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EDUCATION

Ph.D. Electrical Engineering **Aug. 2001: GPA 4.0/4.0**
University of Maryland, College Park, MD, USA
Thesis: Applications of coplanar waveguide single and balanced metal-semiconductor-metal photodetectors
Advisor: Prof. Chi LEE

M.Sc. Electrical Engineering (Non thesis option) **Aug. 2000: GPA 4.0/4.0**
University of Maryland, College Park, MD, USA

M.Sc. Electrical Engineering **Dec. 1996: GPA 3.9/4.0**
Ain Shams University, Cairo, Egypt
Thesis: Optically controlled microwave passive devices on silicon substrates.
Advisors: Prof. Hani Ragai, Prof. Hadia El-Hennawy and Prof. Daaa Khalil

B.Sc. Accounting **June 1997**
Ain Shams University, Cairo, Egypt

B.Sc. Electronics and Communication Engineering **June 1993: 94.1% Ranked 2/120**
Ain Shams University, Cairo, Egypt

Secondary School Certificate (Thanawya Amma) **June 1988**
College De La Salle (Les Frères), Cairo, Egypt. **Ranked 30 over Egypt**

Alliance Française **June 1987**
Ecole International de Langue et Civilization Françaises, Paris, France

ACADEMIC EXPERIENCE

Professor **Sept. 2013 – present**

Director of the antenna and microwave research lab. **Aug. 2010 - present**

Head of the communication systems new program **Aug. 2008 – Aug. 2009**

Ain Shams University, Cairo, Egypt

Electronics and Electrical Communication Eng. Dept.

Joined Ain Shams University as a teaching assistant in 1993, received promotion to assistant professor in 2003, to associate professor in 2008, and to professor in 2013.

Teaching

- Teaching the following undergraduate classes: electromagnetic fields, microwave applications, antenna theory, marketing and management, accounting principles and the following graduate courses: electronic materials, quantum mechanics, quantum electronics, and selected topics in microwave.
- Advising the following graduation projects: linear RF simulator (2004-2005), linear RF simulator ver. 2 (2005-2006), RF front-end components in metamaterial environment (2007-2008), and new trends in antennas design (2009-2010).

Research

- Advising Ph.D. and M.Sc. students in the field of microwave passive devices, microwave photonics, antennas, and metamaterial.

Management

- Managing externally funded projects.
- Writing proposals and tender specifications, and heading bids.
- Proposing the curriculum of the new program of communication systems and managing its implementation for the first two years (Aug. 2007 – Aug. 2009).

Adjunct Faculty

- ***The American University in Cairo, Cairo, Egypt*** **Jan. 2009 – June 13**
Teaching the following undergraduate classes: electromagnetic, antennas theory, and analog electronics and the following graduate classes: microwave circuits design and RF and microwave systems.
- ***French University in Egypt (Université Française d’Égypte), Cairo, Egypt*** **Jan. 2008 – June 2009**
Teaching the following undergraduate classes: microwave propagation and antennas theory, and installing the microwave and antennas laboratory.

Visiting Professor

- ***Radio Laboratory, Helsinki University of Technology (HUT) Espoo, Finland*** **July 2006 – June 2007**
Teaching high speed microelectronics graduate class, and conducting research in the field of metamaterials and proposing the new concept of high impedance wire.
- ***Institut National Polytechnique de Grenoble (INPG) Grenoble, France*** **Sept. 2005 – Nov. 2005**
Introducing the (Advanced Design Systems ADS) microwave simulator to undergraduate students, and conducting research in the field of reconfigurable microwave structures.
- ***Otto-Von-Guericke University Magdeburg, Germany*** **Sept. 2004 – Nov. 2004**
Conducting research in MEMS and defected ground structures in microwave circuits.

Graduate Research Assistant

June 1997-Aug. 2001

Laboratory for physical sciences LPS (NSA-UMCP) College Park, MD, USA
Research

- Design and fabrication of metal-semiconductor-metal (MSM) photodetectors (PD) using photolithography and E-beam lithography.
- Characterization of on-wafer MSM-PD both in time domain (femto-second laser pulse) and in frequency domain (Vector network analyzer).
- Design of microwave circuits using mode-matching technique, finite difference method and quasi-static analysis.
- Design, analysis and characterization of microwave transitions that connect different planar transmission lines.
- Studying and analyzing semiconductor devices using drift diffusion model.

Summer Internship

Sept. 1994 - Oct. 1994

Laboratoire d’Electromagnétisme Microondes et Optoélectronique (LEMO), Grenoble, France
Research

- Fabrication of passive optical components.
- Experimental study of the effect of light on the behavior of microwave devices fabricated on silicon substrates.

FUNDED PROJECTS

- Light harvesting system using a mini-prism array, funded by the Science and Technology Development Fund (STDF) (PI, 2.8 MEGP) **Mar 2013 -Feb. 2015**
- Wireless ECG for health home monitoring, funded by the ministry of communication (NTRA) (co-PI, 3 MEGP) **Jan. 2013-Dec. 2014**
- Enabling techniques for TV band cognitive radios funded by the ministry of communication (NTRA) (co-PI, 2 MEGP) **Oct. 2011-Oct. 2012**
- Prototyping metamaterial antennas, funded by the ministry of communication (ITIDA-ITAC) (PI, 800 KEGP) **Nov. 2010 - June 2012**

- Antennas measurement lab, (Capacity building) funded by the Science and Technology Development Fund (STDF) (co-PI, 4.5 MEGP) **July 2010 - July 2013**
- Metamaterial RF components funded by the Science and Technology Development Fund (STDF) (PI, 650 KEGP). **Nov. 2009 - Nov. 2012**
- Optical MEMS spectrometer funded by Si-Ware Systems (PI, 90 KEGP). **July 2009-Dec. 2010**
- Integrated high resolution optical MEMS spectrometer funded by EU-Egypt Innovation Fund (RDI) (Partner, 400 KEuro). **June 2009-Dec. 2010**
- Compact size front-end RF components funded by the ministry of communication (ITIDA-ITAC) (PI, 130 KEGP). **Nov. 2008-Nov. 2009**

INDUSTRY EXPERIENCE

Engineering Consultant

- **Si-Ware System (SWS), Cairo, Egypt** **July 2007 – Dec. 2010**
Member in the team who proposed the electronics and photonics strategic research plan for King Abdulaziz City for Science and Technology (KACST), Saudi Arabia, and partner in the RDI funded project (MEMS spectrometers).
- **Academy of Scientific Research and Technology (ASRT), Cairo, Egypt** **Mar. 2008 – June 2010**
Member of the ASRT technical committee.
- **Egyptian Courts**
The cases include the use of voice over IP in Egypt, and the installation of screen boards in the International Cairo Stadium.
- **Mentor Graphics, Cairo, Egypt** **Sep. 2003-June 2006**
Designing and characterizing inductive structures using 90 nm technology (1 issued US patent)
- **MEMScAP, Cairo, Egypt** **Jan. 2003-Dec. 2003**
Conducting research in the field of micro-electrical-mechanical systems (MEMS) components and proposing simplified equations for MEMS actuators.

Electrical Engineer III

Aug. 2001-Aug. 2002

Cascade Microtech., Inc. , Beaverton, Oregon, USA

- Developing the infinity probes for on wafer VLSI measurements.
- Designing and characterizing the first differential impedance standard substrates (16 ISSs).
- Designing RF integrated circuits that operate from dc to 40 GHz using PHEMT technology.
- Studying and analyzing vector network analyzer on-wafer calibration techniques and different de-embedding techniques.
- RF application engineer during the first six months: During this period I was exposed to different RF setups and I helped customers solving their technical problems. These included the implementation of the customers' setup and repeating their measurements. Among these were FET, HBT and inductor measurements.

PROFESIONAL/COMMUNITY ACTIVITIES

- Technical Program Committee (TPC) member, 2015 European Microwave Week (EuMW) **Sept. 2015**
- Delegate in the General Assembly (GA) of the **European Microwave Association (EuMA)**, representing Group 17, which includes the countries in Africa and the Middle East. **Jan. 2013-present**
- Vice president for chapters activities, **IEEE Egypt Section** **Jan. 2012-Dec. 2013**
- Associate editor of Ain Shams Engineering Journal, **Oct. 2011-Dec. 2013**
<http://ees.elsevier.com/asej/>

- Co-founder of the Middle East Organization for Microwave, antennas and Propagation Oct. 2010
- Organizing Committee member, the *US-Egypt Regional Workshop on Microwave Emerging Technologies*, Cairo, Egypt Oct. 2010
- Co-founder of the *Middle East Conference on Antennas and Propagation* Oct. 2010, Dec. 2012
- Head of the organizing committee, *META10 2nd International conference on Metamaterials, Photonics Crystals and Plasmonics*, Cairo, Egypt. Feb. 2010
- Member of the Ph.D. thesis defense, “Planar structures for filter applications: defected ground structures and slow wave lines”, IMEP, *Institut National Polytechnique de Grenoble (INPG), France*. Sept. 2009
- Member of the Ph.D. thesis defense, “Studies on an amplitude hologram as the collimator in a submillimeter-wave compact antenna test range”, *Helsinki University of Technology, Finland*. June 2007
- Head of the organizing committee, *Microwave Material* workshop, Cairo, Egypt. June 2006
- Member of the steering committee and head of the proceeding committee, *Mediterranean Microwave Symposium (MMS)*, Cairo, Egypt. May 2003
- Vice president for the academic affairs in the electrical and computer engineering graduate student association (ECE-GSA). Sept. 2000- May 2001
- Student volunteer in the *International Microwave Symposium (IMS)*, MD, USA May 1998

SKILLS

- Computer skills: High Frequency Structures Simulator (HFSS), Ansoft Designer, Advanced design systems (ADS), Microwave Studio (CST), Microwave office (AWR), IE3D, Sonnet, and Matlab.
- Languages: Arabic, English, and French.

HONORS AND AWARDS

AWARDS

- *Egyptian state incentive award for engineering sciences* 2014
- *Misr Elkheir scientific publication award for physical sciences* 2013
- *Egyptian state incentive award for engineering sciences* 2007

HONORS

- Invited participant at the *Arab-American Frontiers of Science, Engineering and Medicine*, Muscat, Oman 13-15 Dec. 2014
- Research work on light harvesting featured on the *Newsweek* May 2014
<http://www.newsweek.com/2014/05/23/harvesting-sun-light-streets-cairo-251010.html>
- Hosted by *Radio Canada, As It Happens* program, to speak about light harvesting research <http://www.cbc.ca/radio/asithappens> May 16, 2014
- Invited presenter at the *International Microwave Symposium (IMS)*, Baltimore, MD June 2011
- Young scientist fellowship from IAP: the global network of science academies to attend the Annual Meeting of the New Champions of the *World Economic Forum*, Tianjin, China 13-15 Sept. 2010
- Marquis *Who's Who* in Science and Engineering. 2007-2008
- Graduate research assistantship, University of Maryland at College Park. June 1997-Aug. 2001
- Academic achievement award from the *governor of Cairo*. Aug. 1988
- *Reviewer* for the following magazines: IEEE Transactions on Microwave Theory and Techniques, IEEE Microwave Wireless Components letters, IET Proceedings; Microwave, Antennas and 2001-present

PATENTS

1. A.M.E. Safwat, K. Nassar, O. Galal, S. El-Henawy, M. Mohamed , I. Mashaly, and O. Mohamed, Illumination of dense urban areas by light redirecting system based on sine wave panels, International patent applications, PCT/EG2015/000001, Feb. 2015.
2. K. Reed Gleason, Tim Leshner, Eric W. Strid, Mike Andrews, John Martin, John Dunklee, Leonard Hayden, and A.M.E. Safwat, Shielded probe for testing a device under test, US 7,518,387, Apr. 2009.
3. K. Reed Gleason, Tim Leshner, Eric W. Strid, Mike Andrews, John Martin, John Dunklee, Leonard Hayden, and A.M.E. Safwat, Shielded probe for testing a device under test, US 7,489,149, Feb. 2009.
4. K. Reed Gleason, Tim Leshner, Eric W. Strid, Mike Andrews, John Martin, John Dunklee, Leonard Hayden, and A.M.E. Safwat, Shielded probe for testing a device under test, US 7,482,823, Jan. 2009.
5. K. Reed Gleason, Tim Leshner, Eric W. Strid, Mike Andrews, John Martin, John Dunklee, Leonard Hayden, and A.M.E. Safwat, Shielded probe with low contact resistance for testing a device under test, US 7,436,194, Oct. 2008.
6. Hazem Hegazy, A.M.E. Safwat, and Wael Fikry Farouk Fikry Abdalla, Test structures and method for interconnect impedance property extraction, US 7,340,703, Mar. 2008.
7. K. Reed Gleason, Tim Leshner, Eric W. Strid, Mike Andrews, John Martin, John Dunklee, Leonard Hayden, and A.M.E. Safwat, Shielded probe for high-frequency testing of a device under test, US 7,304,488, Dec. 2007.
8. K. Reed Gleason, Tim Leshner, Eric W. Strid, Mike Andrews, John Martin, John Dunklee, Leonard Hayden, and A.M.E. Safwat, Probe for testing a device under test, US 7,161,363, Jan. 2007.
9. K. Reed Gleason, Tim Leshner, Eric W. Strid, Mike Andrews, John Martin, John Dunklee, Leonard Hayden, and A.M.E. Safwat, Probe for testing a device under test, US 6,815,963, Nov. 2004.

INVITED TALKS

1. A.M.E. Safwat, I. Eshrah, T. Abuelfadl, and A. Darwish, "University research on composite right/left handed guided wave structures in Egypt", *IEEE International Microwave Symposium IMS, MD, USA*, June 2011.
2. A.M.E. Safwat, "Periodic structures for compact passive devices," *US-Egypt Regional Workshop on Microwave Emerging Technologies, Cairo, Egypt*, 20-21 October 2010.
3. A.M.E. Safwat, "Size reduction of passive devices using metamaterials", IMEP, *Institut National Polytechnique de Grenoble (INPG), France*, September 25th, 2009.
4. A.M.E. Safwat, "Defected ground structures in passive microwave applications", *Microwave Material Workshop, Cairo, Egypt*, June 10th, 2006.
5. R.S. Ghoname, A.M.E. Safwat, E.A.F. Abdallah and H.S. ElHennawy, "Design, fabrication and measurement of tunable miniature microstrip antenna", *Wireless telecommunication technologies workshop sponsored by the US-Egypt partnership for economic growth and development, Cairo, Egypt*, Jan. 2004.

PUBLICATIONS

INTERNATIONAL JOURNALS

Citation as per Google scholar; Citations for 'ame safwat': 607, Cited Publications: 60, H-Index: 14.

1. D. Elsheakh and A.M.E. Safwat, "Compact 3D USB dongle monopole antenna for mobile wireless communication bands", *International Journal of Microwave and Wireless Technologies*, vol. 6, no. 6, pp. 639 - 644, Dec. 2014.
2. D. Elsheakh and A.M.E. Safwat, "Slow-wave quad-band printed inverted-F antenna (IFA)", *IEEE Transactions on Antennas and Propagation*, vol. 62, no. 8, pp. 4396-4401, Aug. 2014.
3. S.I. El-Henawy, M.W.N. Mohamed, I.A. Mashaly, O. N. Mohamed, O. Galal, I. Taha, K. Nassar, and A.M.E. Safwat, "Illumination of dense urban areas by light redirecting panels", *Optics Express*, Vol. 22, Issue S3, pp. A895-A907, 2014.
4. M. Ibrahim and A.M.E. Safwat, "Metamaterial inspired penta-band monopole antenna," *IEEE Antennas and Wireless Propagation Letters*, vol. 12, pp. 1684-1687, 2013.
5. A. R. Raslan, and A.M.E. Safwat, "N-Internal port design for wide band electrically small antennas with application for UHF band," *IEEE Transactions on Antennas and Propagation*, vol. 61, no. 9, pp. 4431-4437, Sept. 2013.
6. A.M.E. Safwat, A.A. Ibrahim, M. Othman, M. Shafee and T. M. Abuelfadl, "Stub based Equivalent

- circuit models for even/odd mode dual CRLH unit cells,” *Progress in Electromagnetic Research PIER M*, vol. 30, pp. 195-209, 2013.
7. M. Othman, T. Abuelfadl, and A. M. E. Safwat, “Dual and wide-band inductively-loaded dipole-based antennas for WLAN/UMTS Applications,” *IEEE Transactions on Antennas and Propagation*, vol. 61, no. 3, pp. 1430-1435, Mar. 2013.
 8. A. R. Raslan, A. A. Ibrahim and A.M.E. Safwat, “Resonant type antennas loaded with CRLH unit cell,” *IEEE Antennas and Wireless Propagation Letters*, vol. 12, pp. 23-26, 2013.
 9. M. Othman, T. Abuelfadl, and A.M.E. Safwat, “Dual-band low-profile stripline-fed Z-antenna,” *Microwave and Optical Technology Letters*, vol. 55, no. 2, pp. 286-290, Feb. 2013.
 10. A.A. Ibrahim, A.M.E. Safwat, and H. El-Hennawy, “All planar compact size microstrip CRLH arbitrary Coupling directional coupler,” *Microwave and Optical Technology Letters*, vol. 55, no. 1, pp. 115-119, Jan. 2013.
 11. A.M.E. Safwat, “Letter-Shaped Microstrip Ground Slots”, *International Journal of Microwave and Wireless Technologies*, vol. 4, no. 5, pp. 523–528, 2012.
 12. A. A. Ibrahim and A.M.E. Safwat, “Microstrip-Fed Monopole Antennas Loaded with CRLH Unit Cells,” *IEEE Transactions on Antennas and Propagation*, vol. 60, no. 9, pp. 4027-4036, Sept. 2012.
 13. D. Elsheakh, and A.M.E. Safwat, “Meander-line loaded planar monopole antennas,” *Microwave and Optical Technology Letters*, vol. 54, no. 8, pp. 1851-1854, Aug. 2012.
 14. A. Alwakil, and A.M.E. Safwat, “Left-handed behavior of coplanar waveguide open-circuited shunt stub,” *IEEE Microwave and Wireless Components letters*, vol. 22, no. 6, pp. 306-308, June 2012.
 15. A. Alwakil, and A.M.E. Safwat, “Simple CAD model for direct coupled double split ring resonators,” *IET Electronics letters*, vol. 48, no. 10, pp. 580-581, May 2012.
 16. A. A. Ibrahim, A.M.E. Safwat, and H. El-Hennawy, “Uniplanar bridgeless CPW-to-Slotline transition and its application to CPW balun,” *IET Electronics letters*, vol. 48, no. 8, pp. 443-444, April 2012
 17. M. Abdel Aziz, F. Podevin, A.M.E. Safwat, A. Vilcot and P. Ferrari, “Slow-wave high-Q coplanar striplines in CMOS technology and their RLCG model,” *Microwave and Optical Technology Letters*, vol. 54, no. 2, pp. 650-654, Mar. 2012
 18. A.M.E. Safwat, and A. Alwakil “Composite right/left-handed coplanar waveguide feeding array of slot antennas,” *Microwave and Optical Technology Letters*, vol. 54, no. 1, pp. 103-107, Jan. 2012.
 19. A. A. Ibrahim, A.M.E. Safwat and H. El-Hennawy, “Triple-band microstrip monopole antenna loaded with CRLH unit cell,” *IEEE Antennas and Wireless Propagation Letters*, vol. 10, pp. 1547-1550, Dec. 2011.
 20. D. Elsheakh, and A.M.E. Safwat, “Ultra-Broad and Multi- Band 3D-Monopole Antennas,” *Microwave and Optical Technology Letters*, vol. 53, no. 12, pp. 2843-2846, Dec. 2011.
 21. A.M.E. Safwat, "Dual mode composite right-left handed unit cells" *Applied Physics A, Materials Science & Processing* vol. 103, pp. 537–540, 2011.
 22. A.M.E. Safwat and T.M. Abuelfadl, “Coupled lines from filter to composite right/left handed-cells,” *Progress in Electromagnetic Research PIER B*, Vol. 26, pp. 451-469, 2010
 23. M. Shafee, A.M. Mahmoud, and A.M.E. Safwat, “Theory and applications of high impedance wires,” *Progress in Electromagnetic Research PIER C*, Vol. 17, pp. 67-78, 2010
 24. A. Fouda, A.M.E. Safwat and H. El-Hennawy, “On the applications of the coupled line composite right/left-handed unit cell,” *IEEE Transactions on Microwave Theory and Techniques (T-MTT)*, vol. 58, no. 6 , pp. 1584-1591, Jun. 2010.
 25. A.M.E. Safwat, “High impedance wire composite right/left-handed transmission lines,” *Microwave and Optical Technology Letters*, vol. 52, no. 6 , pp. 1390-1393, Jun. 2010.
 26. M. Abdel Aziz, A.M.E. Safwat, F. Podevin, and A. Vilcot, “Coplanar waveguide filters based on multi-behavior etched-ground stubs,” *IEEE Transactions on Components and Packaging Technologies*, vol. 32, no. 4, pp. 816 – 824, Dec. 2009.
 27. A.M.E. Safwat, “Microstrip coupled line composite right/left-handed unit cell,” *IEEE Microwave and Wireless Components letters*, vol. 19, no. 7, pp. 434 – 436, July 2009.
 28. A.M. Mahmoud, M.A. Wahby, and A.M.E. Safwat, “Microstrip balun over high impedance wire-ground,” *IEEE Microwave and Wireless Components letters*, vol. 19, no. 7, pp. 443 – 445, July 2009.
 29. A.M.E. Safwat, S. Tretyakov, A. Raisanen, “Defected-ground and patch-loaded planar transmission lines,” *IET Proceedings, Microwaves, Antennas and Propagation*, vol. 3, no. 2, pp. 195 – 204, Mar. 2009.
 30. H.E. Kotb , A.M.E. Safwat, H. Boghdady , and D.A.M. Khalil, “RF optoelectronic oscillator using a directly modulated semiconductor laser and a fiber optical ring filter,” *Microwave and Optical Technology Letters*, vol. 51, no. 2 , pp. 470-475, Feb. 2009.
 31. M. Abdel Aziz, H. Issa, D. Kaddour, F. Podevin, A.M.E. Safwat, E. Pistono, J.-M. Duchamp, A. Vilcot and P. Ferrari, “Shielded coplanar striplines for RF integrated applications,” *Microwave and Optical*

- Technology Letters*, vol. 51, no. 2, pp. 352 – 358, Feb. 2009.
32. A.M.E. Safwat, S. Tretyakov, A. Raisanen, "High impedance wire," *IEEE Antennas and Wireless Propagation Letters*, vol. 6, pp. 631 – 634, Dec. 2007.
 33. M. A. Salah-Eddin and A.M.E. Safwat, "Defected-ground coupled microstrip lines and its application in wideband balun," *IET Proceedings, Microwaves, Antennas and Propagation*, vol. 1, no. 4, pp. 893 – 899, Aug. 2007.
 34. M. A. Salah-Eddin and A.M.E. Safwat, "Defected-ground coupled microstrip lines bandpass filter with suppressed spurious resonances," *Microwave and Optical Technology Letters*, vol. 49, no. 8, pp. 2038 – 2039, Aug. 2007.
 35. A.M.E. Safwat, S. Tretyakov, A. Raisanen, "Dual bandstop resonator using combined split ring resonator and defected ground structure," *Microwave and Optical Technology Letters*, vol. 49, no. 6, pp. 1249-1253, June 2007.
 36. M. El Khaldi, F. Podevin, O. Exshaw, A. Vilcot, and A.M.E. Safwat, "Improvement of performance of optically controlled microstrip phase shifters," *IET Proceedings, Microwaves, Antennas and Propagation*, vol. 1, no. 2, pp. 427-432, April 2007.
 37. M.H. Awida, A. Balalem, A.M.E. Safwat, H. El-Hennawy, and A. S. Omar, "Combined lowpass-bandpass filter response using different shapes of microstrip dual-mode resonators," *Proceedings of the European Microwave Association*, vol. 2, pp. 326-332, Dec. 2006.
 38. A.M.E. Safwat, F. Podevin, P. Ferrari, and A. Vilcot, "Tunable band-stop defected ground structure resonator using reconfigurable dumbbell shaped coplanar waveguide," *IEEE Transactions on Microwave Theory and Techniques (T-MTT)*, vol. 54, no. 9, pp. 3559-3564, Sept. 2006.
 39. E.K.I. Hamad, A.M.E. Safwat and A. Omar, "A MEMS reconfigurable DGS resonator for K-band applications," *IEEE Journal of Microelectromechanical Systems (J-MEMS)*, vol. 15, no. 6, pp. 756-762, Aug. 2006.
 40. M.H. Awida, A.M.E. Safwat and H. El-Hennawy, "Miniaturized dual-mode microstrip bandpass filters using meander space filling curves," *Proceedings of the European Microwave Association*, vol. 2, pp. 187-192, June 2006.
 41. M.H. Awida, A.M.E. Safwat and H. El-Hennawy, "Compact rat-race hybrid coupler using meander space filling curves," *Microwave and Optical Technology Letters*, vol. 48, no. 3, pp. 606-609, Mar. 2006.
 42. E.K.I. Hamad, A.Z. Elsherbeni, A.M.E. Safwat and A. Omar, "Two-dimensional coupled electrostatic-mechanical model for RF MEMS switches," *Journal of Applied Computational Electromagnetics Society (ACES)*, vol. 21, no. 1, pp. 26-36, March 2006.
 43. M.H. Awida, A.M.E. Safwat and H. El-Hennawy, "Dual-mode microstrip bandpass filter using a ring of arrows resonator," *IEE Electronics Letters*, vol. 41, no. 24, pp. 1335-1336, Nov. 2005.
 44. E.K.I. Hamad, A.M.E. Safwat and A. Omar, "Controlled capacitance and inductance behavior of L-shaped defected ground structure for coplanar waveguide," *IEE Proceedings, Microwaves, Antennas and Propagation*, vol. 152, no. 5, pp. 299-304, Oct. 2005.
 45. A.M.E. Safwat, "Study of microstrip mode in RF on-wafer probes," *Microwave and Optical Technology Letters*, vol. 45, no. 2, pp. 324-328, May 2005.
 46. A.M.E. Safwat, J. Kim, B. Walker, W. Johnson and C. Lee, "1.55 μm surface illuminated monolithically integrated balanced metal semiconductor metal photodetectors and coplanar waveguide," *Microwave and Optical Technology Letters*, vol. 34, no. 2, pp. 125-130, July 2002.
 47. A.M.E. Safwat, K. A. Zaki, W. Johnson, C. H. Lee, "Novel transition between different configurations of planar transmission lines," *IEEE Microwave and Wireless Components letters*, vol. 12, no. 4, pp. 128-130, April 2002.
 48. A.M.E. Safwat, K. A. Zaki, W. Johnson, C.H. Lee, "Mode-matching analysis of conductor backed coplanar waveguide with surface etching," *Journal of Electromagnetic Waves and Applications*, vol. 15, no. 5, pp. 627-641, 2001.
 49. A.M.E. Safwat, C. K. Lin, J. Kim, F. Johnson, W. Johnson, N. Goldsman, C. Lee, "Investigation of the optical spot position on the performance of MSM structures: novel application," *Solid State Electronics*, vol. 44, no. 11, pp. 2077-2080, Nov. 2000.
 50. A.M.E. Safwat, D.A. Khalil, H. Elhennawy and H.F. Ragaie, "Quasi static analysis of an optically illuminated directional coupler," *IEEE Transactions on Microwave Theory and Techniques*, vol. 45, no. 8, pp. 1351-1357, Aug. 97.
 51. D.A. Khalil and A.M.E. Safwat, "On the improvement of the performance of the optically controlled microwave switch," *IEEE Transactions on Microwave Theory and Techniques*, vol.45, no. 8, pp.1358-1361, Aug. 97.
 52. A.M.E. Safwat, J. Haider, D. Khalil, S. Tedjini, A. Vilcot, H. Elhennawy and H. Ragaie, "An optically controlled matching technique," *Microwave and Optical Technology letters*, vol. 11, no. 5, pp.284-289,

April 96.

INTERNATIONAL CONFERENCES

53. A. Nasr and A.M.E. Safwat "Air-Bridge Free Coplanar Waveguide Power Divider," accepted for publication in the *European Microwave Conference (EuMC)*, Paris, France, Sept. 2015.
54. A.M.E. Safwat, I. Eshrah, T. Abuelfadl, and H. Elhennawy "University research on antenna design and scattering problems in Egypt," *European Microwave Conference (EuMC)*, Rome, Italy, Oct. 2014.
55. M. Ibrahim, S. Elhenawy, A.M.E. Safwat, "60 GHz Artificial Magnetic Conductor Loaded Dipole Antenna in 65 nm CMOS Technology," *European Microwave Conference (EuMC)*, Rome, Italy, Oct. 2014.
56. M. Shafee, S. Nahar, M.M. Hella, A.M.E. Safwat, and H. El-Hennawy, "Stacked resonator patch antenna for wide bandwidth THz detection," *IEEE International Conference on Ultra-Wideband (ICUWB)*, Paris, France, Sept. 2014.
57. M.W.N. Mohamed, I.A. Mashaly, O.N. Mohamed, S.I. Elhenawy, O. Galal, I. Taha, K. Nassar, and A.M.E. Safwat, "Light redirecting system using sine-wave based panels for dense urban areas," *SPIE Optical Engineering + Applications*, San Diego, USA, Aug. 2014
58. K. Nassar, A. Safwat, A. Darwish, S. Elhenawy, I. Mashaly, O. Mohamed, "Designing a light redirecting system for southern skies," *Building Simulation and Optimisation 2014 (BSO14)*, London, England, June 2014.
59. M. Ibrahim, S. Elhenawy, A.M.E. Safwat, "Dual-Band Orthogonal-Beam Multi-Standard CRLH Loop antenna," *European Microwave Conference (EuMC)*, Nuremberg, Germany, Oct. 2013.
60. D. Elsheakh, and A.M.E. Safwat, "Multi-band CPW-fed printed IFA," *IEEE AP-S International Symposium on Antennas and Propagation*, Chicago IL, USA, July 2012.
61. M. Othman, T. Abuelfadl, and A.M.E. Safwat, "Dual-band inductively-loaded miniaturized antenna," *IEEE AP-S International Symposium on Antennas and Propagation*, Chicago IL, USA, July 2012.
62. M. Othman, A. Alwakil, M. Shafee, A.M.E. Safwat, and T. Abuelfadl, "Novel Even/Odd Mode-Based CRLH Unit Cells," *IEEE International Microwave Symposium IMS*, Montreal, Canada, June 2012.
63. A.M.E. Safwat, I. Eshrah, T. Abuelfadl, and A. Darwish, "University research on composite right/left handed guided wave structures in Egypt", *IEEE International Microwave Symposium IMS*, MD, USA, June 2011 (*invited paper*).
64. A.M.E. Safwat, "Dual mode composite right/left-handed unit cells," *META10, 2nd International conference on Metamaterials, Photonics Crystals and Plasmonics*, Cairo, Egypt, 22-24 Feb. 2010.
65. M. Abdel Aziz, F. Podevin, A.M.E. Safwat, A. Franc, E. Pistono, N. Corrao, A. Vilcot, and P. Ferrari, "Slow-wave shielded coplanar striplines for UWB filtering applications," *ISMOT*, New Delhi, India, Dec 16-19, 2009.
66. M. Shafee, A.M.E. Safwat, and A. H. Morshed, "On the applications of high-impedance wire," *European Microwave Conference (EuMC)*, Rome, Italy, Oct. 2009.
67. M. Shafee, and A.M.E. Safwat, "High-impedance wire patch antenna," *European Microwave Conference (EuMC)*, Rome, Italy, Oct. 2009.
68. Y. Sabry, B. Saadany, M. Medhat, A.M.E. Safwat, and D. Khalil, "Optical characterization technique for MEMS comb-drive resonators," *IEEE/LEOS International Conference on Optical MEMS and Nanophotonics*, Florida, USA, Aug. 2009.
69. A. R. El-Damak, A.M.E. Safwat, S.A. Tretyakov, and H.S. El-Hennawy, "Patch antenna on a high impedance wire," *European Microwave Conference (EuMC)*, Amsterdam, Netherlands, Oct. 2008
70. T. Kiuru, A.M.E. Safwat, J. Mallat, and A. V. Raisanen, "Gunn oscillator modeling and second harmonic output power optimization at 76 GHz," *IEEE International Microwave Symposium IMS*, Georgia, USA, June 2008.
71. M. Abdelaziz, A.M.E. Safwat, F. Podevin, A. Vilcot, "Narrow bandpass filter based on the modified DGS," *European Microwave Conference (EuMC)*, Munich, Germany, Oct. 2007.
72. M. H. Awida, A. Boutjdar, A.M.E. Safwat, H. El-Hennawy, and A. Omar, "Multi-bandpass filters using multi-armed open loop resonators with direct feed," *IEEE International Microwave Symposium IMS*, Hawaii, USA, June 2007.
73. H. E. Kotb , A.M.E. Safwat, H. Boghdady , and D.A.M. Khalil, "Tuning of an RF optoelectronic oscillator," *IEEE-International Topical Meeting on Microwave Photonics (MWP)*, Grenoble, France, Oct. 2006.
74. M. H. Awida, A. Balalem, A.M.E. Safwat, H. El-Hennawy, and A. Omar, "Combined low-pass and bandpass filter response using microstrip dual mode resonators," *IEEE International Microwave Symposium IMS*, San Francisco, USA, June 2006.
75. E.K.I. Hamad, A.M.E. Safwat and A. Omar, "L-shaped defected ground structure for coplanar waveguide," *IEEE AP-S International Symposium on Antennas and Propagation*, Washington DC,

USA, July 2005.

76. E. K. I. Hamad, A.M.E. Safwat and A. Omar, "2D periodic defected ground structure for coplanar waveguide," *Germany Microwave Conference, GeMiC 05*, Ulm, Germany, Apr. 2005.
77. E. K. I. Hamad, A.M.E. Safwat and A. Omar, "2D coupled electrostatic-mechanical model for shunt-capacitive MEMS switch based on matlab program," *International Conference on Wireless Communications and Applied Computational Electromagnetics, IEEE/ACES*, Hawaii, USA, April 2005.
78. A.M.E. Safwat, M. Andrews, L. Hayden, K. K. Reed Gleason and Eric Strid, "A probe technology for 110+ GHz integrated circuits with aluminum pads," *IEEE-ARFTG 59th*, June 2002.
79. A.M.E. Safwat, and L. Hayden, "Sensitivity analysis of calibration standards for fixed probes spacing on wafer calibration techniques," *IEEE International Microwave Symposium IMS*, pp. 2256-2260, June 2002.
80. A.M.E. Safwat, and L. Hayden, "Sensitivity analysis of calibration standards for SOLT and LRRM," *IEEE ARFTG 58th*, Nov. 2001.
81. A.M.E. Safwat, J. Kim, B. Walker, W. Johnson and C. Lee "1.55 μm surface illuminated monolithically integrated balanced metal semiconductor metal photodetectors and coplanar waveguide," *IEEE International Topical Meeting on Microwave Photonics (MWP)*, Jan. 2001.
82. A.M.E. Safwat, K. A. Zaki, W. Johnson, C. H. Lee, "Novel design of coplanar waveguide to microstrip transition," *IEEE international microwave symposium IMS*, Vol. 2, pp. 607-610, June 2001.
83. J. Kim, A.M.E. Safwat, F.G. Johnson, W.B. Johnson, C.H. Yang, Chi H. Lee, "Responsivity enhancement in metal-semiconductor-metal photodetector with nanometer fingers," *IEEE, Lasers and Electro-Optics*, vol. 1, pp. 262-263, 2000.

NATIONAL JOURNALS AND CONFERENCES

84. N. Anous, D.A.M. Khalil, and A.M.E. Safwat, "The Effect of gaussian beam spot size on the performance of an SPR IR Optical CO₂ sensor," *HONET10, 7th International symposium high capacity optical network and enabling technologies*, Cairo, Egypt, 19-21 December 2010.
85. A. ElWakil, A. Ezzat, and A.M.E. Safwat, "Compact size coupled line crlh unit cell," *MECAP10, 1st Middle East Conference on Antennas and Propagation*, Cairo, Egypt, 20-22 October 2010
86. M. Abdelaziz, F. Podevin, A.M.E. Safwat, A. Vilcot, "Lignes différentielles à ondes lentes intégrées sur silicium," *XVIeme Journées National Microondes*, Grenoble, France, 27-29 May 2009.
87. M. Abdelaziz, F. Podevin, A.M.E. Safwat, A. Vilcot, "Structures coplanaires à défaut de plan de masse : application aux filtres réjecteur et passe-bande," *XVeme Journées National Microondes*, Toulouse, France, 23-25 May 2007.
88. A.M.E. Safwat, "S-parameters based USB OTG cable characterization," *Ain Shams university scientific bulletin*, vol. 41, no. 1, pp. 613-622, 2006.
89. R. Ghoname, A.M.E. Safwat, E. Abdallah and H. Elhennawy, "Design, fabrication and measurement of tunable miniature microstrip antennas," *Ain Shams university scientific bulletin*, Vol. 39, No. 30, part 2, pp. 509-520, June 2004. (*Best student paper award from the British Cultural Council in Egypt*)
90. O. Galal, A.M.E. Safwat and H. Elhennawy, "On the improvement of multi-section coupled lines balun," *National radio science conference NRSC*, Cairo, Egypt, Mar. 2004.
91. M. Salaheldine, A.M.E. Safwat, H.F. Ragaie and H. Haddara, "Design equations for the on-state capacitance of the RF MEMS shunt switch," *National radio science conference NRSC*, Cairo, Egypt, Mar. 2004.
92. J. Haider, A.M.E. Safwat, A. Vilcot, M. Boutinon, and S. Tedjini, "Etude experimental de l'effet de l'illumination optique sur un coupleur sur silicium," *IXeme Journées National Microondes*, Paris, France, 4-6 Apr. 1995.

SUPERVISED THESES

Ph.D.

1. M. Shafee, *Tera Hertz Antennas*, Faculty of Engineering, Ain Shams University, expected Feb. 2016
2. M. Abdelaziz, *Structures planaires pour des applications de filtrage: structures à défauts de plan de masse, lignes à ondes lentes*, IMEP, Institut National Polytechnique de Grenoble (INPG), France, September, 2009.

M.Sc.

3. M. Ibrahim, *Metamaterial-inspired antennas for novel applications*, Ain Shams University, expected May. 2015.

4. S. Elhenawy, *Metamaterials for efficient antenna design*, Ain Shams University, expected May. 2015.
5. A. Raslan, *Metamaterial antennas for cognitive radio applications*, The American University in Cairo, Egypt, May 2013.
6. A. A. Ibrahim, *Metamaterial antennas and components*, Faculty of Engineering, Ain Shams University, Apr. 2012.
7. N. Anous, *Optical metamaterial*, Faculty of Engineering, Ain Shams University, Aug. 2011.
8. A. Fouda, *Metamaterial for wireless components design*, Faculty of Engineering, Ain Shams University, Feb. 2010.
9. M. Shafee, *Microwave metamaterials*, Faculty of Engineering, Ain Shams University, Feb. 2010.
10. H. Abdelsalam, *Optical generation of RF signals*, Faculty of Engineering, Ain Shams University, July 2006
11. M. Salahdin, *Modeling and applications of RF DGS circuits*, Faculty of Engineering, Ain Shams University, July 2006
12. O. Fahmy, *Balun design for differential circuits*, Faculty of Engineering, Ain Shams University, June 2006.
13. M. Awida, *Design and implementation of dual mode filter for satellite applications*, Faculty of Engineering, Ain Shams University, May 2006.

PARTICIPATION IN CONFERENCES, WORKSHOPS AND COURSES

1. 2nd meeting of Arab-American Frontiers in Science, Engineering, and Medicine, **Muscat, Oman** **Dec. 2014**
2. European Microwave Conference (EuMC), **Rome, Italy** **Oct. 2014**
3. SPIE Optical Engineering + Applications, **San Diego, USA** **Aug. 2014**
4. European Microwave Conference (EuMC), **Nuremberg, Germany** **Oct. 2013**
5. IEEE International Microwave Symposium (IMS), **Montreal, Canada** **June 2012**
6. IEEE International Microwave Symposium (IMS), **MD, USA**. **June 2011**
7. US-Egypt regional workshop on microwave emerging technologies, **Cairo, Egypt** **Oct. 2010**
8. 1st Middle East Conference on Antennas and Propagation (MECAP), **Cairo, Egypt** **Oct. 2010**
9. Annual meeting of the new champions of the world economic forum, **Tianjin, China** **Sept. 2010**
10. International conference on metamaterials, photonics crystals and plasmonics, **Cairo, Egypt** **Feb. 2010**
11. European Microwave Conference (EuMC), **Rome, Italy**. **Oct. 2009**
12. European Microwave Conference (EuMC), **Amsterdam, Netherlands**, **Oct. 2008**
13. European School of Antennas, **Espoo, Finland** **June 2007**
14. High frequency structures simulators (HFSS) short course, **Espoo, Finland** **Nov. 2006**
15. Propagation in free space using ray tracing technique, short course, **Espoo, Finland** **Oct. 2006**
16. Curriculum Development Workshop on Technology Entrepreneurship-Theory to Practice. **June 5-6, 2006**
American University in Cairo, **Cairo, Egypt**
Conducted by Lester Center for entrepreneurship and innovation, UC Berkeley
17. Microwave material workshop, **Cairo, Egypt**. **June 2006**
18. National radio science conference NRSC, **Cairo, Egypt** **Mar. 2004**
19. Wireless telecommunication technologies workshop sponsored by the US-Egypt partnership for economic growth and development, **Cairo, Egypt** **Jan. 2004**
20. Mediterranean Microwave Symposium (MMS), **Cairo, Egypt** **May 2003**
21. IEEE International Microwave Symposium (IMS), **WA, USA** **June 2002**
22. IEEE ARFTG 59th, **WA, USA** **June 2002**
23. IEEE ARFTG 58th, **CA, USA** **Nov. 2001**
24. IEEE international microwave symposium (IMS), **AZ, USA** **June 2001**
25. Education Planning in Developing Countries **Spring 2001**
University of Maryland, College Park, **MD, USA**
26. Comparative Education **Fall 2000**

- University of Maryland, College Park, *MD, USA*
27. Basic network measurement using the HP 8510 network analyzer
Hewlett Packard, Dallas, *TX, USA*.
28. IC-CAP fundamentals: an introduction to IC-CAP.
Hewlett Packard, Westlake Village, *CA, USA*.

July 5-7, 1998

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