

# Dr. Tarief M. Fawzy El-Shafiey

**EXPERIENCE AT A GLANCE:** 8 years as a professional Avionics Engineer in Egyptian Air Force (EAF), 3 years as QA Engineer in two American companies, General Dynamics and Holmes and Narver, 2 years as R&D Engineer in EAF R&D Center, 4 years as R&D Manager in the Egyptian Armament Authority, 7 years as a Technical Consultant for Misr Advanced Systems (MAS) and SATRA, 3 years as a Teaching Associate in Arizona State University, USA, 17 years as a part time and full time Lecturer for Electrical & Electronics Engineering courses in Military Technical College, Air Defense College, Arab Academy for Science and Technology, October University for Modern Sciences and Arts (MSA), Yanbu Industrial College, KSA, and University of New Mexico, 7 years as a Head of Electrical Engineering Department in October University for Modern Sciences and Arts (MSA), and 5 years as a Link tutor between Faculty of Engineering in MSA and Engineering School in University of Greenwich, UK, member in QA Committee in Faculty of Engineering, Tanta University, Quality Assurance & Electronics Program Coordinator at Yanbu Industrial College, KSA, Associate Editor in Yanbu Journal of Engineering and Science, reviewer for a book proposal for IEEE Press in 2008, reviewer for a book in mm wave communication system for J. Wielly & IEEE Press in 2011, reviewer for a book proposal for IEEE Press in 2012, session chair in professional conferences, reviewer for ISWTA2011, RFM2011, ISWTA2012, APACE2012, ISWTA2013, and RFM2013 conferences, reviewer for Journals of Computational Physics and IEEE TMTT.

**Address** 1813 Coal Pl. SE Apt. B, Albuquerque, NM 87106

**Telephone** 505 450 3088

**e-mail address** [telshafiey@gmail.com](mailto:telshafiey@gmail.com), [telshafiey@unm.edu](mailto:telshafiey@unm.edu),

**Education**

- 1- Ph.D. in Electrical Engineering, "Simulation, Design and Analysis of Microwave Planar Ferrite Devices and Antenna Circuits Using Spectral Domain Method of Moments", Arizona State University, Tempe, AZ, USA, 1996.
- 2- M.Sc. in Electrical Engineering, Alexandria University, Egypt, 1989.
- 3- Two-year Diploma in Electro- physics, Alexandria University., Egypt, 1980.
- 4- B.Sc. in Electrical Engineering, Military Technical College, Egypt, 1977.

## Research Interests

Microwave circuit and devices, Antenna analysis and Design, Numerical techniques in Electromagnetics, Interaction of electromagnetic with materials, Wave propagation in different media and theoretical electromagnetics.

## Research Projects

Participated and supervised designing and carrying out more than 25 unpublished confidential technical applied projects for the Egyptian Armed Forces from 1990 up to 1992 and from 1997 up to 2001.

## Teaching Interests

- EM Fields & Guided Waves
- Antenna Theory and Design
- Microwave Engineering and Devices
- Analog and digital Communications Systems
- Satellite Communications
- Material Science
- Microelectronics and Solid State Electronics
- Signals and Systems
- Control Systems
- Power Systems
- Math for Engineering Applications

- Electrical Circuits I & II
- Electronics I & II
- Digital Logic I & II
- Measurements & Instrumentations

## **Experience In Teaching**

- 1- Teaching Associate in Arizona State University, USA from Spring 1994 – Fall 1996 for the following Courses:-
  - Microwave Engineering and measurements
  - Electromagnetics
  - Logic Circuits
- 2- Visitor Lecturer in Military Technical College, Cairo, Egypt from Fall 1997- till Fall 2000 for the following courses:-
  - Electrical Materials
  - Microelectronics
- 3- Visitor Lecturer in Air Defense College, Alexandria, Egypt from Aug.1998 – till May 2000 for the following courses:-
  - Microwave measurements
  - Communication measurements.
- 4- Visitor Lecturer in Arab Academy of Science and Technology, College of Engineering, Cairo branch, Egypt from Aug 2000 – till July 2008 for the following courses:-
  - Solid State Electronics I
  - Electronic Materials
  - Electromagnetics I
- 5- Full-time Lecturer in October University for Modern Science & Arts (MSA), Faculty of Engineering, Cairo, Egypt from Aug 2001 – till Aug. 2008 for the following courses:-
  - Electromagnetics I & II
  - Antenna Theory & Design
  - Microwave Engineering and Devices
  - Analog Communication Systems
  - Satellite Communication
  - Physics of Electrical Materials
  - Physical Electronics and Solid State Electronics
  - Digital Logic Design I & II
  - Measurements & Instruments
- 6- Full-time Faculty member in Yanbu Industrial College, Yanbu, KSA from Sept. 2008 – till December 2012 for the following courses:-
  - Industrial and Analog Electronics
  - Applied Electromagnetics
  - Analog Communications
  - Circuit Analysis
  - Senior Graduation Project
- 7- Visitor Professor to Electrical & Computer Engineering Department, University of New Mexico, USA from Jan. 2013 – till present teaching the following courses:-
  - Introduction to Control Systems (ECE345)
  - Circuit Analysis II (ECE213)
  - Signal and Systems (ECE314)
  - Microwave Engineering for Undergraduate (ECE460)
  - Microwave Engineering for Graduate (ECE560)
  - Communication Systems (ECE341)
  - Introduction to Power Systems (ECE381)
  - Math for Engineering Applications (ENG120)
  - Senior Design Project

## Work Experience

08/15 – present

Lecturer III, Electrical and Computer Engineering Department, University of New Mexico, USA. Essential responsibilities and duties include and not limited to:

- Effectively prepare and teach math for Engineering applications, Circuits, Signals and Systems, Communications Systems, Power Systems, Microwave Engineering classes and supervise Senior Design Project.
- Conduct research with Applied Electromagnetics group.
- Prepare a lab for Microwave Engineering.
- Advise students.

2013 – 08/15

Visiting Research Professor to Electrical and Computer Engineering Department, University of New Mexico, USA. Essential responsibilities and duties include and not limited to:

- Effectively prepare and teach math for Engineering applications, Circuits, Signals and Systems, Communications Systems, Power Systems, Microwave Engineering classes and supervise Senior Design Project.
- Conduct research with Applied Electromagnetics group.

2008 – 2012

Electronics Program Coordinator at Yanbu Industrial College, Yanbu, KSA. Essential responsibilities and duties include and not limited to:

- Effectively prepare and teach Applied Electromagnetic, Analog Communications and Electronics classes and supervise Senior Design Projects.
- Manage and monitor the program activities.
- Resolving any problem that may arise.
- Evaluate the program needs and assist in developing a plan to meet those needs (new equipment, labs, and consumables)
- Member of Department Council
- Quality Assurance and Accreditation Coordinator
- Member of Editorial Board of Yanbu Journal of Engineering & Science

2001- 2008

Head of Electrical Engineering Department, October University for Modern Sciences and Arts (MSA), Cairo, Egypt (Validated from University of Greenwich, UK). Essential responsibilities and duties include and not limited to:

- Effectively prepare and teach Electromagnetic, Microwave, Antenna, Digital logic, Materials, Solid State Electronics and Measurements classes.
- Assess and maintain records of student performance.
- Develop, revise and implement course outlines, and syllabi.
- Make and maintain contacts with industry to assess current training needs.
- Hold regularly scheduled meeting with the Department committee.
- Advise students on programme and course requirements and maintain regularly scheduled office hour.
- Maintain a supportive attitude toward work, students, colleagues and administration, and with people of different backgrounds.
- Participate and supervise the ongoing Department activities such as lab maintenance, scheduling classes, interviewing and recruiting new staff members.

- Participate in renewing the accreditation from the Universities Supreme Council in 2006.
- Participate in negotiation with University of Greenwich, UK, for validation of the two MSA Electrical Engineering Programmes (Communication/Electronics, and Computer Engineering) in 2003 and in renewing the validation for another three years in 2006.
- Perform and maintain all QA activities

<b>2000-2008</b>	<b>Visitor Lecturer</b> In the Arab Academy of Science and Technology, College of Engineering, Cairo Branch, Egypt.
<b>2006 - 2008</b>	<b>Technical Consultant</b> for AMANT ANTENNAS, Cairo, Egypt.
<b>2001-2008</b>	<b>Technical Consultant</b> for Misr Advanced Systems (MAS), Cairo, Egypt.
<b>2001-2008</b>	<b>Technical Consultant</b> for SATRA, Cairo, Egypt
<b>1997-2000</b>	<b>Visitor Lecturer</b> in the Military Technical College, Cairo, & the Air Defense College, Alexandria, Egypt
<b>1997-2000</b>	<b><u>Research Manager in the Armament Authority, Cairo, Egypt. My essential responsibilities and duties include and not limited to:</u></b> <ul style="list-style-type: none"> <li>• Studying world modern techniques for R&amp;D in the fields of electronic equipment and various aircraft armament systems.</li> <li>• Management of research projects.</li> <li>• Feasibility studies for research projects.</li> <li>• Setting specifications, technical decision-making, practices and contracting for Egyptian Air Force aircraft equipment.</li> <li>• Planning and coordinating with universities and national and international research centers for cooperation and joint research.</li> </ul>
<b>1993-1996</b>	<b>Research &amp; Teaching Associate</b> , Telecommunication Research Center, Arizona State University, Tempe, Arizona, USA
<b>1991-1992</b>	<b>Researcher</b> , Egyptian Air Force Research Center, Cairo, Egypt.
<b>1990-1991</b>	<b>Quality Assurance Engineer</b> in an American company (Hollmes & Narver) working in a project for the Egyptian Air Force in Cairo, Egypt.
<b>1988-1990</b>	<b>Electrical Engineer</b> in an American company (General Dynamics GE) working in a project for the Egyptian Air Force in Cairo, Egypt.
<b>1985-1988</b>	<b>Chief Engineer</b> of Hell Gazelle Squadron, Egyptian Air Force.
<b>1978-1984</b>	<b>Avionics Engineer</b> For Hell Gazelle, Egyptian Air Force.

## **List of Publications**

1. Azzeddine Djaiz, Tarief Elshafiey, Mourad Nedil, Mohamed A. Habib, and Tayeb A. Denidni “Design and Implementation of a Rectangular UWB Slot Antenna single-band notched at 5.8 GHz” accepted for publication in Yanbu Journal of Engineering and Science, YJES Volume 8, April 2014.
2. Tarief F. Elshafiey “Design and Implementation of a Museum Security System Using an IR

- Proximity Antenna” Yanbu Journal of Engineering and Science, YJES Volume 4, pp. 11 – 18, April 2012.
3. Tarief F. Elshafiey “Simple Qualitative Approach for the Analysis of Rectangular Waveguides without using Maxwell’s Equations” 2011 IEEE Symposium on Wireless Technology & Applications, Langkawi, Malaysia, Sept. 25-28, 2011.
  4. Tarief F. Elshafiey “Design and Implementation of a Museum and Banks Security System Using Antenna as IR Proximity Sensor and PSoC Technology” 2011 IEEE Symposium on Wireless Technology & Applications, Langkawi, Malaysia, Sept. 25-28, 2011.
  5. T. F. Elshafiey “A Novel Ferrite Cross-Patch Antenna for RCS Reduction” will be submitted to IEEE-APS 2013, USA.
  6. Tarief F. Elshafiey “An Efficient and Versatile Evaluation of the RCS of a microstrip antennas on an arbitrarily biased multiplayer ferrite structures” will be submitted to IEEE-APS 2013, USA
  7. Tarief F. Elshafiey "Full Wave Analysis of a Ferrite Cross-Patch Antenna" Loughborough Antennas & Propagation Conference, UK, LAPC2007, April 2-3, 2007.
  8. Tarief F. Elshafiey, Omar Hosny, Judy Sirafiem, and Ramy Gamal “Design, implementation and Analysis of robust system to measure GSM radiation” Loughborough Antennas & Propagation Conference, UK, LAPC2007, April 2-3, 2007.
  9. Tarief F. Elshafiey "3\_D Full Wave Analysis Using Spectral Domain Method of Moments for a Ferrite Cross-Patch Antenna" The 24<sup>th</sup> National Radio Science Conference, NRSC2007, Cairo, Egypt, March 2-3, 2007.
  10. Tarief F. Elshafiey, Omar Hosny, Judy Sirafiem, and Ramy Gamal “Design and implementation of a robust system to measure GSM radiation using microstrip antenna on a foam substrate” The 24<sup>th</sup> National Radio Science Conference, NRSC2007, Cairo, Egypt, March 2-3, 2007.
  11. N. Shaker, K. Shehata, T. Elshafiey and A. M. Alshobaki "A proposed architecture for stream ciphers using LFSR and FCSR" 5<sup>th</sup> International Conference on Electrical Engineering, ICEENG, 16-18 May 2006.
  12. Khaled Shehata, Saleh M. Eisa, Hani Fikry and T. Elshafiey "Design of a 10-bit non-linear interpolation DAC" 5<sup>th</sup> International Conference on Electrical Engineering, ICEENG, 16-18 May 2006.
  13. Khaled Shehata, Amr M. Bauymi, Waleed abd El-Hameed and T. Elshafiey "Novel routing algorithm using a bi-directional bubble sort for non Manhattan channel routing" 5<sup>th</sup> International Conference on Electrical Engineering, ICEENG, 16-18 May 2006.
  14. Tarief F. Elshafiey and J. T. Aberle “Green’s function for multilayer arbitrarily biased anisotropic structure: application to phase shifter, transducers, and magnetization angle effect”, IEEE Trans. on Microwave Theory and Techniques, vol. 54, No. 2, pp. 513-521, Feb. 2006.
  15. Tarief F. Elshafiey and J. T. Aberle “Scattering analysis of a microstrip antennas on an arbitrarily biased ferrite structures” The Proceedings of the fourth IEEE international conference on Electronics, Circuits & Systems, ICECS’97, pp. 1121, Dec. 1997.
  16. Tarief F. Elshafiey and J. T. Aberle “Accurate and efficient Evaluation of Green’s Functions for Multilayer Normally Biased Ferrite Structures” IEE Proceedings, Pt. H, vol. 144, No. 6, pp. 403-410, Dec. 1997.
  17. Tarief F. Elshafiey, J. T. Aberle and El-Badaway A. El-Sharway “Full Wave Analysis of Edge-Guided Mode Microstrip Isolator” IEEE Trans. On Microwave Theory and Techniques, vol. 44, No. 12, pp. 2661-2668, Dec. 1996.
  18. Tarief F. Elshafiey, J. T. Aberle and El-Badaway A. El-Sharway “Green’s Function Formulation for multilayer normally biased ferrite structures using the transmission matrix approach” IEEE Antennas and Propagation Society International Symposium Digest vol. 1, pp. 330-334, Jul. 1996.
  19. Tarief F. Elshafiey, J. T. Aberle and El-Badaway A. El-Sharway “Full Wave Analysis of Edge-Guided Mode Microstrip Isolator” IEEE Microwave Theory and Techniques Society International Symposium Digest, vol. 1, No. 12, pp. 129-132, Jun. 1996.
  20. Tarief F. Elshafiey, “Comparison of Laser Guided Bombs Technology” Technology & Armament

Magazine for Egyptian Armed Forces, July 1991, PP. 29-31, in Arabic Language.

21. E. A. Elbadawy, M. I. Sheeded, Tarief F. Elshafiey "A Passive Countermeasure for Laser Range Finder" International conference of Opto-Electronic Science and Engineering, 1990, in Bejin, China, SPIE, Vol. 1230, 1990, PP. 270-273
22. Tarief F. Elshafiey, M. Fathy Hassan, "A Comparison between the radar and Laser Range Finder" Technology & Armament Magazine for Egyptian Armed Forces, Jan. 1987, pp. 28-31, in Arabic.

## **Training Courses**

- Two courses in "Satellite orbits and attitude control" and "Electro optics payload for Satellites", by ALCATEL, Cairo, Egypt. 2000.
- Training course in Electron Microscopy (Techniques & Interpretation), by Electron Microscope Unit, Assiute University, 7-12 March 1998, Assiute, Egypt.
- 20-hour course in "Numerical solution of partial differential equations using finite element software" in Yanbu Industrial College, Feb., 2010.
- Training course in "Continuous improvement on Quality of Education", Yanbu Industrial College, 19-25 Nov. 2011, Saudi Arabia.
- 1 Day Hands On Session on Lab View, National Instruments, 16 Jan. 2012, Yanbu, Saudi Arabia.

## **Academic Advanced Courses:**

### **Ph.D Courses**

- Electromagnetic Fields and Guided Waves
- Advanced EM Field Theory
- Microwave Circuits
- Microwave Solid State Circuit Design II
- Computational Techniques in Electromagnetic
- Ferrite Materials
- Differential Equations for Spectral Methods
- Antennas
- Microwave Engineering
- High Resolution Radar
- Microwave Devices
- VLSI Design

### **M. Sc. Courses**

- Application of modern mathematical techniques in electrical eng.
- Special topics in electrical measurements.
- Special topics in communication theory.
- Propagation of electromagnetic fields.
- Information theory.

### **Diploma Courses**

- Advanced physics, Mathematics and Computers.
- Antennas & Propagation of Electromagnetic Waves.
- Microwave Electronics and Circuits.
- Advanced Electronic Equipment.
- Theories of Control and Electrical Circuits.
- Advanced Microwave Engineering

## **Professional Societies Membership**

- Member of IEEE, 1992
- IEEE Microwave Theory and Techniques Society, 1992
- IEEE Antenna and Propagation Society, 1992
- Egyptian Engineering Syndicate Member, 1977.
- SMT (Safwet Mohandsi Tayran "Selected Aviation Engineers") member, 1997.
- Member of QA Committee in Faculty of Engineering, Tanta University, 2008.
- QA & Electronics Program Coordinator in Yanbu Industrial College, KSA, 2011.

## **Conference & Journal Committee and Reviewer**

- Session Chair in International Conference on Aerospace Sciences & Aviation Technology, MTC, Cairo, Egypt, May 29-31, 2007.
- Session Chair in the 25<sup>th</sup> National Radio, Science Conference, NRSC, March 18-20, 2008.
- Invited from IEEE to attend Technical English Program workshop that was held in Abu Dhabi, UAE, in March 26 – 28, 2010.
- Session Chair in IEEE Symposium on Wireless Technology & Applications, ISWTA2011, Langkawi, Malaysia, September 25-28, 2011.
- Member of Editorial board of Yanbu Journal of Engineering & Science, February, 2010.
- Reviewer for Journal of Computational Physics, Elsevier, 2011.
- Technical Program Committee and Reviewer of IEEE Symposium on Wireless Technology & Applications, Langkawi, Malaysia, ISWTA2011.
- Technical Program Committee and Reviewer of IEEE International RF and Microwave Conference, Malaysia, RFM2011 and RFM2013.
- Technical Program Committee and Reviewer of IEEE Asia-Pacific Conference on Applied Electromagnetics, APACE 2012.
- Technical Program Committee and Reviewer of IEEE Symposium on Wireless Technology & Applications, Bandung, Indonesia, ISWTA2012 and Kuching, Malaysia, ISWTA2013.
- Reviewer for Journal of IEEE TMTT, 2013, 2014 and 2015.

## **Invited Speech**

- Faculty of Engineering, Tanta University, in 1/2/2006, “ QA Procedures according to British Educational Systems”
- College of Engineering, Arab Academy of Sciences & Technology, in 11/10/2006, “Advanced Topics in Electronic Materials”
- Yanbu Industrial College, in 4/05/2010, "Microwave oven, principle of operation and health issues"
- Yanbu Industrial College, in 22/05/2011, "Overview on Quality Assurance guidelines for Higher Education"

## **Book Reviewer**

- Book proposal reviewer for book titled “MM Wave in Communication Systems”, IEEE Press, March, 2008.
- Final manuscript reviewer for book titled “MM Wave in Communication Systems”, J. Wielly & IEEE Press, March, 2011.
- Book proposal reviewer for book titled “Terahertz Terabit Wireless Communication”, IEEE Press February, 2012.

### **Awards**

First degree Medal of long service and good example from President of Arab Republic of Egypt in 1998.

### **Languages**

Arabic: (Mother Language),  
English: Fluent (Reading – Writing and Spoken),  
French: Good (Reading – Writing and Spoken),

**Computer skills**      Unix, Fortran, Mable V, GLE, Claris Cad, Matlab, latex, Finite Difference, Finite Elements, Method of Moments, Microwave office, Zeeland package, Multisim and lab view.

## **Reference persons**

**Prof. Dr. Khayri Abdel Hameed,**

University President, October University for Modern Science & Arts (MSA), Mehwar intersection with Wahat Rd, 6 October City, Egypt, Tel. 202-38371520, Fax: 202-38371542, [khayri@msa.eun.eg](mailto:khayri@msa.eun.eg), mobile: 00201227885221.

**Prof. Dr. Nabil Rousan**

Head of Department, Electronics & Instrumentation Engineering Technology, Yanbu Industrial College, Saudi Arabia

Mobile (00966502074954)

E-mail [nrousan@yic.edu.sa](mailto:nrousan@yic.edu.sa),

**D.I.Armour- Chelu BEng(Hons) PhD PGCE CEng MIET**

Associate Head (Academic) and Program Leader (Computer Systems & Software Eng) Computer & Communications Dept., School of Engineering, University of Greenwich at Medway, Chatham Maritime, Kent ME4 4TB, Tel.: +44(0)1634-883578

e-mail: [D.I.Armour-Chelu@gre.ac.uk](mailto:D.I.Armour-Chelu@gre.ac.uk)

**Prof. Dr. Khaled Shehata,**

Assoc. Dean, College of Engineering, Arab Academy of Science & Technology, Last street of Marshal Ahmed Ishmael, Behind Sheraton Heliopolis, P.O. Box 2033 Elhoria, Heliopolis, Cairo, mobile (00201001684414), [k\\_shehata@aast.edu](mailto:k_shehata@aast.edu),

**Prof. Dr. Samir M. El-Ghazaly**

Head of Electrical & Computer Engineering Department

University of Arkansas, 414 Ferris Hall, 1508 Middle Drive, Knoxville, TN 37996 USA, Office ph: 1 (865) 974 – 3461, [elghazal@uark.edu](mailto:elghazal@uark.edu),

**Prof. Dr. James T. Aberle**

Electrical Engineering Department, Telecommunication Research Center Arizona State University, P. O. Box 877206, Tempe, AZ 85287-7206, USA Office Ph: 1 (480) 965 – 8588, Fax: 1 (480) 965 – 8325, [aberle@asu.edu](mailto:aberle@asu.edu).

**Prof. Dr. Abdel-Rahman El-Emawy,**

Professor, Center for High Technology Materials

University of New Mexico

Phone: 505-417-3540

Fax: 505-272-7583

e-mail: [emawy1@chtm.unm.edu](mailto:emawy1@chtm.unm.edu)  
[president@vesconm.com](mailto:president@vesconm.com)