

Curriculum Vitae

PERSONAL DATA

Name: Malek Ghuloum Malek Hussain
 Date of Birth: October 7, 1953
 Place of Birth: Kuwait City, State of Kuwait
 Nationality: Kuwaiti
 Marital Status: Married, and have three daughters
 Languages: Arabic, English, and fair knowledge of French and Spanish
 Present Address: Electrical Engineering Department
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EDUCATION

May 1983 *Doctor of Philosophy (Ph.D.)* in Electrical Engineering, Catholic University of America, Washington D.C., U.S.A.
 May 1979 *Master of Electrical Engineering (MEE)*, Catholic University of America, Washington D.C., U.S.A.
 Feb. 1977 *Bachelor of Electrical Engineering (BEE)*, Catholic University of America, Washington D.C., U.S.A.
 Doctoral Dissertation: *Radar Resolution with Nonsinusoidal Waves Distorted Due to Off-Axis Radiation*, Catholic University of America, Washington D.C., U.S.A., May 1983.

MILITARY SERVICE

Jan. 1984-Jun. 1984 Cadet, Kuwait Military Academy, State of Kuwait.
 Jul. 1984-Dec. 1984 Second Lieutenant and Technical Consultant, Signal Corps, Ministry of Defense, State of Kuwait.

PROFESSIONAL EXPERIENCE

A. Administrative Posts

Mar. 2011-Mar. 2015 *Vice President for Planning*, Kuwait University, State of Kuwait.
 Feb. 2005-Sept. 2006 *Acting Vice Rector for Educational and Information Technologies*, Arab Open University, State of Kuwait.
 Dec. 1993-June 1998 *Vice President for Academic Support Services*, Kuwait University, State of Kuwait.
 Feb. 1993-Dec. 1993 *Acting Vice President for Academic Support Services*, Kuwait University, State of Kuwait.
 Dec. 1991-Dec. 1993 *Assistant Vice President for Research and Graduate Studies, and Director of Computer Center*, Kuwait University, State of Kuwait.
 Jan. 1991-Oct 1991 *Dean of Division of Professional and Technological Programs*, Inter American University of Puerto-Rico, Bayamon, Puerto Rico, U.S.A.

B. Academic Ranks:

May 1993-Present *Professor*, Electrical Engineering Department, Kuwait University, State of Kuwait.
 Aug. 1998-Aug. 2000 *Visiting Professor*, Department of Electrical and Computer Engineering, University of British Columbia, Vancouver, British Columbia, Canada.
 May 1988-Apr. 1993 *Associate Professor*, Electrical Engineering Department, Kuwait University, State of Kuwait.
 Aug. 1988-Jun. 1989 *Visiting Associate Professor*, The Radiation Laboratory, Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI. U.S.A.
 Oct. 1983-Apr. 1988 *Assistant Professor*, Electrical Engineering Department, Kuwait University, State of Kuwait.
 Sep. 1980-May 1981 *Instructor*, Electrical Engineering Department, Catholic University of America, Washington D.C., U.S.A.
 Sep. 1979-Jan. 1980 *Instructor*, Department of Electrical Engineering and Computer Science, George Washington University, Washington D.C., U.S.A.

- Sep. 1978-May 1979 *Instructor*, Electrical Engineering Department, Catholic University of America, Washington D.C., U.S.A.
 Mar. 1977-Aug. 1977 *Telecommunications Engineer*, Microwave Department, Ministry of Communications, State of Kuwait.

PROFESSIONAL AFFILIATIONS

- Nov. 2004-Present *Fellow Member*, The World Academy of Sciences (TWAS), Trieste, Italy.
 Mar. 1990-Present *Senior Member*, The Institute of Electrical and Electronics Engineers (IEEE) Member No. 07952930.
 October 2004-Present *Member*, IEEE AESS P1672 Working Group for Development of an IEEE Standards of Ultrawideband Radar (UWBR) Terms and Definitions.
 Mar. 1985-Present *Member*, Kuwait Engineers' Society, State of Kuwait.
 Sept. 1979-Feb. 1990 *Member*, The Institute of Electrical and Electronics Engineers (IEEE) Member No. 07952930.

HONORS AND AWARDS

- June 2003 Recipient of The 2002/2003 *Teaching Excellence Award* from College of Engineering and Petroleum, Kuwait University.
 Feb. 1990 Recipient of the 1989 *Kuwait Prize for Advancement of Science*. Awarded by Kuwait Foundation for Advancement of Science (KFAS) in recognition of the best research achievements in the field of electrical engineering in the State of Kuwait. (Gold Medal, and K.D. 10,000; equivalent of \$ 35,000).
 Sep. 1980-May 1981 *Teaching Fellowship*, Department of Electrical Engineering, Catholic University of America, Washington D.C., U.S.A.
 Sep. 1979-Jan. 1980 *Teaching Fellowship*, Department of Electrical Engineering and Computer Science, George Washington University, Washington D.C., U.S.A.
 Sep. 1978-May 1979 *Teaching Fellowship*, Department of Electrical Engineering, Catholic University of America, Washington D.C., U.S.A.
 Jun. 1977-May 1983 *Full scholarship*, from Kuwait Government, for graduate studies in the United States of America.
 Jun. 1972-Feb. 1977 *Full scholarship*, from Kuwait Government, for undergraduate studies in the United States of America.

PROFESSIONAL ACTIVITIES AND CONSULTING

- April 2015-Present *Member* of the Council of Private Universities, Ministry of Higher Education, State of Kuwait.
 April 2013-Present *Member* of the Prize Council, Kuwait Foundation for the Advancement of Science.
 March 2013-Present *Member* of the TWAS Membership Advisory Committee in Engineering and Sciences, The World Academy of Sciences, Trieste, Italy.
 April 2012-Present *Member* of the Administration Council for Kuwait Occupational Standards, Assessment, and Certification Center, Ministry of Social Affairs and Labor, Kuwait.
 Jan. 2010-Jan. 2013 *Member* of the Academic Accreditation Committee, Ministry of Higher Education, State of Kuwait.
 April 2010-Oct. 2010 *Member* of the Evaluation Committee for the 2010 TWAS Prize in Engineering Sciences.
 Oct. 2006-Present *Advisor* to the Rector of Arab Open University, AOU-Headquarter, Kuwait.
 May 2005-Present *Member* of the Executive Board for the Construction Projects of the Arab Open University.
 Sept.2008-Sept.2010 *Member* of Board of Trustees, Arab Open University, Kuwait Branch.
 May 2006-May 2007 *Member* of the Steering Committee for Information Technology, Arab Open University.
 Jan. 2003-Aug. 2007 *Member* of the Academic Publications Council, Kuwait University.
 April 2006-Nov.2006 *Chairman* of the Technical Program Committee for Workshop on "Remote Sensing and GIS: Technologies and Applications", Organized by Arab School for Science and Technology
 Feb. 2003-May 2004 *Advisor* to the Executive Office for the Establishment of Kuwait Institute for Business and Technology, Kuwait.
 Jan. 2000-Aug. 2002 *Member* of the Executive Committee for the Establishment of the Arab Open University. Ministry of Education and Higher Education, Kuwait.
 April 2001-June 2001 *Coordinator* of the International Evaluation Committee for the Arab Open University, Kuwait.
 Mar. 1990-Aug. 1998 *Vice Chairman* of the board of the Institute of Electrical and Electronics Engineers (IEEE)—Kuwait Section.

June 1992-July 1998	<i>Chairman</i> of the University Professional-Consultative Committee, Kuwait University.
Jan. 1993-May 1993	<i>Member</i> of the Technical Committee for Establishing National Information Center for the Ministerial Council of the State of Kuwait.
Dec. 1991-Dec. 1992	<i>Consultant</i> to Kuwait Institute for Scientific Research (KISR) for the restructuring and privatization of the telecommunications sector in the State of Kuwait.
Mar. 1991-Aug. 1991	<i>Member</i> of the Academic Council of the Inter American University of Puerto Rico, Bayamon, Puerto Rico.
Jan. 1991-Sept. 1991	<i>Chairman</i> of Program Committee for the 1991 Second High Technology Congress, San Jaun, Puerto Rico, October, 1991. Sponsored by Inter American University of Puerto Rico.
Feb. 1990-Jun. 1990	<i>Member</i> of Evaluation Committee at Kuwait Foundation for Advancement of Science (KFAS), evaluating scientific papers published in Kuwaiti journals, for the 1989 KFAS best paper award.
Apr. 1990	<i>Invited Lecturer</i> , Department of Electrical Engineering, Sydney University, Sydney, Australia.
Oct. 1988	<i>Invited Lecturer</i> , Department of Electrical Engineering, Wayne State University, Detroit, Michigan, U.S.A.
Dec. 1989	<i>Invited Lecturer</i> , Department of Electrical Engineering, Detroit University, Detroit, Michigan, U.S.A.
Mar. 1989	<i>Invited Lecturer</i> , Environmental Research Institute of Michigan, Ann Arbor, Michigan, U.S.A.
Nov. 1986	<i>Invited Lecturer</i> , Department of Electrical Engineering. The National University of Defense Technology (Changsha Institute of Technology), Changsha, China.
Apr. 1988-Jul. 1988	<i>Member</i> of a Scientific Committee for the development of the five year (1989 - 1994) research plan for Kuwait Institute for Scientific Research (KISR).
Sep. 1987	<i>Member</i> of an official delegation from Kuwait Engineers' Society visiting universities and research laboratories in Moscow, Russia. The objective of the mission was to establish strategies for technical and scientific cooperation between research institutions in Kuwait and Russia.
Jan. 1987-Jul. 1987	<i>Consultant</i> for the military committee of the Gulf Cooperation Council Countries for establishing military industries in the gulf states.
Mar. 1985-May 1988	<i>Member</i> of the Academic Evaluation Committee at Kuwait Engineers Society, reviewing the academic qualifications of the applicants' for membership to the society.
Aug. 1984-Dec. 1986	<i>Consultant</i> for the Defense Communications Committee, Signal Corps, Ministry of Defense, Kuwait.

ACADEMIC RESPONSIBILITIES

Teaching Undergraduate Courses

ENG 101	Introduction to Engineering
EE 220	Electromagnetics
EE 245	Electrical Engineering Basics
ENG 304	Probability and Statistics for Engineering
EE 320	Theory of Electromagnetic Field
EE 481	Communications Systems
EE 482	Digital Communications
EE 484	Communications Laboratory
EE 485	Digital Signal Processing
EE 487	Radar Technology
EE 497	Electrical Engineering Design

Teaching Graduate Courses

EE 508	Random Signal Theory
EE 581	Communication Theory I
EE 582	Communication Theory II
EE 589	Selected Topics in Communications

Teaching Short Courses

May 2005	Principles of Ultrawideband Impulse Radar, 2005 IEEE Inter. Radar Conf., Washington DC, USA
Oct. 2003	Antenna Design for Short Wave, Medium Wave, and FM Wave, Kuwait

Jan. 2002	Recent Developments in Antenna Technology for telecommunications, Navigation, and Radar Systems, Kuwait
Feb. 2001	Design and Implementation Issues in Public and Private Digital Mobile Radio, Kuwait
Nov. 2000	Fixed and Mobile Antenna Design, Kuwait
Feb. 1990	Satellite Communications, Kuwait
Apr. 1988	Ultra-Wideband Radar and Communications Technology. Signal Corps, Ministry of Defense, Kuwait.

Laboratory Development

Sep. 1991-Sep. 1993	Development of Communications Systems Laboratory, Electrical and Computer Engineering Department, Kuwait University.
July 1987-June 1988	Development of Communications Systems Laboratory, Electrical and Computer Engineering Department, Kuwait University.
Aug. 1986-July 1988	Establishment of Ultrawideband Radar Research Laboratory.
Sep. 1986-Sep. 1987	Development of Microwave Laboratory, Electrical and Computer Engineering Department, Kuwait University.

Curricula Development

Jan. 1991-Aug. 1991	Development of Engineering Programs, Division of Professional and Technological Programs, Inter American University of Puerto Rico - Bayamon Campus, Puerto Rico, U.S.A.
Jan. 1987-May 1987	Development of Electrical Engineering Technology Program, Communications School of Signal Corps, Ministry of Defense, State of Kuwait.
Feb. 1986-June 1986	Member of an academic committee for developing engineering programs for the Military Academy in Kuwait.

Supervision of Theses and Projects

Yousif M. Shishter, "*Performance Analysis of UWB Impulse Phase Shift Keying and UWB Impulse Frequency Shift Keying Modulation Schemes*", Master Thesis, Electrical Engineering Department, Kuwait University, September 2013.

Mohamed El-Hadidy, "Realistic UWB MIMO Channel Model Considering Analogue Aspects and Antennas Effects", Doctoral Thesis, Department of Electronic and Information, Leibniz University, Hannover, Germany, March 2009.

Shafika Al-Awadi, "Antenna Patterns of Cylindrical Array Antenna for Narrow Band and Ultra-Wideband Waveforms", Master's Project, Electrical Engineering Department, Kuwait University, January 2005.

Mishari K. Al-Sarraf, "Wireless Communications Based on Walsh Functions," Master's Project, Electrical Engineering Department, Kuwait University, January 2002.

Mohammed S. Al-Hariri, "Adaptive Beamforming with Nonsinusoidal Gaussian Pulses", Master's Project, Electrical Engineering Department, Kuwait University, September 1995.

Nabil Al-Obeid, "*Adaptive Array Processing with Ultra-Wideband Signals*", Master's Thesis, Electrical Engineering Department, Kuwait University, July 1990.

Maha M. Al-Halaby, "*Circular Array and Nonsinusoidal Waves*", Master Thesis, Electrical Engineering Department, Kuwait University, June 1988.

ADMINISTRATIVE RESPONSIBILITIES

Served in various department-level committees, college-level committees, and university-level committees at Kuwait University:

Mar. 2011-Present	<i>Member</i> of the University Committee to Expedite the Completion of Sabah Al-Salem University City.
Mar. 2011-Present	<i>Member</i> of the University Supreme Committee for Grand Projects
Oct. 2011-Jan. 2013	<i>Chairmen</i> of the University Planning Committee.
Sept. 2008-June 2009	<i>Chairmen</i> of the College Promotion and Employment Committee.
Sept. 2007-June 2008	<i>Member</i> of the University Promotion and Employment Consultative Committee.
Sept. 2007-June 2008	<i>Member</i> of the College Promotion and Employment Committee.

- Sept. 2001-June 2009 *Member* of the Department Promotion Committee.
- Sept. 2004-Aug. 2007 *Vice Chairman* of the University Grievance Committee.
- Sept. 2001-Aug. 2007 *Member* of Department Employment Committee.
- Sept. 2001-Sept. 2003 *Member* of the Department Scholarship Committee.
- Sept. 2000-Sept. 2002 *Member* of the Sabbatical Leave Committee.
- Sept. 2000-Aug. 2003 *Member* of the Graduate Program Committee.
- Sept. 2000-Sept. 2001 *Library Coordinator*.
- Nov. 2000-June 2001 *Chairman* of the University Committee for Preparation of the Academic Programs for Girls' College at Kuwait University.
- January 2002 *Member* of the Search Committee for selecting the best researcher from the College of Engineering and Petroleum, College of Science, and College of Madecine for the academic year 2001.
- January 2000 *Member* of the Search Committee for selecting the best researcher from the College of Engineering and Petroleum for the academic year 2000.
- Sept. 1996-June 1998 *Chairman* of the University Committee for the Development of a Distance Learning System at Kuwait University.
- Jan. 1993-May 1993 *Member* of the Technical Committee for the Establishment of a National Information Center for the Ministerial Council of the State of Kuwait.
- Dec. 1992-June 1998 *Chairman* of the University Committee for Professional and Consultative Certification of Faculty Members.
- Oct. 1991-Aug. 1996 *Member* of Graduate Program Committee.
- Oct. 1991-May 1992 *Member* of Faculty ABET Committee, and Chairman of Department ABET Committee.
- Feb. 1990-June 1990 *Member* of Evaluation Committee at Kuwait Foundation for Advancement of Science (KFAS), evaluating scientific papers for the 1989 KFAS Best Paper Award.
- Nov. 1989-Aug. 1990 *Member* of University Research Committee for restructuring the funding strategy of the Research Administration at Kuwait University.
- Sept. 1989-July 1990 *Member* of College Research Committee; *Member* of Department Planning Committee; *Member* of Department Graduate Program Committee; *Member* of Department Promotions Committee.
- Aug. 1986-Dec. 1986 *Member* of University Academic Committee to study the possibilities of cooperation between Kuwait University and the UNISCO on various research and educational projects.
- Oct. 1983-May 1988 *Member* of Faculty Search Committee, Equipment and Laboratory Committee, Curricula Committee and served as Seminar Coordinator.

RESEARCH GRANTS

The following research projects were funded by the Research Administration of Kuwait University:

- Feb. 2010-Jan. 2011 Principle Investigator, Project EE01/10 titled: "*Performance Analysis of Radar Resolution Using Ultrawideband Throb Signals*", Budget K.D. 2,500 (equivalent to \$7,500).
- Jan. 2005-Dec. 2005 Principle Investigator, Project EE01/04 titled: "*Cylindrical Adaptive Array Antenna for Ultra-wideband Wireless Communications*", Budget K.D. 2,000 (equivalent to \$ 6,000).
- Jan. 1993-Dec. 1996 Principle Investigator, Project EE055 titled: "*Polarimetric Radar Based on Ultra-wideband Signals*", Budget K.D. 40,000 (equivalent to \$ 123,000).
- Nov. 1992-Oct. 1993 Principle Investigator, Project RA022 titled: "*Development of Database for KUCS Software*", Budget K.D. 700 (equivalent of \$ 2,200).
- Nov. 1987-Oct. 1990 Principal Investigator, Project EE031 titled: "*Antenna Systems for the Radiation and Reception of Nonsinusoidal Electromagnetic Waves*", Budget K.D. 49,000 (equivalent to \$ 160,000).
- Nov. 1985-Oct. 1987 Principal Investigator, Project EE027 titled: "*Development of Theory and Design of Radar Systems Based on Nonsinusoidal Waves*", Budget K.D. 12,000 (equivalent of \$ 35,000).
- Sep. 1985-May 1988 Co-investigator, Project ME23 titled: "*Development of Fabrication Techniques for Structures by Bonding from the Design and Production points of View*", Budget K.D. 450,000 (equivalent of \$ 1,250,000).
- Oct. 1983-Dec. 1984 Initiation Grant of K.D. 2,000 (equivalent of \$ 6,500) for starting research projects in the area of *ultra-wideband radar and signal processing*.

RESEARCH INTERESTS

- Ultra-wideband-impulse radar and wireless communications.
- Space-time coding for ultra-wideband impulse communications.
- Adaptive array antenna.
- Propagation and scattering of ultra-wideband signals.

PUBLICATIONS

Journals

REFERENCES

- [1] Malek G. M. Hussain, "Ambiguity Function for Monostatic and Bistatic Radar Systems Using Ultrawideband Throb Signal," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 47, No. 3, pp. -, July 2011.
- [2] Malek G. M. Hussain, and Ayman S. Al-Zayed "Apertur Sparsity Analysis of Ultrawideband Two-Dimensional Focused Array," *IEEE Transactions on Antennas and Propagation*, Vol. 56, No. 7, pp. 1908–1918, July 2008.
- [3] Malek G. M. Hussain, and Fethi B. M. Belgacem "Trnasient Solutions of Maxwell's Equations Based on Sumudu Transform," *Progress in Electromagnetic Research*, PIER vol. 74, pp. 273–289, 2007.
- [4] Malek G. M. Hussain, "Waveform Design and Generalized Ambiguity Function for Ultrawideband Nonsinusoidal Signals," *Electromagnetic Phenomena Journal, Ukrine* Vol.7, No.18 , pp. 52–65, April 2007.
- [5] Malek G. M. Hussain, "Theory and Analysis of Cylindrical Array Antenna for Ultra-Wideband Wireless Communications," *IEEE Transaction on Wireless Communications*, Vol.4, No. 6, pp. 3075–3083, Nov, 2005.
- [6] Malek G. M. Hussain "Mathematical Model for the Electromagnetic Conductivity of Lossy Materials," *Journal of Electromagnetic Waves and Applications*, JEMWA vol. 19, no. 2, pp. 271–279, 2005.
- [7] Malek G. M. Hussain "Characteristics of Ultra-Wideband Electromagnetic Missile Generated by Focused Two Dimensional Array," *Progress in Electromagnetics Research*, PIER vol. 149, pp. 143–159, 2004.
- [8] Malek G. M. Hussain, and Samir F. Mahmoud, "Energy Patterns for a Conducting Circular Disc Buried in a Homogeneous Lossy Medium and Excited by Ultra-Wideband Generalized Gaussian Pulses," *Progress in Electromagnetics Research*, PIER 43, pp. 59–74, 2003.
- [9] Malek G. M. Hussain, "Principles of Space-Time Array Processing for Ultra-Wideband Impulse Radar and Radio Communications", *IEEE Transactions on Vehicular Technology*, vol. 51, no. 3, pp. 393–403, May 2002.
- [10] Mansour A. Jaragh, and Malek G. M. Hussain, "Systolic Array Architecture for 2D Discrete Time Deconvolution: A Comparative Approach", *Electrotechnical Review*, vol. 67, no. 3, pp. 153–161, Sept. 2000.
- [11] Malek G. M. Hussain, "Ultra-Wideband Impulse Radar—An Overview of the Principles", *IEEE Aerospace and Electronic Systems Magazine*, vol. 13, no. 9, pp. 9–14, Sept. 1998.
- [12] Mansour A. Jaragh, Malek G. M. Hussain, "Systolic Array Architecture for Two-Dimensional Deconvolution", *International Journal of Computers and Electrical Engineering*, vol. 20, no. 3, pp. 233–241, May 1994.
- [13] Malek G. M. Hussain, "A Comparison of Transient Solution of Maxwell's Equations to that of modified Maxwell's Equations", *IEEE Transactions on Electromagnetic Compatibility*, vol. 34, no. 4, pp. 482–486, Nov. 1993.
- [14] Malek G. M. Hussain, "Principles of High-Resolution Radar Based on Nonsinusoidal Waves—Part III: Radar-Target Reflectivity Model", *IEEE Transactions on Electromagnetic Compatibility*, vol. 32, no. 2, pp. 144–152, May 1990.
- [15] Malek G. M. Hussain, "Principles of High-Resolution Radar Based on Nonsinusoidal Waves—Part I: Signal Representation and Pulse Compression", *IEEE Transactions on Electromagnetic Compatibility*, vol. 31, no.4, pp. 359–368, November 1989.
- [16] Malek G. M. Hussain, "Principles of High-Resolution Radar Based on Nonsinusoidal Waves—Part II: Generalized Ambiguity Function", *IEEE Transactions on Electromagnetic Compatibility*, vol. 31, no.4, pp. 369–375, November 1989.
- [17] Maha M. Al-Halaby, and Malek G. M. Hussain, "Circular Array and Nonsinusoidal Waves", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-31, no.3, pp. 254–261, August 1989.
- [18] Malek G. M. Hussain, "Comments on Wait's In Defense of J. A. Stratton", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-31, no. 2, pp. 202, May 1989. (Correspondence)
- [19] Malek G. M. Hussain, "Comments on 'Solutions of Maxwell's Equations for General Nonperiodic Waves in Lossy Media", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-31, no. 2, pp. 202–204, May 1989. (Correspondence)
- [20] Malek G. M. Hussain and Mansour Jaragh: "A Triangular Systolic Arrays for the Discrete Time Deconvolution", *IEEE Transactions on Circuits and Systems*, vol. 36, no. 4, pp. 622–628. April 1989.
- [21] Malek G. M. Hussain, Maha M. Al-Halaby, and Amjad A. Omar, "Antenna Patterns of Nonsinusoidal Waves with the Time Variation of a Gaussian Pulse—Part III", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-31, no. 1, pp. 34–48, February 1989.
- [22] Malek G. M. Hussain, "Antenna Patterns of Nonsinusoidal Waves with the Time Variation of a Gaussian Pulse—Part IV", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-31, no. 1, pp. 49–54, February 1989.
- [23] Malek G. M. Hussain, "Antenna Patterns of Nonsinusoidal Waves with the Time Variation of a Gaussian Pulse—Part I", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.4, pp. 504–512, November 1988.
- [24] Malek G. M. Hussain, "Antenna Patterns of Nonsinusoidal Waves with the Time Variation of a Gaussian Pulse—Part II", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.4, pp. 513–522, November 1988.
- [25] Malek G. M. Hussain, "Corrections to 'Two-Dimensional Beamforming with Nonsinusoidal Signals", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.3, pp. 418–419, August 1988. (Correspondence)
- [26] G. Z. Al-Sibakhi, Malek G. M. Hussain, and M. M. Sadek, "Interaction Between Void Parameters and the outputs of the Scanning Laser Acoustic Microscope", *Journal of Acoustical Imaging*, vol. 16, Edited by Lawrence W. Kessler, Plenum Publishing Corporation, May 1988.
- [27] Malek G. M. Hussain, "A Self-Steering Array for Nonsinusoidal Waves Based on Array Impulse Response Measurement", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.2, pp. 154–160, May 1988.
- [28] Malek G. M. Hussain, "Performance Analysis and Advancement of Self-Steering Arrays For Nonsinusoidal Waves—I", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.2, pp. 161–167, May 1988.
- [29] Malek G. M. Hussain, "Performance Analysis and Advancement of Self-Steering Arrays For Nonsinusoidal Waves—II", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.2, pp. 167–174, May 1988.

- [30] H. Harmuth, and Malek G. M. Hussain, "Third Response to Comments by N. J. Neatrou on Maxwell's Equations", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.2, pp. 176–178, May 1988. (Correspondence)
- [31] Malek G. M. Hussain, "General Solutions of Maxwell's Equations for Signals in a Lossy Medium: I. Electric and magnetic Field Strengths Due to Electric Exponential Ramp Function Excitation", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.1, pp. 29–36, February 1988.
- [32] Malek G. M. Hussain, "General Solutions of Maxwell's Equations for Signals in a Lossy Medium: II. Electric and Magnetic Field Strengths Due to Magnetic Exponential Ramp Function Excitation", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.1, pp. 37–40, February 1988.
- [33] Malek G. M. Hussain, "General Solutions of Maxwell's Equations for Signals in a Lossy Medium: III. Electric and Magnetic Field Strengths Due to Electric and Magnetic Sinusoidal Pulse Excitation", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.1, pp. 37–40, February 1988.
- [34] H. F. Harmuth, R. N. Boules, and Malek G. M. Hussain, "Response to Comments by N. J. Neatrou on Maxwell's Equations", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-30, no.1, pp. 90–91, February 1988. (Correspondence)
- [35] Malek G. M. Hussain, "Comments on the Comments of A. R. Djordjvic and T. Sarkar on 'Correction of Maxwell's Equations for Signals I and II' and 'Propagation Velocity of Electromagnetic Signals' ", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-29, no.4, pp. 317, November 1987. (Correspondence)
- [36] H. F. Harmuth, R. N. Boules, and Malek G. M. Hussain, "Reply to Kuester's Comments on the Use of Magnetic Conductivity", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-29, no.4, pp. 318–320, November 1987. (Correspondence)
- [37] Malek G. M. Hussain, "Antenna Energy Patterns of Nonsinusoidal Waveforms", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-29, no.1, pp. 24–31, February 1987.
- [38] Malek G. M. Hussain, "A Self-Steering Two-Dimensional Planar Array for Nonsinusoidal Waves", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-28, no.4, pp. 231–239, November 1986.
- [39] Malek G. M. Hussain, "Three-Dimensional Antenna Patterns for Nonsinusoidal Waves", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-28, no.4, pp. 240–248, November 1986.
- [40] Malek G. M. Hussain, "Line-Array Beam-Forming and Monopulse Techniques Based on Slope Patterns of Nonsinusoidal Waveforms", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-27, no.3, pp. 141–153, August 1985.
- [41] Malek G. M. Hussain, "A Self-Steering Array for Nonsinusoidal Waves", *IEEE Transactions on Electromagnetic Compatibility*, vol. EMC-28, no. 2, pp. 96–104, May 1985.

Conferences and Symposia

REFERENCES

- [1] Malek G. M. Hussain "Ambiguity Function of Bipolar Ultrawideband Throb Signal", *Proceedings of 2014 IEEE Radar Conference, Cincinnati, OH, USA* pp. 376–381, May 19–23, 2014.
- [2] Malek G. M. Hussain "Orthogonal Signals and Modulation Schemes for Ultrawideband Wireless Communications", *Proceedings of Innovations on Communication Theory International Conference, Istanbul, Turkey* pp. 21–26, Oct. 3–5, 2012.
- [3] Malek G. M. Hussain "Array Beam Patterns of UWB-Throb Signals with Random -Throb Rate", *Proceedings of 2012 IEEE Radar Conference, Atlanta, GA, USA* pp. 376–381, May 15–20, 2012.
- [4] Malek G. M. Hussain "Signal Design for Ultrawideband High Resolution Radar", *Proceedings 2011 International Radar Symposium, Leipzig, Germany* pp. 553–559, Sept. 7–9, 2011.
- [5] Malek G. M. Hussain, and Mohammed A. R. Kourah "Space-Time Array Processing Based on Ultrawideband Throb Signal", *Proceedings of 2010 IEEE International Radar Conference, Washington DC, USA* pp. 474–478, May 10–14, 2010.
- [6] Malek G. M. Hussain, "Delay-Doppler Ambiguity Function for Ultrawideband Throb Signals", *Proceedings of 2008 IEEE International Conference on Ultrawideband, Hanover, Germany* pp. 97–100, Septemebr 10–13, 2008.
- [7] Malek G. M. Hussain, "Waveform Design and Modulation Schemes for Impulse Communications and Radar", *Proceedings of 2007 IEEE Third International Waveform Diversity and Design Conference, Piza, Italy* pp. 260–264, June 4–8, 2007.
- [8] Malek G. M. Hussain, "Principles and Applications of Ultrawideband Impulse Radar", *Proceedings of Workshop on Remote Sensing and GIS: Techniques and Applications, Kuwait* pp. 171–184, Nov. 25–28, 2006. (Invited Paper)
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