

## Dr. MOHAMMAD ALSUNAIIDI

### Personal Information

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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

### Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Analysis of emission properties of intermixed InGaN/GaN quantum wells using a concentration-dependent interdiffusion model**  
Susilo T. B. , Khan I, ALSUNAIIDI M.  
European Physical Journal D, vol.73, no.12, 2019 (Journal Indexed in SCI)
- II. **Characterization of atmospheric absorption in the 60 GHz frequency band using a multi-pole material model**  
Arvas M., Arvas E., ALSUNAIIDI M.  
Applied Computational Electromagnetics Society Journal, vol.34, no.12, pp.1881-1887, 2019 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- IV. **A possible approach on optical analogues of gravitational attractors** **Damián P. San-Román-Alerigi1**  
Slimane A. B. , Ng T. K. , Alsunaidi M., Ooi B. S.  
Optics Express, vol.21, no.7, pp.8298-8310, 2013 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- XII. **A FDTD algorithm for the analysis of short optical pulse second harmonic generation in dispersive media**  
Alsunaidi M., Alhajiri F., Masoudi H.  
Microwave and Optical Technology Letters, vol.51, no.4, pp.1097-1100, 2009 (Journal Indexed in SCI)
- 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 (Journal Indexed in 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- XXII. **Energy model for optically controlled MESFETs**  
Alsunaidi M.  
Microwave and Optical Technology Letters, vol.26, no.1, pp.48-52, 2000 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)
- 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 (Journal Indexed in SCI)

### 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 (Refereed Journals of Other Institutions)

### 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 2016, vol.139
- 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

## Citations

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