

Dr. S. Talha Ahsan

Associate Professor

Contact Information:

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Ext.: 3021



Qualification

- PhD (Electrical Engineering) – University of Manchester UK – 2010
- MS (Electrical Engineering) – The Ohio State University USA – 1996
- BSc (Honours) Electrical Engineering (Electronics) – UET Lahore - 1993

Area of Specialization

- Electrical Impedance Tomography
- Signal Processing

Work Experience

- June 2014-present Usman Institute of Technology (UIT), Karachi
Associate Professor and Head, Dept. of Electrical Engineering
- June 2013-June 2014 DHA Suffa University Karachi
Associate Professor and Head, Dept. of Electrical Engineering
- Aug 2004-May 2013 Bahria University Karachi Campus
Aug 2004-June 2012 Assistant Professor
July 2012-May 2013 Associate Professor
(was on PhD study leave during Jan 2007-May 2010)
Oct 2010 – May 2013 Head, Dept. of Electrical Engineering

- Jan 1997-Aug 2004 Usman Institute of Technology (UIT), Karachi
Jan 1997-May 1999 Assistant Professor
June 1999-Aug 2004 Associate Professor
March 2000 – March 2003 Head, Dept. of Electronic Engineering
- Sep 1995-June 1996 Dept. of Electrical Engineering, The Ohio State University, Ohio, USA
Graduate Teaching Associate
- Dec 1993-Dec 1994 Pakistan Steel Mills Corporation, Karachi
Assistant Manager
- June 1993-Nov 1993 Packages (Pvt.) Ltd., Lahore
Trainee Electrical Engineer

Membership & Affiliation

- Life Member PEC -- PEC Registration number: ELECT 10974

Research Interests

- Signal processing applications
- EIT for biomedical applications

Courses Taught

- **Undergrad:** Digital Signal Processing, Signals and Systems, Electromagnetic Field Theory, Probability and Statistics, Linear Circuit Analysis, Electrical Network Analysis, Communication Systems, Advanced Communication Systems, Linear Control Systems, Digital Logic Design, Electronic Circuits
- **Postgrad:** Probability and Random Processes, Stochastic Processes

Publications & Conferences

Career Total: 18

Journals:

1. **S Talha Ahsan** and H McCann **2017** Distinguishability-to-noise ratio (DNR), a parameter to determine the discriminating capability of an EIT instrument *GE-International Journal of Engineering Research* (ISSN: 2321-1717) Vol 5 Issue 01 pp: 68-78
<http://aarf.asia/gejer.php>

2. **S Talha Ahsan 2015** Electrical Impedance Tomography (EIT) for brain functional imaging *Science International Lahore (ISI-indexed, ISSN: 1013-5316)* Vol 27 Issue 01 pp: 215-222
<http://www.sci-int.com/pdf/1594514657S.%20Talha%20Ahsan-Brain%20Fcn%20EIT%20UIT%20Karachi%20Feb%2019-REVISED.pdf>
3. Hina Shakir, **S Talha Ahsan** and Haroon Rasheed **2014** Performance evaluation of Discrete Wavelet Transform for compression of encrypted color images *International Journal of Scientific & Engineering Research (Copernicus-indexed, ISSN: 2229-5518)* Vol 5 Issue 7 pp: 433-438 <http://www.ijser.org/research-paper-publishing-july-2014-page3.aspx>
4. **S Talha Ahsan** and H McCann **2014** Digital phase-sensitive detector (PSD) as accumulator-sampler and its implementation in FPGA *Science International Lahore (ISI-indexed, ISSN: 1013-5316)* Vol 26 Issue 01 pp: 65-73 [http://www.sci-int.com/pdf/211477874512--65-73--Talha%20Ahsan--Elec\[1\].%20Engr,-UK--KARACHI-Composed.pdf](http://www.sci-int.com/pdf/211477874512--65-73--Talha%20Ahsan--Elec[1].%20Engr,-UK--KARACHI-Composed.pdf)
5. **S Talha Ahsan** and H McCann **2013** Fast real-time digital monitoring of signal waveform quality using an FPGA *Research Journal of Applied Sciences, Engineering and Technology (ISI-indexed, ISSN: 2040-7459)* Vol 5 Issue 06 pp: 1934-42
<http://maxwellsci.com/jp/issue.php?jid=RJASET&no=266>
6. A Bryan, C J D Pomfrett, J Davidson, B J Pollard, T Quraishi, P Wright, R Robinson, **S T Ahsan** and H McCann **2011** Functional electrical impedance tomography by evoked response: a new device for the study of human brain function during anaesthesia, *Pr. Anaesth. Research Society Meeting London, Abstracts, British Journal of Anaesthesia (WoS Impact Factor ISSN: 0007-0912)* 106 (3): 428-9P [doi: 10.1093/bja/aeq332](https://doi.org/10.1093/bja/aeq332)
7. T Quraishi, C J D Pomfrett, J Davidson, R Robinson, P Wright, **S T Ahsan**, A Bryan, B J Pollard and H McCann **2011** Functional electrical impedance tomography by evoked response: monitoring cerebral auto-regulation during the Valsalva manoeuvre, *Pr. Anaesth. Research Society Meeting London, Abstracts, British Journal of Anaesthesia (WoS Impact Factor, ISSN: 0007-0912)* 106 (3): 441-2P [doi: 10.1093/bja/aeq332](https://doi.org/10.1093/bja/aeq332)
8. J L Davidson, P Wright, **S T Ahsan**, R L Robinson, C J D Pomfrett and H McCann **2010** fEITER - a new EIT instrument for functional brain imaging *J. Phys.: Conf. Ser.* **224** 012025
doi: [10.1088/1742-6596/224/1/012025](https://doi.org/10.1088/1742-6596/224/1/012025)
9. **S Talha Ahsan 2002** Optimal window design *IEEE Potentials* Vol 21 Issue 5 pp: 40 – 44 (ISSN: 0278-6648) doi: [10.1109/MP.2002.1166625](https://doi.org/10.1109/MP.2002.1166625)
<http://ieeexplore.ieee.org/iel5/45/26303/01166625.pdf?tp=&arnumber=1166625&isnumber=26303>

Conferences:

10. H McCann, **S T Ahsan**, J L Davidson, R L Robinson, P Wright and C J D Pomfrett **2011**
A portable instrument for high-speed brain function imaging: fEITER *Proc. 33rd IEEE EMBS Conf. Boston USA 7029-32* [doi: 10.1109/IEMBS.2011.6091777](https://doi.org/10.1109/IEMBS.2011.6091777)
11. H McCann, **S T Ahsan**, J L Davidson, R L Robinson, P Wright, A Bryan, B J Pollard, T Quraishi and C J D Pomfrett **2011** Preliminary observations with fEITER data under auditory stimulus *Proc. 12th Conf. Biomed. EIT Univ. of Bath UK 135-8*
http://www.bath.ac.uk/elec-eng/invert/page_content/conference/Final_prog.pdf
12. **S T Ahsan**, P Wright, J L Davidson and H McCann **2009** High-speed, low-noise digital phase-sensitive demodulation for EIT *10th Conf. Biomed. EIT Univ. of Manchester UK* online Proc. <http://www.maths.manchester.ac.uk/eit2009/abstracts/ahsan.pdf>
13. J L Davidson, P Wright, **S T Ahsan**, R Robinson, C J D Pomfrett and H McCann **2009**
fEITER - a New biomedical EIT instrument for OR and ICU applications *10th Conf. Biomed. EIT Univ. of Manchester UK* online Proc.
<http://www.maths.manchester.ac.uk/eit2009/abstracts/davidson.pdf>
14. **S T Ahsan** and H McCann **2008** Ensuring safe EIT operation on human subjects *9th Conf. Biomed. EIT Dartmouth College NH USA 83-6* online Proc.
http://engineering.dartmouth.edu/eit2008/EIT_Conference_2008.pdf p: 83-86
15. **S Talha Ahsan 2000** Telecommunication technology in the new millennium and developing countries *5th International Conference on 'Technology & Development in the New Millennium', organized jointly by '3rd World Science, Technology and Development Forum UK' and Karachi University, on April 24-27, 2000*. The abstract of paper was published in the conference abstracts.
16. **S Talha Ahsan 1999** Telecommunications, the millennium technology *IEEE Karachi Section Conference on 'Millennium Technologies', held on November 27, 1999*. The paper was published in the conference proceedings.

Books:

17. DSP Lab Workbook "Digital Signal Processing using DSP Toolbox & Blocksets in Matlab" by S K Hasnain, **Talha Ahsan** and Aisha Tahir 2nd ed. **2009 Royal Book Company Karachi**
18. **S Talha Ahsan** Laboratory Manual "Digital Logic Design" ed. **2002 Usman Institute of Technology Karachi**