

Curriculum Vita

Contact Data

- Name: Anwar Hasan Jarndal
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Personal Data

- Date of birth: 01-01-1973.
- Place of birth: the town of Zabid, Hodeidah region, Yemen.
- Nationality: Yemeni.

Education

- B.Sc. degree (with honors) in Electronic and Communication Engineering from Applied Sciences University, Amman, Jordan, 1998 (V. Good with honors).
- M.S. degree in Electronic and Communication Engineering from Jordan University of Science and Technology, Irbid, Jordan, 2001 (V. Good).
- Ph.D. degree in Electrical Engineering from the University of Kassel, Kassel, Germany, 2006 (V. Good).
- Post-doctoral fellow at Ecole de Technologie Superieure of Quebec University, Montreal, Canada, 2008.

Academic Experience

- Teaching assistant with the department of Electrical Engineering of Jordan University of Science and Technology, Irbid, Jordan, from October 1998 to January 2001.
- Lecturer with the department of Computer Engineering of Hodeidah University, Hodeidah, Yemen, from November 2001 to November 2002.
- Assistant professor in the department of Computer Engineering of Hodeidah University, Hodeidah, Yemen, since April 2007.
- Vice Dean of Academic Affairs of Computer Engineering and Science Faculty of Hodeidah University, Hodeidah, Yemen, December 2010.
- Assistant professor at the department of Electrical and Computer Engineering of University of Nizwa, Nizwa, Oman, from 2011 to 2013.
- Acting Chair for the department of Electrical Engineering of University of Sharjah, Sharjah, UAE, Summer 2016.

- Acting Dean for the College of Engineering of University of Sharjah, Sharjah, UAE, Summer 2016.
- Acting Dean for the College of Engineering of University of Sharjah, Sharjah, UAE, Summer 2019.
- Assistant professor at the department of Electrical Engineering of University of Sharjah, Sharjah, UAE from 2013 to June, 2017.
- Currently, associate professor at the department of Electrical Engineering of University of Sharjah, Sharjah, UAE.
- Graduate studies coordinator for the department of Electrical Engineering of University of Sharjah, Sharjah, UAE .

Professional Experience

- Training course in TV and Radio-Cassette maintenance and troubleshooting, Al-Rafedin institute, Baghdad, Iraq, 1994.
- Practical training in the Jordanian Electrical Company, the Control Center, Amman, Jordan, 1996.
- Practical training in the Middle East Complex for Engineering, Electrical and Heavy Industrial PLC, Amman, Jordan, 1997.
- B.Sc. graduation project in converting a domestic type TV receiver in to a laboratory experimental set, 1998.
- Potential researcher in the Mobile-GaN project of the University of Kassel, Kassel, Germany, 2007.
- Adjunct Researchers in iRadio Lab of University of Calgary, Calgary, Canada.
- Visiting researcher in Ecole de Technologie Superieure, Quebec University, Montreal, Canada, Summer 2014.
- Visiting researcher in iRadio Lab, University of Calgary, Calgary, Canada, Summer 2017.

Language Skills

- Arabic: Speaking and writing.
- English: Speaking and writing.
- Germany: Speaking.

Computer Skills

- Applications: Microsoft office and Corel draw.
- Languages: Fortran, C, C++, Assembly, and Matlab.
- Computer Aided Design Softwares: PSPICE, COMSOL and ADS.

Awards and Honors

- Academic award of Applied Sciences University, Amman, Jordan, for three times.
- Graduation with honors from Applied Sciences University, Amman, Jordan, 1998.
- Nominated by Marquis 'Who's Who in Science and Engineering for 2006 Edition'.
- Best Paper Award at the 3rd Symposium of Nizwa College of Technology, Nizwa, Oman, May 2012.
- 2nd place Best student paper award for my master students in the IEEE International Conference on Electrical and Computing Technologies and Applications, Ras al-Khaimah, UAE, 2017.

- 3rd place of Best student paper award for my master students in the IEEE International Conference on Electrical and Computing Technologies and Applications, Ras al-Khaimah, UAE, 2019.
- University of Sharjah annual incentives award for distinguished faculty in scientific research for the academic year 2018/2019.

Scholarships

- National scholarship from the Yemen government for B.Sc. study, 1992.
- National scholarship from the Yemen government for M.S. study, 1998.
- German Academic Exchange Service (DAAD), Germany, scholarship for Ph.D. study, 2004.
- Post-doctoral fellow at Ecole de Technologie Superieure of Quebec University, Montreal, Canada, 2008.

Memberships

- Member of IEEE (Institute of Electrical and Electronics Engineers).
- Member of IEEE Communication Society.
- Member of IEEE Electron Devices Society.
- Member of IEEE Solid-State Circuits Society

Research Interests

- Active Devices Modeling, Nonlinear Devices and Circuits Characterization, Power Amplifier Design, Genetic Optimisation, Neural Networks Modeling, Fuzzy Logic and Radio-Channel Modeling.

Taught Courses

- Electric Circuits Analysis, Fundamentals of Electronics, Electronic Circuits, Digital Electronics, Digital Design, Microelectronics, Analog Communications, Digital Communications, Communication Systems, Wireless Communications, Computer Networks, Control Systems, C programming, Matlab Programming, Microprocessors and Microcontrollers, Electrical Technology, Signals and Systems, Electromagnetisms and Applications, Measurements and Instrumentation, Numerical Methods, and optoelectronics.

List of Publications

Master Thesis and Ph.D. Dissertation

- **A. Jarndal**, "Propagation model for building blockage in the mid earth satellite mobile communication systems" M.S. thesis, Department of electrical engineering, Jordan University of Science and Technology, Irbid, Jordan, 2001.
- **A. Jarndal**, "Large-Signal Modeling of GaN Device for High Power Amplifier Design," Ph.D. Dissertation, Department of High Frequency Engineering, University of Kassel, Kassel, Germany, 2006.

Conferences

1. **A. Jarndal** and G. Kompa, "A New Small Signal Model Parameter Extraction Method Applied to GaN Devices," in *IEEE MTT-S International Microwave Symposium Digest*, Long Beach, CA, June 2005, pp. 1-4.

2. **A. Jarndal**, B. Bunz and G. Kompa, "Accurate Large-Signal Modeling of AlGa_N-Ga_N HEMT Including Trapping and Self-Heating Induced Dispersion," in *IEEE International Symposium on Power Semiconductor Devices and IC's*, Napoli, Italy, June 2006, pp. 1-4.
3. **A. Jarndal** and G. Kompa, "Large-Signal Model for AlGa_N/Ga_N HEMT for Designing High Power Amplifiers of Next Generation Wireless Communication Systems," in *IEEE International Conference in Communication and Signal Processing*, Dubai, UAE, November 2007, pp. 77-80.
4. **A. Jarndal**, P. Aflaki, L. Degachi, A. Birafane, A. Kouki, R. Negra and F. M. Ghannouchi, "Large-Signal Modeling of AlGa_N/Ga_N HEMTs for RF Switching-Mode Power Amplifiers Design," in *IEEE Regional Symposium on Microelectronic*, Kota Bahru, Malaysia, August 2009.
5. **Anwar Jarndal**, Pouya Aflaki, Louay Degachi, Ahmed Birafane, Ammar Kouki, Renato Negra and Fadhel M. Ghannouchi, "On the Large-Signal Modeling of AlGa_N/Ga_N HEMTs for RF Switching-Mode Power Amplifiers Design," in *Asia-Pacific Microwave Conference*, Singapore, December 2009, Paper ID: TH2G-3.
6. **A. Jarndal**, A. Zena Markos, and G. Kompa, "Improved Parameter Extraction Method for Ga_N HEMT on Si Substrate," in *IEEE MTT-S Int Microwave Symposium Digest*, Anaheim CA, June 2010, pp. 1668-1671.
7. **A. Jarndal**, P. Aflaki, A. Kouki and F. M. Ghannouchi, "Large-Signal Modeling of AlGa_N/Ga_N HEMTs Based on DC IV and S-parameter Measurements," in *IEEE International conference on Semiconductor*, Melaka, Malaysia, June 2010, pp. 41-44.
8. **A. Jarndal**, "Genetic Algorithm Based Extraction Method for Distributed Small-Signal Model of Ga_N HEMT," *IEEE International conference on Semiconductor*, Melaka, Malaysia, June 2010, pp. 48-51.
9. **A. Jarndal**, Swaroop Pillai, Hussein Abdulqader and Fadhel M. Ghannouchi, "A Genetic Neural Network Modeling of Ga_N HEMTs for RF Power Amplifiers Design," in *IEEE International Conference on Microelectronics*, Tunisia, December 2011, Paper ID: 94.
10. **A. Jarndal**, "Gallium Nitride Based RF Power Amplifier for Future Wireless Communication Systems," in *the 3rd Symposium of Nizwa College of Technology*, Nizwa, Oman, May 2012 (Best Paper Award).
11. **A. Jarndal**, S. Pillai, H. Abdulqader and G. Kompa, "On the Large-Signal Modeling of AlGa_N/Ga_N Devices Using Genetic Neural Networks," in *7th European Microwave Integrated Circuits Conference*, Amsterdam, Netherlands, October 2012, pp. 60-63.
12. **A. Jarndal**, "Application of Genetic Neural Networks for Modeling of Active Devices," in *the 19th International Conference on Neural Information Processing*, Doha, Qatar, November 2012, Lecture Notes in Computer Science, vol. 7666, 2012, pp. 231-239.
13. **A. Jarndal**, "Measurements Uncertainty and Modeling Reliability of Ga_N HEMTs," in the International Conference on Modeling, Simulation and Applied Optimization conference, Tunisia, Hammamet, April 2013, pp. 1-4.
14. **A. Jarndal**, "A Simplified Modelling Approach for AlGa_N/Ga_N HEMTs Using Pinched Cold S-parameters," in the International Conference on Modeling, Simulation and Applied Optimization conference, Tunisia, Hammamet, April 2013, pp. 1-4.
15. **A. Jarndal**, "Load Forecasting for Power System Planning Using a Genetic-Fuzzy-Neural Networks Approach," in the IEEE – GCC Conference and Exhibition, Doha, Qatar, November 2013, pp. 44 - 48.

16. **A. Jarndal**, "Parasitic Elements Extraction of AlGaN/GaN HEMTs on SiC Substrate Using Only Pinch-off S-parameter Measurements," in the *IEEE International Conference on Microelectronics*, Doha, Qatar, December 2014, pp. 13-16.
17. **A. Jarndal**, "Combined Genetic Algorithm and Neural Network Technique for Transistor Modeling," in the 2nd International Conference on Communications, Signal Processing, and their Applications (ICCSPA'15), Sharjah, UAE, February 2015, pp. 1-4, (DOI: 10.1109/ICCSPA.2015.7081300).
18. **A. Jarndal**, Omar A. Alhammadi and Rashid H. Al-Ali "GaN Power Amplifiers Design Using Genetic Neural Network Model," in 2nd International Conference on Communications, Signal Processing, and their Applications (ICCSPA'15), Sharjah, UAE, February 2015, pp. 1-6, (DOI: 10.1109/ICCSPA.2015.7081304).
19. **A. Jarndal**, Riadh Essaadali, and Ammar Kouki, "A General and Reliable Model for GaN HEMTs on Si and SiC," in the *IEEE Wireless and Microwave Technology Conference*, Cocoa Beach, Florida, USA, April 2015, pp. 1-5, (DOI: 10.1109/WAMICON.2015.7120400).
20. Riadh Essaadali, **A. Jarndal**, Ammar Kouki and F. M. Ghannouchi, "Modeling of Extrinsic Parasitic Elements of Si Based GaN HEMTs Using Two Step De-Embedding Structures," in the *IEEE Wireless and Microwave Technology Conference*, Cocoa Beach, Florida, USA, April 2015, pp. 1-4, (DOI: 10.1109/WAMICON.2015.7120399).
21. **A. Jarndal**, "A Novel Genetic-Neural-Networks Modeling Approach for Self-Heating in GaN HEMTs," in the 18th International Conference on Electronics, Information and Communication, Istanbul, Turkey, January 2016, pp. 2936-2940.
22. **Anwar Jarndal** and Ahmed Elwakil, "Fraction-Order Model of GaN High Electron Mobility Transistors for Switching Applications," in the 18th International Conference on Microelectronics, Nanoelectronics and Photonics, Stockholm, Sweden, July, 2016.
23. **Anwar Jarndal**, "Hybrid Extraction Method Based on Pinch-off S-parameters for Mm-Wave Modeling of GaN HEMTs," in the IEEE 59th International Midwest Symposium on Circuits and Systems, October 2016, Abu Dhabi, UAE.
24. Ahmed Salhin and **Anwar Jarndal**, "Reliable Particle-Swarm-Optimization Based Parameter Extraction Method Applied to GaN HEMTs," in the IEEE Mediterranean Microwave Symposium, Abu Dhabi, UAE, November 2016.
25. Dalal Abdulla, Shahrazad Abdulla; Rameesa Manaf, **Anwar Jarndal**, "Design and implementation of a sign-to-speech/text system for deaf and dumb people," *Proceeding of IEEE 5th International Conference on Electronic Devices, Systems and Applications*, Ras al-Khaimah, UAE, December 2016. (DOI: 10.1109/ICEDSA.2016.7818467).
26. Ahmed R. Babikir and **Anwar Jarndal**, "Design and implementation of a multi-purpose wireless charger," *Proceeding of IEEE 5th International Conference on Electronic Devices, Systems and Applications*, Ras al-Khaimah, UAE, December 2016. (DOI: 10.1109/ICEDSA.2016.7818527).
27. Amer Bassal and **Anwar Jarndal**, "Design of a GaN Low Noise Amplifier for WiMax Applications," in the *IEEE Mediterranean Microwave Symposium*, Abu Dhabi, UAE, November 2016.
28. **Anwar Jarndal** and Sadeque Hamdan, "Forecasting of Peak Electricity Demand Using ANN-GA and ANN-PSO Approaches" *IEEE 7th International Conference on Modeling, Simulation, and Applied Optimization*, Sharjah, UAE, April 2017, pp. 1-5 (DOI: 10.1109/ICMSAO.2017.7934842).

29. Sadeque Hamdan and **Anwar Jarndal**, "A Two Stage Green Supplier Selection and Order Allocation Using AHP and Multi-Objective Genetic Algorithm Optimization," *IEEE 7th International Conference on Modeling, Simulation, and Applied Optimization*, Sharjah, UAE, April 2017, pp. 1-6 (DOI: 10.1109/ICMSAO.2017.7934843).
30. Naser Nawayseh, **Anwar Jarndal** and Sadeque Hamdan, "Optimizing the Parameters of a Biodynamic Responses to Vibration Model using Particle Swarm and Genetic Algorithms," *IEEE 7th International Conference on Modeling, Simulation, and Applied Optimization*, Sharjah, UAE, April 2017, pp. 1-6 (DOI: 10.1109/ICMSAO.2017.7934851).
31. **Anwar Jarndal**, "Neurogenetic Small-Signal Modeling Approaches for Microwave Active Devices," *IEEE International Conference on Electrical and Computing Technologies and Applications*, Ras al-Khaimah, UAE, December 2017.
32. **Anwar Jarndal** and Ahmed Al-Maflehi, "On Design and Implementation of a Sign-to-Speech/Text System," the 2nd IEEE International Conference on Electrical, Electronics, Communication, Computer Technologies & Optimization Techniques, Bangalore, India, December 2017.
33. **Anwar Jarndal** and Sadeque Hamdan, "Global-Optimization of Neural Network-Based Electro-Thermal Model for GaN Transistors," *IEEE International Conference on Electrical and Computing Technologies and Applications*, Ras al-Khaimah, UAE, December 2017.
34. Sadeque Hamdan, Shaikha Binkhatim, **Anwar Jarndal** and Imad Alsyouf, "On the performance of artificial neural network with sine-cosine algorithm in forecasting electricity load demand," *IEEE International Conference on Electrical and Computing Technologies and Applications*, Ras al-Khaimah, UAE, December 2017.
35. Ahmed S. Hussein and **Anwar Jarndal**, "On hybrid model parameter extraction of GaN HEMTs based on GA, PSO, and ABC optimization," *IEEE International Conference on Electrical and Computing Technologies and Applications*, Ras al-Khaimah, UAE, December 2017.
36. Ahmed S. Hussein and **Anwar Jarndal**, "An improved reliable PSO based parameter extraction method applied to GaN HEMTs for Mm-Wave applications," *IEEE International Conference on Electrical and Computing Technologies and Applications*, Ras al-Khaimah, UAE, December 2017.
37. **Anwar Jarndal** and Amer Bassal, "On designing of a broadband GaN low-noise amplifier for WiMax applications," *IEEE International Conference on Electrical and Computing Technologies and Applications*, Ras al-Khaimah, UAE, December 2017.
38. **Anwar Jarndal** and Amer Bassal, "A Broadband Hybrid GaN Cascode Low Noise Amplifier for WiMax Applications," *3rd IEEE Int. Conference on Microwave and Photonics*, Dhanbad, India, February 2018.
39. Khalid K. Ali and **Anwar H. Jarndal**, "Remote-Monitoring and Wireless-Powering System for Pacemaker Patients," *1st IEEE Advances in Engineering Technology & Sciences Multi-Conferences (ASET 2018)*, Sharjah, UAE, March 2018.
40. **Anwar H. Jarndal**, Ahmed S. Hussein, Giovanni Crupi and Alina Caddemi, "Reliable PSO Based Noise Modeling Approach Applied to GaN HEMTs," in the *IEEE International Workshop On Integrated Nonlinear Microwave and Millimetre-wave Circuits*, Brive La Gaillarde, France, July 2018.
41. Xuekun Du, Sagar K. Dhar, **Anwar Jarndal**, Craig Storey, Mohamed Helaoui, Simon Wingarz, Chang Jiang You, Jingye Cai, Fadhel M. Ghannouchi, "Reliable Parameter Extraction of Asymmetric GaN-based

Heterojunction Field Effect Transistors,” in the Proc. Of *IEEE 48th European Microwave Conference*, Madrid, Spain, September 2018.

42. **Anwar H. Jarndal**, “Reliable Propagation Model for 5G Systems in Urban Environments,” in the IEEE Int. Conference on Advanced Computation and Telecommunication (ICACAT 2018), Bhopal, India, December 2018.
43. **Anwar H. Jarndal** and Teodora Petrovic, “GaN-Based Oscillators for Wireless Power Transfer Applications,” in the IEEE Int. Conference on Advanced Computation and Telecommunication (ICACAT 2018), Bhopal, India, December 2018.
44. **Anwar Jarndal** and Mohamad B. Al Sabbagh, “On Modeling of Substrate/Buffer Loading in GaN HEMT Using Grey-Wolf Optimization Technique,” in the IEEE Int. Conference on Modeling, Simulation and Applied Optimization (ICMSAO’2019), Bahrain, April 2019.
45. **Anwar Jarndal** and Sadeque Hamdan and Maamar Bettayeb, “On Modeling of Substrate/Buffer Loading in GaN HEMT Using Grey-Wolf Optimization Technique,” in the IEEE Int. Conference on Modeling, Simulation and Applied Optimization (ICMSAO’2019), Bahrain, April 2019.
46. Muhammad Awais Ali, Ahmed Bingamil, **Anwar Jarndal** and Imad Alsyouf, “The Influence of Handling Imbalance Classes on the Classification of Mechanical Faults Using Neural Networks,” in the IEEE Int. Conference on Modeling, Simulation and Applied Optimization (ICMSAO’2019), Bahrain, April 2019.
47. Mohamad Baziyad, **Anwar Jarndal** and Maamar Bettayeb, “A Model Order Reduction Technique Based on Balanced Truncation Method and Artificial Neural Networks,” in the IEEE Int. Conference on Modeling, Simulation and Applied Optimization (ICMSAO’2019), Bahrain, April 2019.
48. Anwar Jarndal, “GaN HEMT Electrothermal Modeling Using Feedback Neural Networks Techniques,” in the IEEE International Conference on Electrical and Computing Technologies and Applications, Ras al-Khaimah, UAE, November 2019.
49. Amer Bassal, Azizulrahman Shafiqurrahman and Anwar Jarndal, “An Armstrong GaN-Based Oscillator for Wireless Power Transfer Applications,” in the IEEE International Conference on Electrical and Computing Technologies and Applications, Ras al-Khaimah, UAE, November 2019.
50. Anwar Jarndal, Sadeque Hamdan, Sanaa Muhaureq and Maamar Bettayeb, “Neural Networks Modeling Based on Recent Global Optimization Techniques,” accepted to be presented in the International Conference on Modelling, Simulation & Intelligent Computing, Dubai, UAE, January 2020.
51. Muhammad Awais Ali, Huda A. Alzaabi, Aasha S. Alnuaimi and Anwar Jarndal, “Smart Healthcare Device for Cardiac Patients,” in the IEEE Advances in Engineering Technology & Sciences Multi-Conferences (ASET 2018), Dubai, UAE, March 2020.
52. Bodoor W. Alabdullah, Hind R. Alowais, Sara J. D'yab, Maha S. Diab and **Anwar Jarndal**, “Health Care Device for Diabetic Patients,” in the IEEE Advances in Engineering Technology & Sciences Multi-Conferences (ASET 2018), Dubai, UAE, March 2020.
53. Arivazhagan L, **Anwar Jarndal**, Subhash Chander, Godfrey D, Raj Kumar J S, S Bhagyalakshmi, Pavan Kumar Reddy, D. Nirmal, “Self-Heating Analysis of GaN-HEMT for Various Ambient Temperature and Substrate Thickness,” in the 2020 5th International Conference on Devices, Circuits and Systems (ICDCS), Coimbatore, India, March 2020.

Journals

1. M. S. Al Salameh and **A. Jarndal**, "Impact of Buildings on the Performance of MEO Satellite Mobile Communication Systems for Low Bit Rate Applications," *IEE Proceeding Microwave Antenna Propagation*, vol. 151, no. 2, pp 161-166, April 2004.
2. **A. Jarndal** and G. Kompa, "A New Small-Signal Modeling Approach Applied to GaN Devices," *IEEE Transactions on Microwave Theory Techniques*, vol. 53, no. 11, pp. 3440-3448, November 2005.
3. **A. Jarndal** and G. Kompa, "An Accurate Small-Signal Model for AlGa_N-Ga_N HEMT Suitable for Scalable Large-Signal Model Construction," *IEEE Microwave Wireless Components Letter*, vol. 16, no. 6, pp. 333-335, June 2006.
4. E. R. Srinidhi, A. Ahmed, **A. Jarndal**, and G. Kompa, "A New Method for Identification and Minimization of Distortion Sources in Ga_N HEMT Devices Based on Volterra Series Analysis," *IEEE Electron Device Letters*, vol. 28, no. 5, pp. 343-345, May 2007.
5. **A. Jarndal** and G. Kompa, "Large-Signal Model for AlGa_N/Ga_N HEMT Accurately Predicts Trapping and Self-Heating Induced Dispersion and Intermodulation Distortion," *IEEE Transaction on Electron Devices*, vol. 54, no. 11, pp. 2830-2836, November 2007.
6. **A. Jarndal**, P. Aflaki, L. Degachi, A. Birafane, A. Kouki, R. Negra and F. M. Ghannouchi, "Large-Signal Model for AlGa_N/Ga_N HEMTs Suitable for RF Switching-Mode Power Amplifiers Design," *International Journal of Solid State Electronics(Elsevier)*, vol. 54, no. 7, pp. 696-700, July 2010.
7. **A. Jarndal**, Pouya Aflaki, Renato Negra, Ammar Kouki, and Fadhel M. Ghannouchi, "Large-Signal Modeling Methodology for Ga_N HEMTs for RF Switching-Mode Power Amplifiers Design," *International Journal of RF and Microwave Computer-Aided Engineering*, vol.21, no. 1, pp. 45-50, November 2010.
8. **A. Jarndal**, A. Z. Markos, and G. Kompa, "Improved Modeling of Ga_N HEMT on Si Substrate for Design of RF Power Amplifiers," *IEEE Transactions on Microwave Theory and Techniques*, vol. 59, no. 3, pp. 644 – 651, March 2011.
9. **A. Jarndal**, M. S. Al Salameh, A. Alsaqaf, Y. Hulba, "Wideband Modeling of Land-Mobile-Satellite Channel in Built-Up Environment," *Journal of Electromagnetic Analysis and Applications*, no. 4, pp. 101 – 107 (doi:10.4236/jemaa.2012.43013), March 2012.
10. **A. Jarndal**, "Gallium Nitride-Based RF Power Amplifiers for Future Wireless Communication Systems," *IFRSA International Journal of Electronics Circuits and Systems*, vol. 1, no. 2, pp. 161-166, July 2012.
11. A. Alsagaf, Y. Holba, **A. Jarndal**, G. Salman, "Hybrid Evolutionary Algorithm for Optimal Planning of Hybrid Wireless Optical Broadband Access Network," *International Journal of Electronics and Communication Engineering & Technology (IJECET)*, ISSN0976–6464(Print), ISSN 0976–6472(Online) vol. 3, no. 3, pp. 122-138, December 2012.
12. **A. Jarndal**, "Genetic-Algorithm Based Neural-Network Modeling Approach Applied to AlGa_N/Ga_N Devices," *International Journal of RF and Microwave Computer Aided Engineering*, vol. 23, no. 2, pp. 149-156, March 2013.
13. **A. Jarndal**, "AlGa_N/Ga_N HEMTs on SiC and Si Substrates: A Review from the Small-Signal-Modeling's Perspective," *International Journal of RF and Microwave Computer Aided Engineering*, vol. 24, no. 3, pp. 389–400, May 2014.

14. **A. Jarndal**, Riadh Essaadali, and Ammar Kouki, "A Reliable Parasitic Extraction Method Applied to AlGaN/GaN HEMTs," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, vol. 35, no. 2, pp. 211 - 219, February 2016. (DOI: 10.1109/TCAD.2015.2460461).
15. **A. Jarndal** and Ammar Kouki, "Efficient Modeling of GaN HEMTs for Linear and Non-linear Circuits Design," *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, September 2015 (DOI: 10.1002/jnm.2100).
16. **A. Jarndal**, "A Genetic-Neural-Network Modeling Approach for Self-Heating in GaN High Electron Mobility Transistors," *International Journal of Electrical, Computer, Energetic, Electronic and Communication Engineering*, vol. 10, no. 1, pp. 106 – 110, February 2016.
17. **A. Jarndal**, "Smart Home System for Energy Saving using Genetic-Fuzzy-Neural Networks Approach," *International Journal of Sustainable Water and Environmental Systems*, vol. 8, no. 1, pp. 27-31, 2016.
18. **A. Jarndal** and Ahmed Elwakil, "Fraction-Order Model of GaN High Electron Mobility Transistors for Switching Applications," *International Journal of Electrical, Computer, Energetic, Electronic and Communication Engineering*, vol. 10, no. 7, pp. 706 – 710, 2016.
19. **A. Jarndal** and G. Kompa, "A Simple, Direct and Reliable Extraction Method Applied to GaN Devices," *International Journal of Electronics*, August 2016, pp. 1-12 (DOI:10.1080/00207217.2016.1218058).
20. **A. Jarndal** and F. M. Ghannouchi, "Improved Modeling of GaN HEMTs for Predicting Thermal and Trapping-Induced-Kink Effects," *Journal of Solid State Electronics(Elsevier)*, vol. 123, June 2016, Pages 19–25 (DOI: 10.1016/j.sse.2016.05.015).
21. **Anwar Jarndal** and Ammar Kouki, "GaN High Electron Mobility Transistors: A Review from Parasitic Elements Extraction's Perspective," *Journal of Engineering (IET)*, June 2016, pp. 1-8 (DOI: 10.1049/joe.2016.0161).
22. Riadh Essaadali, **A. Jarndal**, Ammar Kouki and F. M. Ghannouchi, "A New GaN HEMT Equivalent Circuit Modeling Technique Based on X-Parameters," *IEEE Transactions on Microwave Theory and Techniques*, August 2016, pp. 1-20 (DOI: 10.1049/joe.2016.0161).
23. Ahmed Hussein and **Anwar Jarndal**, "Particle-Swarm Based Small-Signal Modeling Applied to GaN Devices," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, vol. 37, no. 9, September 2018, pp. 1816 - 1824.
24. **Anwar Jarndal** and Amer Bassal, "A Particle-Swarm-Neural-Networks Electro-Thermal Modeling Approaches Applied to GaN HEMTs," submitted to *Journal of Microelectronics*.
25. **Anwar Jarndal** and Khawla Alnajjar, "MM-wave wideband propagation model for wireless communications in built-up environments, *Physical Communication*, March 2018. <https://doi.org/10.1016/j.phycom.2018.03>.
26. **Anwar Jarndal** and Amer Bassal, "A broadband hybrid GaN cascode low noise amplifier for WiMax applications," *International Journal of RF and Microwave Computer-Aided Engineering*, 2018; e21456. <https://doi.org/10.1002/mmce.21456>.
27. **Anwar Jarndal** and Ahmed Hussein, "Hybrid small-signal model parameter extraction of GaN HEMTs on Si and SiC substrates based on global optimization," *International Journal of RF and Microwave Computer-Aided Engineering*, October 2018.

28. Riadh Essaadali, **Anwar Jarndal**, Ammar B. Kouki and Fadhel M. Ghannouchi, "On the Accurate Voltage and Current Analytical Relationship to X-Parameters of a Nonlinear Two-Port Network," *IEEE Transactions on Microwave Theory and Techniques*, September 2018, (DOI:10.1109/TMTT.2018.2863231).
29. Riadh Essaadali, **Anwar Jarndal**, Ammar B. Kouki and Fadhel M. Ghannouchi, "Conversion Rules Between X-Parameters and Linearized Two-Port Network Parameters for Large-Signal Operating Conditions," *IEEE Transactions on Microwave Theory and Techniques*, 2018.
30. **Anwar Jarndal** and Amer Bassal, "A Compact GaN Class AB Armstrong Oscillator for Resonant Wireless Power Transfer," *IET Circuits, Devices & Systems*, October 2018.
31. **Anwar Jarndal**, Ahmed Hussein, Giovanni Crupi and Alina Caddemi, "Reliable noise modeling of GaN HEMTs for designing low-noise amplifiers," *Int. J Numer Model.* March 2019; e2585. <https://doi.org/10.1002/jnm.2585>.
32. **Anwar Jarndal**, "Neural network electrothermal modeling approach for microwave active devices," *Int. J RF Microw Comput Aided Eng.*, March 2019, e21764. <https://doi.org/10.1002/mmce.21764>.
33. **Anwar Jarndal**, "On Neural Networks Based Electrothermal Modeling of GaN Devices," *IEEE Access*, vol. 7, July 2019, pp. 94205-94214. (DOI: 10.1109/ACCESS.2019.2928392).
34. **A. H. Jarndal** and S. Muhaureq, "A particle swarm neural networks electrothermal modeling approach applied to GaN HEMTs", *J Comput Electron*, August 2019, <https://doi.org/10.1007/s10825-019-01397-1>
35. **Anwar Jarndal**, "On modeling of substrate loading in GaN HEMT using grey wolf algorithm," *J Comput Electron* (2020). <https://doi.org/10.1007/s10825-020-01464-y>.
36. **Anwar Jarndal**, Arivazhagan L and D. Nirmal, "On the Performance of GaN on Silicon, Silicon-Carbide and Diamond Substrates," *International Journal of RF and Microwave Computer-Aided Engineering*, February 2020, (DOI: 10.1002/mmce.22196).
37. Xuekun Du,,Mohamed Helaoui, **Anwar Jarndal**,,Taijun Liu,,Biao Hu,,Xin Hu,,Fadhel M. Ghannouchi, "ANN-Based Large-Signal Model of AlGaIn/GaN HEMTs With Accurate Buffer-Related Trapping Effects Characterization," *IEEE Transactions on Microwave Theory and Techniques*, May 2020 (DOI: 10.1109/TMTT.2020.2990171).
38. **Anwar Jarndal**, Arivazhagan L and D. Nirmal, "Effect of Field-Plate Structure on Buffer Trapping in AlGaIn/GaN HEMTs," submitted to the *Journal of Computational Electronics*.
39. **Anwar Jarndal**, Saddam Husain, Mohammad Hashmi, "On Temperature-Dependent Small-Signal Modeling of GaN HEMTs Using Artificial Neural Networks and Support Vector Regression," submitted to the *IET Microwaves, Antennas & Propagation Journal*.
40. **Anwar Jarndal**, Saddam Husain, Mohammad Hashmi, "An Extremely Efficient Temperature-Dependent GA Augmented ANN based Small-Signal Modeling Technique for GaN HEMTs," submitted to the *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*.
41. **Anwar Jarndal**, Xuekun Du, and Yuehang Xu, "On Modeling of GaN HEMT on Diamond Substrate," submitted to the *IET Microwaves, Antennas & Propagation Journal*.

Book Chapters

1. **Anwar Jarndal**, "Large-Signal Modeling of GaN Devices for Designing High Power Amplifiers of Next Generation Wireless Communication Systems" published in the book titled "*Mobile and Wireless Communications: Network Layer and Circuit Level Design*", In-Tech, Vukovar, Croatia, 2009 (ISBN 978-953-307-042-1).
2. **Anwar Jarndal**, "Electrothermal Modeling of GaN HEMTs" book chapter in the book titled: "Advances in Microelectronics: Reviews", IFSA Publishing, January 2018. (ISBN-13: 978-8469786338).
3. **Anwar Jarndal**, "Neural Networks Modeling Based on Recent Global Optimization Techniques" book chapter in the book titled: "Advances in Machine Learning and Computational Intelligence", Springer Nature Singapore Pte Ltd., 2020. (10.1007/978-981-15-5243-4_6).

Books

1. **Anwar Jarndal**, "Large-Signal Modeling of GaN Device for High Power Amplifier Design," Kassel University Press, Germany, 2006 (ISBN: 978-3-89958-258-1).
2. **Anwar Jarndal**, "Modeling of Land Mobile Satellite Radio Propagation Channel," Lambert Academic Publishing, Germany, 2015 (ISBN: 978-3-659-68256-8).

Research Projects

Completed Projects

1. Modeling and Characterization of GaN devices for Power Amplifier Design Considering Memory Effects (Hochleistungsmesstechnik zur Charakterisierung und Modellierung von GaN Leistungsbau-elementen und Leistungsverstärkern insbesondere unter dem Gesichtspunkt von Memory-Effekten), Project Code: 01BU385, Federal Ministry of Education and Research (BMBF), Germany, 3 years, Started on: 01/10/2004.
2. Characterizing and Modeling of GaN FETs for Optimal Linear Highly Efficient Power Amplifier Design (Modellierung von GaN FETs für einen optimalen Entwurf hocheffizienter linearer Leistungsverstärker für UMTS Anwendungen, Project Code: 01BU0610, Federal Ministry of Education and Research (BMBF), Germany, 2 years, Started on: 01/08/2006.
3. Modeling of GaN HEMTs for Switching-Mode Power Amplifier Design, Postdoctoral Project supported by École de Technologie Supérieure (ETS), Montreal, Canada, in collaboration with Calgary University, Calgary, Canada.
4. Modeling of GaN HEMTs on Si Substrate, Supported by Hodeida University in Yemen in collaboration with the University of Kassel in Germany.
5. Neural Network Modeling of GaN Devices for Designing High Power Amplifiers of Next Generation Wireless Communication Systems, A/10-11-UoN/14/ENG/IF, University of Nizwa, Oman, 2 Years.
6. **SEED Project** entitled: "Neural Network Modeling of GaN Devices for Designing High Power Amplifiers of Next Generation Wireless Communication Systems", G.R.C./S.R. 8/2013, University of Sharjah, Sharjah, 2 Years, Started on: 14/01/2014 (**Principle Investigator**).

7. **Competitive Project** entitled: “GaN Switching-Mode Power Amplifier Design for High Frequency Applications”, V.C./G.R.C. /S.R. 267/2015, University of Sharjah, Sharjah, 2 Years, Started on: 01/09/2015. **(Principle Investigator)**.

In-Progress Projects

1. **Competitive Project** entitled: “Designing Power and Low-Noise Amplifiers Using GaN Technology for Space and Terrestrial Wireless Communications”, V.C.R.G.R. /R. 1265/2017, University of Sharjah, Sharjah, 2 Years, Started on: 11/2017 **(Principle Investigator)**.
2. Advanced Large-Signal Modeling Techniques for Gallium Nitride Power Transistor, Collaborative Research Work with École de Technologie Supérieure (ETS), Montreal, Canada, Started on: January 2014.
3. A member of "Sustainable Engineering Asset Management (SEAM)" **Group Research**.
4. A member of "Mixed-Analog-Digital Smart Electronic Circuits and Systems" **Group Research**.

Senior Design Projects Supervision

1. Design of Linear GaN RF Power Amplifier for Wireless Communications. **(Completed)**
2. ANN based smart home system for energy savings: design and implementation. **(Completed)**
3. Design of Power Efficient GaN RF Power Amplifier for Wireless Communications. **(Completed)**
4. Controlling Gloves for Robotic Hands: Design and Implementation. **(Completed)**
5. Design of WiMAX Transmitter Using GaN RF Power Amplifier. **(Completed)**
6. Design and Implementation of a Multipurpose Wireless Charger. **(Completed)**
7. Design and implementation of Smart Gloves for Deaf and Dumb People. **(Completed)**
8. Design and Fabrication of GaN Low Noise Amplifier for High Frequency Applications. **(Completed)**
9. Design and Implementation of a Wireless Gloves Controlled Robot. **(Completed)**
10. Smart Parking System for Disabled People: Design and Implementation. **(Completed)**
11. Wireless-Powering and Remote- Monitoring System for Pacemaker Patients: Design and Implementation. **(Completed)**
12. Design and Implementation of VLC Based Data Communication System. **(Completed)**
13. Design and Implementation of High Efficiency WPT System for Portable Devices. **(Completed)**
14. Design and Implementation of IoT Health Care Device. **(Completed)**
15. Artificial Pancreas: Design and Implementation. **(Completed)**
16. Design and Implementation of Robotic for Military applications. **(Completed)**
17. Smart Health Care Device for Diabetic Patients. **(in progress)**

Master Thesis Supervision

1. Hybrid PSO-Direct Based Small-Signal Modeling of GaN HEMT for Millimeter-Wave Application. **(Completed)**

Research Activates

1. A Member of the Technical Program Committee of the IEEE International Conferences on Electrical and Computing Technologies and Applications, ICECTA'2018 and ICECTA'2019 AURAK, UAE.

2. Editorial Board Member of International Journal of RF and Microwave Computer-Aided Engineering.
3. Reviewer for grant applications of Natural Sciences and Engineering Research Council of Canada.
4. Reviewer for the IEEE Access Journal.
5. Reviewer for the IEEE Access Journal.
6. Reviewer for the IEEE Transaction on Electron devices.
7. Reviewer for the IEEE Transaction on Power Electronics.
8. Reviewer for the IEEE Transaction on Microwave Theory and Techniques.
9. Reviewer for the IEEE Transaction on Industrial Electronics.
10. Reviewer for the IEEE Transaction on Circuits and Systems I: Regular Papers
11. Reviewer for the IEEE Microwave Wireless Components Letter.
12. Reviewer for International Journal of Circuit Theory and Applications.
13. Reviewer for AEÜ - International Journal of Electronics and Communications (Elsevier).
14. Reviewer of Microelectronics Journal (Elsevier).
15. Reviewer for the International Journal of RF and Microwave Computer-Aided Engineering.
16. Reviewer of Journal of Electromagnetic Waves and Applications.
17. Reviewer of the International Journal of Electronics Letters.
18. Reviewer for the International Journal of Numerical Modelling: Electronic Networks, Devices and Fields
19. Reviewer for the IET Microwaves, Antennas & Propagation Journal
20. Reviewer for the IET Circuits, devices and Systems.

University and Community Services

1. Presenting a college seminar entitled “Gallium Nitride RF Power Amplifiers for Future Wireless Communication Systems” on November 6, 2013.
2. Presenting a college seminar entitled “Direct Characterization of Nonlinear Circuits and Devices” on November 2, 2014.
3. Attending a workshop on Multi-physics & Engineering Applications, organized by the applied physics department.
4. Cooperation with Ministry of Health on the issues of “Non-ionizing EMF Radiation in UAE”, May 2014.
5. Representative of college Engineering during though the University open day on February 2, 2015.
6. Member of university committee to develop a program in the field of space sciences and astronomy, April 2015.
7. Chair of department committee for hiring academic and administrative assistant, February 2015.
8. Member of department committee for hiring administrative assistant, January 2015.
9. Member of department committee for hiring academic staff, January 2015.
10. Chair Continues Program Improvement (CPI) and Courses Files Committee.
11. Member of the Department Local Accreditation Committee.
12. Member of the Department ABET Accreditation Committee.
13. Acting chair of the Electrical and Computer Engineering Department, University of Sharjah, Summer 2016.
14. Acting dean of College of Engineering, University of Sharjah, Summer 2016.
15. Judge for the Think Science Competition, UAE, 2019.
16. Electrical Eng. Department Graduate studies coordinator 2019-2020.
17. Acting dean of College of Engineering, University of Sharjah, Summer 2018.