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### **International Researcher IDs**

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### **Education Information**

Doctorate, Arizona State University, Electrical Engineering, United States Of America 1991 - 1995

### **Research Areas**

Electromagnetic Waves, Antennas and Propagation

### **Academic Titles / Tasks**

Visiting Lecturer, Marmara University, Faculty of Engineering, Electrical and Electronics Engineering, 2017 - Continues

### **Courses**

Electronics 2, Undergraduate, 2020 - 2021

### **Published journal articles indexed by SCI, SSCI, and AHCI**

- I. **Analysis of emission properties of intermixed InGaN/GaN quantum wells using a concentration-dependent interdiffusion model**  
Susilo T. B., Khan I., ALSUNAIDI M.  
European Physical Journal D, vol.73, no.12, 2019 (SCI-Expanded)
- II. **Characterization of atmospheric absorption in the 60 GHz frequency band using a multi-pole material model**  
Arvas M., Arvas E., ALSUNAIDI M.  
Applied Computational Electromagnetics Society Journal, vol.34, no.12, pp.1881-1887, 2019 (SCI-Expanded)
- III. **Numerical study of propagation properties of surface plasmon polaritons in nonlinear media**  
Sagor R. H., Ghulam Saber M., Alsunaidi M.  
European Physical Journal D, vol.70, no.3, 2016 (SCI-Expanded)
- IV. **A possible approach on optical analogues of gravitational attractors** Damián P. San-Román-Alerigil  
Slimane A. B., Ng T. K., Alsunaidi M., Ooi B. S.  
Optics Express, vol.21, no.7, pp.8298-8310, 2013 (SCI-Expanded)

- V. **Electron irradiation induced reduction of the permittivity in chalcogenide glass (As<sub>2</sub>S<sub>3</sub>) thin film**  
San-Román-Alerigi D. P., Anjum D. H., Zhang Y., Yang X., Benslimane A., Ng T. K., Hedhili M. N., Alsunaidi M., Ooi B. S.  
Journal of Applied Physics, vol.113, no.4, 2013 (SCI-Expanded)
- VI. **A simple FDTD algorithm for simulating EM-wave propagation in general dispersive anisotropic material**  
Al-Jabr A. A., Alsunaidi M., Ng T., Ooi B. S.  
IEEE Transactions on Antennas and Propagation, vol.61, no.3, pp.1321-1326, 2013 (SCI-Expanded)
- VII. **Generation of J<sub>0</sub>-Bessel-Gauss beam by a heterogeneous refractive index map**  
San-Roman-alerigi D. P., Ng T. K., Zhang Y., Slimane A. B., Alsunaidi M., Ooi B. S.  
Journal of the Optical Society of America A: Optics and Image Science, and Vision, vol.29, no.7, pp.1252-1258, 2012 (SCI-Expanded)
- VIII. **Efficient NL-FDTD solution schemes for the phase-sensitive second harmonic generation problem**  
Alsunaidi M., Al-Hajiri F. S.  
Journal of Lightwave Technology, vol.27, no.22, pp.4964-4969, 2009 (SCI-Expanded)
- IX. **An efficient time-domain algorithm for the simulation of heterogeneous dispersive structures**  
Al-Jabr A., Alsunaidi M.  
Journal of Infrared, Millimeter, and Terahertz Waves, vol.30, no.11, pp.1226-1233, 2009 (SCI-Expanded)
- X. **A new carrier-free nonlinear FDTD algorithm suitable for the moving computational window technique**  
Alsunaidi M., Al-Mudhaffar H. M.  
IEEE Photonics Technology Letters, vol.21, no.13, pp.878-880, 2009 (SCI-Expanded)
- XI. **A general ADE-FDTD algorithm for the simulation of dispersive structures**  
Alsunaidi M., Al-Jabr A. A.  
IEEE Photonics Technology Letters, vol.21, no.12, pp.817-819, 2009 (SCI-Expanded)
- XII. **A FDTD algorithm for the analysis of short optical pulse second harmonic generation in dispersive media**  
Alsunaidi M., Alhajiri F., Masaudi H.  
Microwave and Optical Technology Letters, vol.51, no.4, pp.1097-1100, 2009 (SCI-Expanded)
- XIII. **Vectorial FDTD technique for the analysis of optical second-harmonic generation**  
Alsunaidi M., Al-Mudhaffar H. M., Masoudi H. M.  
IEEE Photonics Technology Letters, vol.21, no.5, pp.310-312, 2009 (SCI-Expanded)
- XIV. **Influence of electrode parameters on the performance of optically controlled MESFETs**  
Alsunaidi M., Al-Absi M.  
Optics and Laser Technology, vol.40, no.5, pp.711-715, 2008 (SCI-Expanded)
- XV. **Optoelectronic conversion of short pulses in sub-micrometer gaas active devices**  
Alsunaidi M.  
Optical and Quantum Electronics, vol.40, no.9, pp.685-694, 2008 (SCI-Expanded)
- XVI. **FDTD analysis of microstrip patch antenna on ferrite substrate**  
Alsunaidi M.  
Microwave and Optical Technology Letters, vol.50, no.7, pp.1848-1851, 2008 (SCI-Expanded)
- XVII. **Simulation of beam propagation in second-order nonlinear optical media**  
Furati K., Alsunaidi M., Masoudi H.  
Microwave and Optical Technology Letters, vol.32, no.4, pp.312-316, 2002 (SCI-Expanded)
- XVIII. **An explicit finite-difference scheme for wave propagation in nonlinear optical structures**  
Furati K., Alsunaidi M., Masoudi H.  
Applied Mathematics Letters, vol.14, no.3, pp.297-302, 2001 (SCI-Expanded)
- XIX. **Numerical characterization of optically controlled MESFETs using an energy-dependent physical simulation model**  
Alsunaidi M., Kuwayama T., Kawasaki S.  
IEICE Transactions on Electronics, no.7, pp.869-874, 2001 (SCI-Expanded)
- XX. **Numerical investigations of optically induced gunn oscillations in MESFET-like structures**

- Alsunaidi M.  
Microwave and Optical Technology Letters, vol.28, no.1, pp.72-75, 2001 (SCI-Expanded)
- XXI. **Time-domain algorithm for the analysis of second-harmonic generation in nonlinear optical structures**  
Alsunaidi M., Masoudi H. M., Arnold J. M.  
IEEE Photonics Technology Letters, vol.12, no.4, pp.395-397, 2000 (SCI-Expanded)
- XXII. **Energy model for optically controlled MESFETs**  
Alsunaidi M.  
Microwave and Optical Technology Letters, vol.26, no.1, pp.48-52, 2000 (SCI-Expanded)
- XXIII. **FDTD simulation of antenna coating effects on the radiation properties of cellular phones**  
Alsunaidi M., Hamid A.  
Microwave and Optical Technology Letters, vol.23, no.1, pp.52-54, 1999 (SCI-Expanded)
- XXIV. **Time-domain finite-difference beam propagation method**  
Masoudi H. M., AlSunaidi M., Arnold J. M.  
IEEE Photonics Technology Letters, vol.11, no.10, pp.1274-1276, 1999 (SCI-Expanded)
- XXV. **PML-FDTD formulation for the simulation of optical structures**  
AlSunaidi M., ElSallal W.  
Microwave and Optical Technology Letters, vol.22, no.5, pp.355-358, 1999 (SCI-Expanded)
- XXVI. **Determination of the permittivity of spherical scatterers using a neural network approach**  
Hamid A., AlSunaidi M.  
Arabian Journal for Science and Engineering, vol.24, pp.89-94, 1999 (SCI-Expanded)
- XXVII. **A parallel implementation of a two-dimensional hydrodynamic model for microwave semiconductor device including inertia effects in momentum relaxation**  
Alsunaidi M., Hammadi S. M., El-Ghazaly S. M.  
International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, vol.10, no.2, pp.107-119, 1997 (SCI-Expanded)
- XXVIII. **Electromagnetic wave effects on microwave transistors using a full-wave time-domain model**  
Alsunaidi M., Sohel Imtiaz S., Ei-Ghazaly S. M.  
IEEE Transactions on Microwave Theory and Techniques, vol.44, no.6, pp.799-808, 1996 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Electromagnetic field coupling between cellular phones using FDTD analysis**  
Hamid A., AlSunaidi M.  
IEEE Antennas and Propagation Society, AP-S International Symposium (Digest), vol.3, pp.86-89, 2001 (Scopus)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Analysis of oxygen absorption at 60 GHz frequency band**  
Arvas M., ALSUNAIDI M.  
2019 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, APSURSI 2019, Georgia, United States Of America, 7 - 12 July 2019, pp.2127-2128
- II. **A novel EBG structure to improve isolation in MIMO antenna**  
Altaf A., Alsunaidi M., Arvas E.  
2017 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, USNC-URSI 2017, California, United States Of America, 9 - 14 July 2017, pp.105-106
- III. **Plasmonic Nanostructured Cellular Automata**  
Alkhazraji E., Ghalib A., Manzoor K., Alsunaidi M.  
1st Nanophotonics and Micro/Nano Optics International Conference, NANOP 2016, Paris, France, 7 - 09 December

- IV. **Analysis of nanoscale voids in nanorod plasmonic clusters for imaging applications**  
Alkhazraji E., Alsunaidi M.  
16th IEEE International Conference on Nanotechnology - IEEE NANO 2016, Sendai, Japan, 22 - 25 August 2016, pp.498-500
- V. **Efficient light extraction from GaN LEDs using gold-coated ZnO nanoparticles**  
Alhadidi A., Al-Taweel H., Al-Dakhil A., Al-Zahrani A., Alkhazraji E., Alsunaidi M.  
3rd IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies, AEECT 2015, Amman, Jordan, 3 - 05 November 2015
- VI. **Tuning of bowtie nano-antenna resonance using As<sub>2</sub>S<sub>3</sub> chalcogenide glass substrate**  
Khan I., Alsunaidi M.  
2015 IEEE 8th GCC Conference and Exhibition, GCCCE 2015, Muscat, Oman, 1 - 04 February 2015
- VII. **Intermixing effects on emission properties of InGaN/GaN coupled Quantum wells**  
Susilo T. B., Alsunaidi M., Shen C., Ooi B. S.  
2015 IEEE 8th GCC Conference and Exhibition, GCCCE 2015, Muscat, Oman, 1 - 04 February 2015
- VIII. **Synthesis and photoluminescence of metal coated ZnO nanoparticles**  
Shemis M., Gondal M., Alkhazraji E., Najmi M., Abalkhail M., Khan I., Susilo T., Rashid S., Alsunaidi M.  
2014 11th Annual High Capacity Optical Networks and Emerging/Enabling Technologies (Photonics for Energy), HONET-PfE 2014, North-Carolina, United States Of America, 15 - 17 December 2014, pp.75-78
- IX. **An FDTD algorithm for simulating light propagation in anisotropic dynamic gain media**  
Al-Jabr A., San Roman Alerigi D., Ooi B., Alsunaidi M.  
Semiconductor Lasers and Laser Dynamics VI, Brussels, Belgium, 14 - 17 April 2014, vol.9134
- X. **Photonic analogies of gravitational attractors**  
San-Roman-Alerigi D. P., Ng T. K., Slimane A. B., Zhang Y., Ooi B. S., Alsunaidi M.  
2013 Saudi International Electronics, Communications and Photonics Conference, SIECPC 2013, Riyadh, Saudi Arabia, 27 - 30 April 2013
- XI. **Effective antireflection properties of porous silicon nanowires for photovoltaic applications**  
Najar A., Al-Jabr A. A., Slimane A. B., Alsunaidi M., Ng T. K., Ooi B. S., Sougrat R., Anjum D. H.  
2013 Saudi International Electronics, Communications and Photonics Conference, SIECPC 2013, Riyadh, Saudi Arabia, 27 - 30 April 2013
- XII. **TE photonic modes in metal-insulator-metal structures**  
Khan M. Z. U., Mujahid M., Alsunaidi M.  
2013 Saudi International Electronics, Communications and Photonics Conference, SIECPC 2013, Riyadh, Saudi Arabia, 27 - 30 April 2013
- XIII. **Plasmonic cavities for enhanced optical confinement**  
Ahmed W., Alsunaidi M.  
2013 Saudi International Electronics, Communications and Photonics Conference, SIECPC 2013, Riyadh, Saudi Arabia, 27 - 30 April 2013
- XIV. **An FDTD algorithm for simulation of em waves propagation in laser with static and dynamic gain models**  
Al-Jabr A., Ooi B., Alsunaidi M.  
2013 Saudi International Electronics, Communications and Photonics Conference, SIECPC 2013, Riyadh, Saudi Arabia, 27 - 30 April 2013
- XV. **Sensing properties of plasmonic ring resonators**  
Mujahid M., Ahmed W., Alsunaidi M.  
2013 Saudi International Electronics, Communications and Photonics Conference, SIECPC 2013, Riyadh, Saudi Arabia, 27 - 30 April 2013
- XVI. **SPP propagation in nonlinear glass-metal interface**  
Sagor R., Alsunaidi M., Ooi B.  
8th International Conference on High-Capacity Optical Networks and Emerging Technologies, HONET 2011, Riyadh, Saudi Arabia, 19 - 21 December 2011, pp.241-243

- XVII. Time-domain BPM for modeling ultrashort pulsed optical beams in dispersive medium**  
Akond M. S., Masoudi H. M., Alsunaidi M.  
10th International Conference on Laser and Fiber-Optical Networks Modeling, LFNM 2010, Sevastopol, Ukraine, 12 - 14 September 2010, pp.110-112
- XVIII. Time-domain analysis of surface-plasmon-polariton propagation in Ag nano-films using a generalized polarization approach**  
Al-Jabr A., Alsunaidi M.  
2010 Photonics Global Conference, PGC 2010, Orchard, Singapore, 14 - 16 December 2010
- XIX. A general ADE-FDTD algorithm for the simulation of different dispersive materials**  
Al-Jabr A., Alsunaidi M.  
Progress in Electromagnetics Research Symposium 2009, PIERS 2009 Beijing, Beijing, China, 23 - 27 March 2009, vol.1, pp.268-271
- XX. Time-domain analysis of wideband optical pulse SHG in layered dispersive material**  
Alsunaidi M., Al-Hajiri F.  
Progress in Electromagnetics Research Symposium 2009, PIERS 2009 Beijing, Beijing, China, 23 - 27 March 2009, vol.2, pp.1667-1670
- XXI. A Higher-order accurate FDTD solution to scalar SHG problems**  
Alsunaidi M., Al-Hajiri F.  
Progress in Electromagnetics Research Symposium 2007, PIERS 2007 Prague, Prague, Czech Republic, 27 - 30 August 2007, pp.475-478
- XXII. Full-wave solution of the second harmonic generation problem using a nonlinear FDTD algorithm**  
Al-Mudhaffar H., Alsunaidi M., Masoudi H.  
Progress in Electromagnetics Research Symposium 2007, PIERS 2007 Prague, Prague, Czech Republic, 27 - 30 August 2007, pp.479-482
- XXIII. Microwave performance of optically controlled mesfets**  
Alsunaidi M., Al-Absi M.  
2003 10th IEEE International Conference on Electronics, Circuits and Systems, ICECS2003, Sharjah, United Arab Emirates, 14 - 17 December 2003, vol.3, pp.1304-1307
- XXIV. Effects of electrode spacing on the response of optically controlled MESFETs**  
Alsunaidi M., Al-Absi M.  
3rd IEEE/LEOS International Conference on Numerical Simulation of Semiconductor Optoelectronic Devices, NUSOD 2003, Tokyo, Japan, 14 - 16 October 2003, pp.51-52
- XXV. DC characteristic analysis using physical model and the FDTD method for the illuminated MESFET**  
Kuwayama T., Kawasaki S., Alsunaidi M.  
2001 Asia-Pacific Microwave Conference, Taipei, Taiwan, 3 - 06 December 2001, vol.2, pp.726-729
- XXVI. FDTD analysis of antenna coating effects on the performance of cellular phones**  
Alsunaidi M., Hamid A.  
1998 IEEE Antennas and Propagation Society International Symposium, APSURSI 1998, Georgia, United States Of America, 21 - 26 June 1998, vol.1, pp.520-523
- XXVII. Inverse scattering by dielectric circular cylindrical scatterers using a neural network approach**  
Hamid A., AlSunaidi M.  
Proceedings of the 1997 IEEE Antennas and Propagation Society International Symposium. Part 4 (of 4), Montreal, Canada, 13 - 18 July 1997, vol.4, pp.2278-2281
- XXVIII. Performance comparison of MODFET and MESFET using combined electromagnetic and solid-state simulator**  
Imtiaz S., Alsunaidi M., El-Ghazaly S. M.  
Proceedings of the 1996 IEEE MTT-S International Microwave Symposium Digest. Part 1 (of 3), San-Francisco, Costa Rica, 17 - 21 June 1996, vol.3, pp.1783-1786
- XXIX. Electron-wave interaction in submicrometer gate field-effect transistors**  
AlSunaidi M., El-Ghazaly S. M.  
Proceedings of the 1995 IEEE MTT-S International Microwave Symposium. Part 1 (of 3), Orlando, FL, USA, 16 - 20

May 1995, vol.3, pp.1257-1260

XXX. **High-frequency large-signal physical modeling of microwave semiconductor devices**

AlSunaidi M., El-Ghazaly S. M.

Proceedings of the 1995 IEEE MTT-S International Microwave Symposium. Part 1 (of 3), Orlando, FL, USA, 16 - 20

May 1995, vol.2, pp.619-621

XXXI. **High-frequency time-domain modeling of GaAs FETs using hydrodynamic model coupled with Maxwell's equations**

Alsunaidi M., El-Ghazaly S. M.

Proceedings of the IEEE MTT-S International Microwave Symposium, San Diego, CA, USA, 23 - 27 May 1994, vol.1,

pp.397-400

## **Metrics**

Publication: 61

Citation (WoS): 316

Citation (Scopus): 399

H-Index (WoS): 8

H-Index (Scopus): 9