

Dr. Abdelhady Mohamed

Professor
Electrical Engineering Department
Faculty of Engineering
Benha University
Benha 13512, Egypt

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EDUCATION**Visiting Professor****Present**

Purple Mountain Labs, State key Laboratory of Millimeter-wave, Southeast Univ., China

Professor Promotion**Oct 2023**

Electrical and Computer Engineering, Benha University, Egypt

Associate Professor Promotion**July 2018**

Electrical and Computer Engineering, Benha University, Egypt

Post-Doctoral Fellowship**2013- 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**Professor****Oct 2023 – Present**

Electrical Engineering Department

Faculty of Engineering, Benha University, Benha, Egypt

Associate Professor**July 2018 – Present**

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

Assistant Professor**June 2013 – July 2018**

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

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

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

- Military Technical College, Egypt

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

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

Publications**Journal Papers:**

- [31] *Mohamed S. Sayed, Hatem M. Zakaria, **Abdelhady M. Abdelhady**, Abdelhalem Zekry, Interference Mitigation in Mixed-Numerology System Using Hybrid Waveforms, Ain Shams Engineering Journal, Volume 15, Issue 3,2024,102581*
- [30] *G. -L. Huang, Z. -Y. Pang, M. K. T. Al-Nuaimi, A. A. Kishk and A. Mahmoud, "A Broadband and High-Aperture-Efficiency Multilayer Transmitarray Based on Aperture- Coupled Slot Unit Cells," in IEEE Transactions on Antennas and Propagation, vol. 71, no. 12, pp. 9633-9642.*
- [29] *Rehab Ibrahim Nawar, Ashraf Yahia Hassan, **Abdelhady Mahmoud Abdelhady**"High gain wideband circularly polarized antenna with modified ground plane"Indonesian Journal of Electrical Engineering and Computer Science, Vol.32, No.1, October 2023, pp. 284~291.*
- [28] *Kiyani, A.; Asadnia, M.; Abbas, S.M.; Esselle, K.P.; **Mahmoud, A.** Wide Dual-Band Circularly Polarized Dielectric Resonator: Innovative Integration of a Single Hybrid*

Feed and Thin Grounded Metasurface. Micromachines 2023, 14, 1432.

- [27] Samar A. Refaat, Hesham A. Mohamed, **Abdelhady M. Abdelhady**, Ashraf S. Mohra "A 28/38 GHz tuned reconfigurable antenna for 5G mobile communications" *Indonesian Journal of Electrical Engineering and Computer Science*, Vol. 31, No. 1, pp: 248-258
- [26] M. K. T. Al-Nuaimi, S. -L. Zhu, W. G. Whittow, R. -S. Chen, G. -L. Huang and **A. Mahmoud**, "Design of Alvarez Beam Scanning Reflectarray With Inversely Proportional Focal Length," in *IEEE Antennas and Wireless Propagation Letters*, vol. 22, no. 6, pp. 1416-1420, June 2023
- [25] Xu, Y.; Mu, L.; Xu, Y.; **Mahmoud, A.**; Wang, Y.; Ramahi, O.M. Wearable Directional Button Antenna for On-Body Wireless Power Transfer. *Electronics* 2023, 12, 1758.
- [24] Khan, H.A.; Rafique, U.; Abbas, S.M.; Ahmed, F.; Huang, Y.; Uqaili, J.A.; **Mahmoud, A.** Polarization-Independent Ultra Wideband RCS Reduction Conformal Coding Metasurface Based on Integrated Polarization Conversion-Diffusion-Absorption Mechanism. *Photonics* 2023, 10, 281.
- [23] Yasin, A.; Gogosh, N.; Sohail, S.I.; Abbas, S.M.; Shafique, M.F.; **Mahmoud, A.** Relative Permittivity Measurement of Microliter Volume Liquid Samples through Microwave Filters. *Sensors* 2023, 23, 2884.
- [22] A. Kiyani, Nasimuddin N., Raheel M H., Affan A., Syed M., Karu P Esselle, and **A. Mahmoud**, "A Single-Feed Wideband Circularly Polarized Dielectric Resonator Antenna Using Hybrid Technique With a Thin Metasurface," in *IEEE Access*, vol. 10, pp. 90244-90253, 2022.
- [21] Ahmed A., Hijab Z., Syed M., Mohamed I. A., Gaurav V., Subhas M. and **A. Mahmoud**, "Compact Four-Port Circularly Polarized MIMO X-Band DRA" *Sensors*, MDPI, June 2022.
- [20] S Shrestha, H Zahra, A Kiyani, M Asadnia, SM Abbas, **A. Mahmoud**, "Miniaturized Wideband Antenna Prototype Operating over the Ku-Band", *Micromachines*, MDPI, 13 (3), 471, 2022
- [19] G Varshney, RS Yaduvanshi, AA Ibrahim, **A. Mahmoud**, "Technique of Controlling the Bandwidth of MIMO Rectangular Dielectric Resonator Antenna" *MAPAN*, 2022, 1-9.
- [18] Attia, H, Kishk, AA, Abdalla, MA, Gaya, S, Hamza, A, **Mahmoud, A.** , "Ridge gap waveguide antenna array with improved mutual isolation for millimeter wave applications. " *Int J RF Microw Comput Aided Eng.* 2021; 31(11):e22831.
- [17] **A. Mahmoud**, Mohamed I. Ahmed, G. Varshney, A. A. Ibrahim, "An array of staircase-shaped circularly polarized DRA," *International Journal of RF and Microwave Computer-Aided Engineering*, vol.31, issue 6, 2021
- [16] A. A. Omar, **A. Mahmoud**, J. Choi and W. Hong, "Wideband Transmissive Polarization Rotator With In-Band Notches Enabling Multiband Operation," in *IEEE Access*, vol. 9, pp. 44751-44756, 2021.
- [15] Mourad S. Ibrahim, Hussein Attia, Qiang Cheng, **A. Mahmoud** "Wideband circularly polarized aperture coupled DRA array with sequential-phase feed at X-band" *Alexandria Engineering Journal*, Volume 59, Issue 6, 2020, Pages 4901-4908.
- [14] A. A. Omar, W. Hong, A. Al-Awamry and **A. -E. Mahmoud**, "A Single-Layer Vialess Wideband Reflective Polarization Rotator Utilizing Perforated Holes," in *IEEE*
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- Antennas and Wireless Propagation Letters*, vol. 19, no. 12, pp. 2053-2056, Dec. 2020.
- [13] M. K. T. Al-Nuaimi, **A. Mahmoud**, W. Hong and Y. He, "Design of Single-Layer Circularly Polarized Reflectarray With Efficient Beam Scanning," in *IEEE Antennas and Wireless Propagation Letters*, vol. 19, no. 6, pp. 1002-1006, June 2020.
- [12] J. Yang, Q. Cheng, M. K. T. Al-Nuaimi, A. Kishk and **A. Mahmoud**, "Broadband Folded Reflectarray Fed by a Dielectric Resonator Antenna," in *IEEE Antennas and Wireless Propagation Letters*, vol. 19, no. 1, pp. 178-182, Jan. 2020.
- [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:

- [22] Arslan Kiyani, Syed Muzahir Abbas, Ladislau Matekovits, **Abdelhady**

- Mahmoud**, and Karu Esselle "Enhancing Radiation Characteristics of Antenna Arrays over a Sparse Area" 2024 IEEE International Symposium on Antennas and Propagation and INC/USNC-URSI Radio Science Meeting (AP-S/INC-USNC-URSI), July 2024.
- [21] G. -L. Huang, **M. Abdelhady**, Z. -Y. Pang and J. -J. Liang, "Broadband Flat-Gain Transmitarray," 2021 International Applied Computational Electromagnetics Society (ACES-China) Symposium, Chengdu, China, 2021, pp. 1-2.
- [20] M. S. Ibrahim, **A. Mahmoud**, A. Awamry, Z. H. Jiang, W. Hong and M. Al-Nuaimi, "Design and Fabrication of Engineered Reflector for Wideband Linear-to-Circular Polarization Converter," 2019 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, 2019, pp. 1697-1698.
- [19] M. S. Ibrahim, **A. Mahmoud**, A. Awamry, Z. H. Jiang, W. Hong and M. Al-Nuaimi, "Wideband Anisotropic Unit Cell Design for Perfect Cross-Polarization Conversion," 2019 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, 2019, pp. 1831-1832.
- [18] S. Gaya, H. Attia, S. I. Sheikh, **A. Mahmoud** and M. S. Sharawi, "A Yagi-Uda Pattern Reconfigurable Antenna for WiMAX Application," 2019 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, 2019, pp. 679-680
- [17] J. Nourinia, C. Ghobadi, B. Mohammadi, **A. Mahmoud** and I. Aryanian, "RCS Reduction of Reflectarray Antenna Backed with Sub-Wavelength Frequency Selective Surface," 2019 27th Iranian Conference on Electrical Engineering (ICEE), 2019, pp. 1627-1631
- [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." Folded reflectarray with dually polarized cells" Antennas and Propagation (EuCAP), 2015 9th European Conference on Antennas and Propagation. pp.1- 4, 2015.
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- [9] **Mohamed, A.**; Kishk, A. "Ka-band dual mode circularly polarized reflectarray" 2014 16th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM), Victoria, Canada.
- [8] **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.
- [7] **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.
- [6] Y. Zhang, **M. Abd-Elhady**, W. Hong and W. Li, "Research progress on millimeter wave transmitarray in SKLMMW," 2012 4th International High Speed Intelligent Communication Forum, Nanjing, China, 2012, pp. 1-2
- [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.
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- [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 2022- Benha University
- 2) Education Excellence award Jun 2021- Benha University
- 3) Education Excellence award Jan 2021- Benha University
- 4) Education Excellence award Jun 2020- Benha University
- 5) Education Excellence award Jan 2020- Benha University
- 6) Education Excellence award Jun 2019- Benha University
- 7) Education Excellence award Jan 2019- Benha University
- 8) Education Excellence award Jan 2018- Benha University
- 9) Education Excellence award Jun 2017- Benha University
- 10) Education Excellence award Jun 2016- Benha University
- 11) Education Excellence award Jan 2016- Benha University
- 12) Post-Doctoral Fellowship, Concordia University, Quebec 2013-2015
- 13) PhD Scholarship, Southeast University, Nanjing, China 2010-2012
- 14) 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, Progress In 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).
- 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-

Printed Ridge Gap Antennas- Passive RFID- Low Profile Antennas- 3D Printing Antennas, MIMO antennas, Textile Antenna, Dual Polarized OMT Horns, Polarizer and CP DRA.

Personal Information

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