

Tahmina Ajmal

Current position **Associate Professor of Engineering (since April 2023)**
University of Bedfordshire (joined in Oct 2010 as Lecturer), Luton, United Kingdom

Ph.D. in Optical Cryptography Techniques [2007] University of Essex, United Kingdom
MSc Engineering (Electronics and Communication [1993] Aligarh Muslim University, India
BSc Engineering (Electronics) [1990] Aligarh Muslim University, India

Previous employment history:

June 2008-Sept 2010 Research Associate, Aquatest Project

University of Bristol

Aquatest Project was a \$13M Bill and Melinda Gates Foundation grant to develop a low-cost water testing device
Project had 7 national and international partners (Aquaya Institute (USA) Health Protection Agency (HPA) , PATH (USA), University of California at Berkeley (USA) University of Cape Town (South Africa), University of Southampton , University of Surrey)

Responsibilities and contribution: Design and development of a portable drinking water test using UV light.

June 2007- Feb 2008 Research Officer working on IST European Project MUSE (Multi Service Access Everywhere) Optical Access Laboratory,

University of Essex

MUSE Project had 35 industrial/academic European partners (including British Telecom, France Telecom, Telecom Italia, Nokia-Siemens, Ericsson and Alcatel-Lucent), the aim of the project was to research on future, low cost, multi-service access networks. The work covers lab trials and test-bed experiments as well as the analytical and simulation studies. University of Essex has been mainly involved in designing Burst Mode Receivers for Gigabit PON (GPON) and XL-PON networks. The total project budget was 40M Euros.

Contribution: Design of a DPSK based burst mode receiver at 12.5Gb/s.

Nov 1992- Sept 2003 (also Mar – May 2008)

Joined as Lecturer, then senior Lecture and promoted to Reader in August 2000, Department of Electronics Engineering, Z H College of Engineering and Technology, India

Responsibilities: Teaching various undergraduate and postgraduate courses, supervising undergraduate projects and postgraduate dissertations. Most of the projects involved development of novel applications for fibre sensors.

Teaching Experience (FHEA)

UK: Since Oct 2010, courses taught

- Fundamentals of Computer Studies
- Optical Communication
- Digital Communication
- Analogue Electronics
- Applied Optical Communication

Designed and developed all of these modules including purchase of necessary equipment for lab experiments, tutorials etc.

India: More than ten years (1992-2003), courses taught include Digital Design, Microprocessors, Optoelectronics, Instrumentation etc.

Research Focus Designing digital innovation for social and environmental transformation.

Project	Funding Source	Duration	Amount	Role/partners
Impact generation by expanding Aquaculture Network to India	Research England Generation and Acceleration Fund 2023	October 2023- Jnauary 2024	£7K	Role:PI, (Co-I in Business School)
REDIA - Developing a Resilience framework using Digital Innovations	GCRF Agrifood Challenge	October 2022- March 2023	£30K	Role: PI (Co-I in Business School) Partners: Abagold (South Africa)

Publications

Journal Papers

1. Mitigating the Impact of Harmful Algal Blooms on Aquaculture Using Technological Interventions: Case Study on a South African Farm, Tahmina Ajmal, Fazeel Mohammed, Martin S. Goodchild, Jipsy Sudarsanan, and Sarah Halse. 2024, *Sustainability* 16, no. 9: 3650. <https://doi.org/10.3390/su16093650>.
2. Aquaculture 4.0: Hybrid Neural Network Multivariate Water Quality Parameters Forecasting Model, Eze, Elias, Sam Kirby, John Attridge, and Tahmina Ajmal, *Sci Rep* **13**, 16129 (2023) <https://doi.org/10.1038/s41598-023-41602-7>
- 3.

58. 'An Intelligent Fibre Optic Sensor for Precise Level Measurement', **T. Ajmal** and M. Rehman, Proc. IEEE International Conference on Robotics, Vision, Information and Signal Processing, Penang, Malaysia, 22nd-24th Jan 2003, pp456-459.
59. 'A Novel Fibre Sensor for the Measurement of Fluid Density using ANN', **T. Ajmal**, Navkalp and M. Rehman, Proc. IEEE International Conference on Robotics, Vision, Information and Signal Processing, Penang, Malaysia, 22nd-24th Jan 2003, pp73-77.
60. 'A Novel High Temperature Measuring System', **T. Ajmal**, D. Prasad and M. Rehman, All India Seminar On "Instrumentation Engineering-Practices, Teaching And Research", IETE, Hyderabad, India, 14th -16th July, 2001
61. 'A Novel Optical Fibre Based Density Transducer', **T. Ajmal** and M. Rehman, All India Seminar On "Instrumentation Engineering-Practices, Teaching And Research", IETE, Hyderabad, India, 14th -16th July, 2001
62. 'A Novel Optical Fibre Based Temperature Measuring System', **T. Ajmal** and M. Rehman, National Seminar On Advanced Instrumentation, Held At CSIO, Chandigarh, 29th –31st Jan. 2001
63. 'A Fiber Optic Angular Displacement Transducer', **T. Ajmal**, M. Mufti, A. Khan and M. Rehman, Proc. National Symposium and Exposition on Modern Instrumentation- Challenges and Visions, AMU, Aligarh, India, Feb 27th -28th, 1999.
64. 'Optical Fibre Based Biomedical Sensor', **T. Ajmal** and M. Rehman, Proc. National Symposium and Exposition on Modern Instrumentation- Challenges and Visions, AMU, Aligarh, India, Feb 27th -28th, 1999.
65. 'A PC Based Energymeter Error Correction System', **T. Ajmal** and M. Rehman, Proc. National Symposium and Exposition on Modern Instrumentation- Challenges and Visions, AMU, Aligarh, India, Feb 27th -28th, 1999.
66. 'A Fibre Optic Tiltmeter', **T. Ajmal** and M. Rehman, Proc. IEEE Instrumentation and Measurement Technology Conference, Brussels, Belgium, June 4th - 6th, 1996, pp1076-1079.
67. 'Laser Tissue Interaction', **T. Ajmal**, M.J. Siddiqui, and M.Rehman, Proc. International Conference Organized by Molecular Association, Chemistry Dept., AMU, Aligarh, India, March 1996, p25.
68. 'A Simple Fibre Optic Liquid Level Transducer', **T. Ajmal** and M. Rehman, Proc. National Conference on Optical Communication, Feb. 22nd -24th, 1995, Univ. of Allahabad, UP, India, pp200-202.
69. 'DC Motor Speed Control Using Fiber Optic Speed Transducer', **T. Ajmal** and M. Rehman, Proc. National Conference on Optical Communication, Feb. 22nd -24th , 1995, Univ. of Allahabad, UP, India, pp193-195.
70. 'Fibre Optic Speed Transducer', **T. Ajmal** and M. Rehman, Proc. National Symposium on Systems, Oct. 03rd, 1993, IIT Madras, India, pp101-104.