected Areas in Communication*, Vol. 25, No.6, pp.111-120, August 2007.
10. D. Das, G. Dutta, and D. Datta, “Packet-Error Rate Based Power Budget for Multiple Access WDM Networks with Subcarrier Multiplexed Control Packets,” *IEEE Photonics Technology Letters*, Vol. 12, pp. 359-361, March 2000.
11. B. Ramamurthy, D. Datta, H. Feng, J. P. Heritage, and B. Mukherjee, “Impact of Transmission Impairments on the Teletraffic Performance of Wavelength-Routed Optical Networks,” *IEEE/OSA J. of Lightwave Technology*, Vol. 17, pp. 1713-1723, October 1999.
12. D. Datta, B. Ramamurthy, H. Feng, J. P. Heritage, and B. Mukherjee, “BER-Based Call Admission in Wavelength-Routed Optical Networks,” *Optical Society of America (OSA) - Trends in Optics and Photonics Series (TOPS); Optical Networks and Their Application*, Vol. 20, pp. 205-210, September 1998.
13. D. Datta and R. Gangopadhyay, “Performance Analysis of the Delay And Exclusive-OR Type Clock Recovery Circuit in An APD-Based Optical Receiver,” *IEE Proceedings [Part-J]*, Vol. 138, pp. 21-32, February 1991.
14. D. Datta and R. Gangopadhyay, “Simulation Studies on Nonlinear Bit Synchronizers in APD-Based Optical Receivers,” *IEEE Trans. on Communications*, Vol. COM-35, No. 9, pp. 909-917, September 1987.
15. R. Gangopadhyay, D. Datta and C. Chandrasekhar, “Performance of an optical receiver employing avalanche photodetector in the presence of timing uncertainty,” *J. Institution of Electronics and Radio Engineers*, Vol. 55, pp. 61-66, February 1985.