

# 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)
<b>REDIA</b> - Developing a Resilience framework using Digital Innovations	GCRF Agrifood Challenge	October 2022- March 2023	£30K	<b>Role: PI</b> (Co-I in Business School) <b>Partners:</b> 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>
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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.