

Dr. Abdelhady Mohamed

Associate Professor
Electrical Engineering Department

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EDUCATION**Post-Doctoral Fellowship****Oct 2013-Jul 2015**

Electrical and Computer Engineering, Concordia University, Montreal, QC, Canada

Doctor of Philosophy**2007-2013**

Electrical and Computer Engineering, Menofiya University, Egypt

Thesis Title: Dielectric Resonator Reflectarray

PhD Scholarship**2010-2012**

State Key Laboratory of Millimeter wave, Southeast University, Nanjing, China

Masters of Applied Science**2002-2005**

Electronics and Communications Engineering, Benha University, Egypt

Thesis Title: Active Integrated Antennas

Bachelor of Science (*Excellent with honors*)**1995-2000**

Electronics and Communications Engineering, Benha University, Benha, Egypt

Project Title: Microstrip Antennas

WORK EXPERIENCE**Associate Professor****July 2018 – Present**

Electrical Engineering Department

Faculty of Engineering, Benha University, Benha, Egypt

- Supervising on a PhD student.
- Strategy plan member.
- Taught the following courses:

Course	Semester
E1413 Waves and Antenna I	Winter 2019
E1518 Waves and Antenna II	Fall 2019
E9400 Advanced Topics in Electric Engineering	Fall 2019

Assistant Professor**June 2013 – July 2018**

Electrical Engineering Department

Faculty of Engineering, Benha University, Benha, Egypt

- Strategy plan member.
- Laboratories and Purchasing Committee member.
- Taught the following courses:

Course	Semester
E1413 Waves and Antenna I	Winter 2019
E1518 Waves and Antenna II	Fall 2019
E9400 Advanced Topics in Electric Engineering	Fall 2019

Post-Doctoral Fellow**Oct. 2013 – Jul. 2015**

Department of Electrical and Computer Engineering
Concordia University, Montreal, QC, Canada

- Conducted research on new investigation about linearly and circularly polarized reflectarray and folded reflectarray for millimeter wave's application (30 GHz band) based on the low profile technology.

Assistant professor**July. 2013 – Jul. 2018**

Electrical Engineering Department
Faculty of Engineering, Benha University, Benha, Egypt

Duties:

- Taught undergraduate and graduate courses in the area of Electric circuits, transmission line theory and Antenna Theory.
- Taught postgraduate courses in the area of advanced electric engineering and wave propagation.

Lecturer (part-time)**Sep 2013 - May 2014**

- Military Technical College, Egypt

PhD Researcher**Dec. 2010 – Jun. 2012**

State Key Laboratory of Millimeter wave, Southeast University, Nanjing, China

Duties:

- Designed and constructed planar artificial lens antennas
- Designed and constructed novels broad-band reflectarrays

Research & Teaching Assistant**Sep 2001- Apr 2013**

Electrical Engineering Department
Faculty of Engineering, Benha University, Benha, Egypt

I taught the following courses as a teaching assistant:

Course	Semester
Antenna Theory	Every Year
Transmission Line Theory	Every Winter Sem.
Electromagnetic Field Theory	Every Fall

Logic Circuit	Every Year
Electric Circuit Analysis	Every Year

Publications

Journal Papers:

- [13] Qiang Cheng, J. Yang, M. K. T. Al-Nuaimi, A. A. Kishk and **A. Mahmoud**, "Broadband Folded Reflectarray Fed by Dielectric Resonator Antenna," in *IEEE Antennas and Wireless Propagation Letters*.
- [12] Mourad S., Qiang Cheng, Hussein A., and **Abdelhady M.**, "Wideband Circularly Polarized DRA Array with Sequential-Phase Feed at X-band ", *IET Microwaves, Antennas & Propagation (Under revision)*.
- [11] Jin Y., Cheng Z., Huifeng M., Wei Y., Liuxi Y., Juncheng K., Mingzheng C., **Abdelhady M.**, Qiang C., and Tie jun C., "Tailoring polarization states of multiple beams that carry different topological charges of orbital angular momentums," *Opt. Express* 26, pp. 31664-31674, (2018)
- [10] B. Mohammadi, **Abdelhady M.** et al., "Enhanced Reflectarray Antenna Using Elements With Reduced Reflection Phase Sensitivity," in *IEEE Antennas and Wireless Propagation Letters*, vol. 17, no. 7, pp 1334-1338, July 2018.
- [9] M. A. Moharram; **A. Mahmoud**; A. A. Kishk, "A Simple Coaxial to Circular Waveguide OMT for Low-Power Dual-Polarized Antenna Applications," in *IEEE Trans. on Microwave Theory and Techniques*, vol.66, Issue 1, 2017, pp.109-115
- [8] **A. Mahmoud**, A. A. Kishk, Z. Hao and W. Hong, "Ka-band circularly polarized reflectarray: Using a double-layers cross slot," in *IEEE Antennas and Propagation Magazine*, vol. 58, no. 4, pp. 60-68, Aug. 2016.
- [7] **A.-H. Mahmoud** and A. A. Kishk, "Ka-band low profile circularly polarized reflectarray," *Progress in Electromagnetics Research C*, Vol. 63, 43-51, 2016.
- [6] **Mahmoud, A.-E.**; Wei Hong; Yan Zhang; Kishk, A. "W-Band Multilayer Perforated Dielectric Substrate Lens " *IEEE Antennas and Wireless Propagation Letters*, vol.13, pp.734-737, 2014.
- [5] **M. Abd-Elhady**, W. Hong, Y. Zhang "A Ka-Band Reflectarray Implemented With a Single-Layer Perforated Dielectric Substrate" *IEEE Antennas and Wireless Propagation Letters*, vol.11, pp.600-603, 2012.
- [4] **A.M. Abd-Elhady**, S.H. Zainud-Deen, A.A. Mitkees and Ahmed A. Kishk, "Varying Slot Lengths Strip Loading Squared Dielectric Resonator Reflectarray," *International Journal of Electromagnetics and Applications*, Vol.2, No.3, pp. 51-55, 2012.
- [3] **A.M. Abd-Elhady**, S.H. Zainud-Deen, A.A. Mitkees and Ahmed A. Kishk, " Dual Sized Varying Slot Lengths Loading Dielectric Resonator Reflectarray," *International Journal of Electromagnetics and Applications*, Vol.2, No.3, pp.46-50, 2012.
- [2] **A.M. Abd-Elhady**, S.H. Zainud-Deen, A.A. Mitkees and Ahmed A. Kishk, "Linearly Polarized Fed Circularly Polarized DRA Reflectarray," *International Journal of Electromagnetics and Applications*, Vol.2, No.2, pp. 11-15, 2012.
- [1] S. H. Zainud-Deen, S. M. Gaber, **A. M. Abd-Elhady**, K. H. Awadalla, A. A. Kishk "

Perforated Dielectric Resonator Antenna Reflectarray " ACES journal, Vol. 26, No. 10, pp. 848-855, 2011.

Conference Proceedings (peer reviewed):

- [20] Mourad S., **Abdelhady M.**, et al, "Design and Fabrication of Engineered Reflector for Wideband Linear-to Circular Polarization Conversion," accepted, APS 2019, USA.
- [19] Mourad S.,**Abdelhady M.**, et al, "Wideband Anisotropic Unit Cell Design for Perfect Cross –Polarization Conversion," accepted, APS 2019, USA.
- [18] Saigur Jaya, Hussein A., **Abdelhady M.**, et al "A Yagi-Uda Pattern Reconfigurable Antenna for WiMAX Application," accepted, APS 2019, USA.
- [17] B. Mohammadi, **Abdelhady M.**, et al, "RCS Reduction of Reflectarray Antenna Backed with Sub-Wavelength Frequency Selective," ICEE 2019.
- [16] Mustafa K.T. A., Wei Hong, **Abdelhady M.**, "Design of High Gain Reflectarray Antenna for 77GHz Applications", APCAP 2017, China.
- [15] Mustafa K.T. A., Wei Hong, **Abdelhady M.**, "Design of Cross Polarization Conversion Metasurface Using Dumbbell-Like Unit Cell", APCAP 2017, China.
- [14] Maher K., Abdel Fattah F., Ahmed A., **Abdelhady M.**, Thomas K., "Printable, High Coding Capacity Chipless RFID Tags for Low Cost Item Tagging" ICNSC 2017.
- [13] Mustafa K.T. A., Wei Hong, Gaoxi Qi, **Abdelhady M.**, "Design of Reflective Surface for Cross Polarization Conversion and RCS Reduction" 2017 International Applied Computational Electromagnetics Society Symposium (ACES), Suzhou, 2017, pp. 1-2.
- [12] **Abdelhady M.**; Hussein A. "Wide-band Circularly Polarized Dielectric Resonator Antenna Array" 2017 IEEE International Symposium on Antennas and Propagation & USNC/URSI National Radio Science Meeting, San Diego, CA, 2017, pp. 1521-1522.
- [11] **Abdelhady M.**; Noha A., Shaymaa G., "Circularly Polarized Chamfer Shaped DRA Array" 43th National Radio Science Conference (NRSC 2017), Egypt.
- [10] **Mohamed, A-E.**; Kishk, A." Aperture Coupled Strip-line Patch Transmitarray" IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting – 2015.
- [9] **Mohamed, A-E.**; Kishk, A." Folded reflectarray with dually polarized cells" Antennas and Propagation (EuCAP), 2015 9th European Conference on Antennas and Propagation. pp.1-4, 2015.
- [8] **Mohamed, A.**; Kishk, A. "Ka-band dual mode circularly polarized reflectarray" 2014 16th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM), Victoria, Canada.
- [7] **A.M. Abd-Elhady**, S.H. Zainud-Deen, A.A. Mitkees and Ahmed A. Kishk, "Electronically Tunable Dielectric Resonator Reflectarray" 2014 16th International Symposium on Antenna Technology and Applied Electromagnetics

(ANTEM), Victoria, Canada.

- [6] **Abd-Elhady. M.A**, Saber H. Zainud-Deen, A.A. Mitkees, and A.A. Kishk "Dual Polarized Dual Feed Aperture-Coupled DRA Reflectarray" 29th National Radio Science Conference (NRSC 2012), Faculty of Engineering, Cairo Univ., Egypt, pp. 97-102, April 2012.
- [5] **A.M. Abd-Elhady**, S.H. Zainud-Deen, A.A. Mitkees and Ahmed A. Kishk, "X-Band Linear Polarized Aperture-Coupled DRA Reflectarray," 2010 International Conference on Microwave and Millimeter Wave Technology, Chengdu, China, pp. 1042 – 1044, 2010.
- [4] **A.M. Abd-Elhady**, S.H. Zainud-Deen, A.A. Mitkees and Ahmed A. Kishk, "Slot-Loading Rectangular Dielectric Resonator Elements Reflectarray ",1st Middle East Conference on Antennas and Propagation, (MECAP), Cairo, Egypt, pp. 1-3, October 2010.
- [3] S.H. Zainud-Deen, **A.M. Abd-Elhady**, A.A. Mitkees, and Ahmed A. Kishk, "Dielectric Resonator Reflectarray with Two DRA Sizes and Varying Slot Loading," 2010 IEEE International Symposium on Antennas and Propagation & USNC/URSI National Radio Science Meeting, Toronto, Canada, pp.1-4, July 2010.
- [2] S.H. Zainud-Deen, **A.M. Abd-Elhady**, A.A. Mitkees, and Ahmed A. Kishk, "Design of Reflectarray Employing Rectangular Dielectric Resonator Elements of Variable Sizes," The 26th Annual Review of Progress in Applied Computational Electromagnetics, Tampere, Finland, pp. 813-816, April 26-29, 2010.
- [1] S.H. Zainud-Deen, **Abd-Elhady**, A.A. Mitkees and A.A. Kishk, "Design of Dielectric Resonator Reflectarray Using Full-Wave Analysis," 26th National Radio Science Conference (NRSC 2009), Faculty of Engineering, Future Univ., Egypt, pp. 1-9, March 2009.

Conference Presentation:

- [1] S.H. Zainud-Deen, **Abd-Elhady**, A.A. Mitkees and A.A. Kishk, "Design of Dielectric Resonator Reflectarray Using Full-Wave Analysis," 26th National Radio Science Conference (NRSC 2009), Faculty of Engineering, Future Univ., Egypt, pp. 1-9, March 2009.
- [2] **A.M. Abd-Elhady**, S.H. Zainud-Deen, A.A. Mitkees and Ahmed A. Kishk, "Slot-Loading Rectangular Dielectric Resonator Elements Reflectarray ",1st Middle East Conference on Antennas and Propagation, (MECAP), Cairo, Egypt, pp. 1-3, October 2010.
- [3] **A.M. Abd-Elhady**, S.H. Zainud-Deen, A.A. Mitkees and Ahmed A. Kishk, "X-Band Linear Polarized Aperture-Coupled DRA Reflectarray," 2010 International Conference on Microwave and Millimeter Wave Technology, Chengdu, China, pp. 1042 – 1044, 2010.
- [4] **A.M. Abd-Elhady**, S.H. Zainud-Deen, A.A. Mitkees and Ahmed A. Kishk, "Electronically Tunable Dielectric Resonator Reflectarray" 2014 16th International

Symposium on Antenna Technology and Applied Electromagnetics (ANTEM), Victoria, Canada.

- [5] **Mohamed, A.**; Kishk, A. "Ka-band dual mode circularly polarized reflectarray" 2014 16th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM), Victoria, Canada.

Honors & Awards

- 1) Education Excellence award Jan 2018- Benha University
- 2) Education Excellence award Jun 2016 - Jun 2017- Benha University
- 3) Education Excellence award Jan 2016- Benha University
- 4) Post-Doctoral Fellowship, Concordia University, Quebec 2013-2015 (\$72,000)
- 5) PhD Scholarship, Southeast University, Nanjing, China 2010-2012 (\$25,000)
- 6) Second rank among B.Sc. students of Faculty of Engineering, Benha University, Egypt, 2000.

Scientific and Professional Activities

- Reviewer, IEEE Antennas and Wireless Propagation Letters
- Reviewer, Journal International Journal of Electronics and Communications, Elsevier.
- Reviewer, Photonics and Electromagnetics Research Symposium.

Experiences:

- Antennas R/D – VNA Measurements- Near-field Measurements – Far-field Measurements.
 - NSI planar pattern scanner 8 GHz to 50 GHz.
 - Terahertz spectroscopy (330 GHz).
 - Agilent PNA E8361C up to 67 GHz.
 - Antennas Simulation packages: CST Microwave Studio- HFSS
 - Educational Undergraduate projects (9 years).
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- High gain Broad-band planar arrays.
- Low Profile Reflectarray (CP and LP).
- Folded Reflectarray.
- Scanning Reflectarray.
- Broad-band CP arrays (DRA and low-profile structures).
- Wide-band Flat Gain Transmitarray.
- Ridge Gap Waveguides.
- Printed Ridge Gap Structures.
- Slim THz Lens.
- Artificial Flat Lens.
- Periodic Structures.
- Passive RFID Tags.
- Dual Polarized OMT Horns.
- Flat Panel Antennas.
- Base station antennas design (printed circuit and whole metallic (sub 6GHz band, 698-960-1710-2690MHz) (+45/-45 2G, 3G and LTE base station.)

Research Interest:

Artificial Lens-Transmitarray- Reflectarray- Folded reflectarray- Broad-band High Gain Antennas- Compact Broad-band compact CP Antennas- THz Lens- UWB Antennas- Mutual coupling reduction- 3D FSS- Active RFID- Low Profile Antennas- 3D Printing Antennas Artificial Lens- Textile Antenna, Dual Polarized OMT Horns and An implanted Antennas on human tissues for biomedical applications.

Personal Information

- **Nationality: Egyptian**
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- Marital status: Married with children