

## Publications

### *Book Chapter*

- [BC1] N. K. Nikolova, M. Ravan, and R. K. Amineh, *Substrate Integrated Antennas on Silicon*, Chapter VI, in J. M. Deen and G. Boeck, eds., *Silicon-Based Millimetre-wave Components and Systems*, ADV. IMAGING & ELECTRON PHYSICS, V174.

### *Journal Papers*

- [JP1] R. K. Amineh and G. V. Eleftheriades, “2D and 3D sub-diffraction source imaging with a superoscillatory filter,” *Optics Express*, vol. 21, no. 7, pp. 8142–8157, 2013, <http://dx.doi.org/10.1364/OE.21.008142>.
- [JP2] R. K. Amineh, J. McCombe, and N. K. Nikolova, “Microwave holographic imaging using the antenna phaseless radiation pattern,” *IEEE Antennas Wireless Propag. Lett.*, vol. 11, 2012.
- [JP3] Y. Zhang, S. Tu, R. K. Amineh, and N. K. Nikolova, “Resolution and robustness to noise of the sensitivity-based method for microwave imaging with data acquired on cylindrical surfaces,” *Inverse Problems*, vol. 28, no. 11, 115006, 2012.
- [JP4] M. K. Meshram, R. K. Amineh, A. T. Pimpale, and N. K. Nikolova, “A novel quad-band diversity antenna for LTE and Wi-Fi applications with high isolation,” *IEEE Trans. Antennas Propag.*, vol. 60, no. 9, pp. 4360–4371, 2012.
- [JP5] R. K. Amineh, A. Khalatpour, and N. K. Nikolova, “Three-dimensional microwave holographic imaging using co- and cross-polarized data,” *IEEE Trans. Antennas Propag.*, vol. 60, no. 7, pp. 3526–3531, 2012.
- [JP6] R. K. Amineh, A. Khalatpour, H. Xu, Y. Baskharoun, and N. Nikolova, “Three-dimensional near-field microwave holography for tissue imaging,” *International Journal of*

*Biomedical Imaging, Special Issue on Microwave Imaging and Emerging Applications*, vol. 2012, Article ID 291494, 2012 (invited) <http://www.hindawi.com/journals/ijbi/2012/291494/>.

- [JP7] R. K. Amineh, M. Ravan, A. Khalatpour, and N. K. Nikolova, "Three-dimensional near-field microwave holography using reflected and transmitted signals," *IEEE Trans. Antennas Propag.*, vol. 59, no. 12, pp. 4777–4789, 2011. Errata to "Three-dimensional near-field microwave holography using reflected and transmitted signals," *IEEE Trans. Antennas Propag.*, vol. 60, no. 1, pp. 425, 2012.
- [JP8] A. Khalatpour, R. K. Amineh, Q. S. Cheng, M. H. Bakr, N. K. Nikolova, and J. W. Bandler, "Accelerating space mapping optimization with adjoint sensitivities," *IEEE Microwave and Wireless Comp. Lett.*, vol. 21, no. 6, pp. 280–282, 2011.
- [JP9] R. K. Amineh, M. Ravan, A. Trehan, and N. K. Nikolova, "Near-field microwave imaging based on aperture raster scanning with TEM horn antennas," *IEEE Trans. Antennas Propag.*, vol. 59, no. 3, pp. 928–940, 2011.
- [JP10] S. M. Ali and R. K. Amineh, "User effect analysis on polarization in multi-input multi-output systems," *IET Microwave, Antennas & Propag.*, vol. 4, no. 12, pp. 2265–2272, 2010.
- [JP11] M. Ravan, R. K. Amineh, and N. K. Nikolova, "Two-dimensional near-field microwave holography," *Inverse Problems*, vol. 26, 2010, 055011 (**selected among "Highlights Collection of 2010"**).
- [JP12] M. Ravan, R. K. Amineh, S. Koziel, N. K. Nikolova, and J. P. Reilly, "Sizing of 3-D arbitrary defects using magnetic flux leakage measurements," *IEEE Trans. Magn.*, vol. 46, no. 4, pp. 1024–1033, 2010.
- [JP13] M. Ravan, R. K. Amineh, S. Koziel, N. K. Nikolova, and J. P. Reilly, "Sizing of multiple cracks using magnetic flux leakage measurements," *IET Science, Measurement & Tech.*, vol. 4, no. 1, pp. 1–11, 2010.

- [JP14] M. Ravan, R. K. Amineh, M. Karrari, W. Rosehart, and O. P. Malik, "Synchronous machine model identification using continuous wavelet NARX network," *Proc. IMechE, Part I: J. Systems and Control Engineering*, vol. 223, no. I4, pp. 467–477, 2009.
- [JP15] R. K. Amineh, A. Trehan, and N. K. Nikolova, "TEM horn antenna for ultra-wide band microwave breast imaging," *Progress In Electromagnetics Research B (PIER B)*, vol. 13, pp. 59–74, 2009  
<http://www.jpier.org/PIERB/pierb13/04.08122213.pdf>.
- [JP16] R. K. Amineh, M. Ravan, S. H. H. Sadeghi, and R. Moini, "Removal of probe lift-off effects on crack detection and sizing in metals by the AC field measurement technique," *IEEE Trans. Magn.*, vol. 44, no. 8, pp. 2066–2073, 2008.
- [JP17] R. K. Amineh, S. Koziel, N. K. Nikolova, J. W. Bandler, and J. P. Reilly, "A space mapping methodology for defect characterization from magnetic flux leakage measurements," *IEEE Trans. Magn.*, vol. 44, no. 8, pp. 2058–2065, 2008.
- [JP18] R. K. Amineh, N. K. Nikolova, J. P. Reilly, and J. R. Hare, "Characterization of surface breaking cracks using one tangential component of magnetic leakage field," *IEEE Trans. Magn.*, vol. 44, no. 4, pp. 516–524, 2008 (**featured on the front page**).
- [JP19] R. K. Amineh, M. Ravan, S. H. H. Sadeghi, and R. Moini, "Using AC field measurement data at an arbitrary lift-off distance to size long surface-breaking cracks in ferrous metals," *NDT & E Int.*, vol. 41, no. 3, pp. 169–177, 2008.

### ***Conference Papers***

- [CP1] R. K. Amineh and G. V. Eleftheriades, "Imaging beyond the diffraction limit by employing a super-oscillatory filter," *IEEE Int. Symp. on Antennas and Propag. and USNC/URSI National Radio Science Meeting (AP-S/URSI)*, USA, 2013, accepted.

- [CP2] K. Moussakhani, R. K. Amineh, and N. K. Nikolova, "Evaluating the efficiency of antennas used as sensors in microwave tissue imaging," *IEEE Int. Symp. on Antennas and Propag. and USNC/URSI National Radio Science Meeting (AP-S/URSI)*, USA, 2013, accepted.
- [CP3] R. K. Amineh, M. Ravan, J. McCombe, and N. K. Nikolova, "Range resolution in microwave imaging with forward-scattered waves only," *IEEE MTT Int. Microwave Symp. (IMS)*, USA, 2013, accepted.
- [CP4] Y. Zhang, S. Tu, R. K. Amineh, N. K. Nikolova, "Sensitivity-based microwave imaging with raster scanning," *IEEE MTT Int. Microwave Symp. (IMS)*, Canada, 2012.
- [CP5] R. K. Amineh, A. Khalatpour, and N. K. Nikolova, "Microwave holography using transmission data only," *Advanced Electromagnetics Symposium (AES)*, France, 2012.
- [CP6] R. K. Amineh, M. Ravan, A. Khalatpour, and N. K. Nikolova, "Three-dimensional near-field microwave holography," *Asia-Pacific Microwave Conference (APMC)*, Australia, 2011.
- [CP7] A. Khalatpour, R. K. Amineh, Q. S. Cheng, J. W. Bandler, and N. K. Nikolova, "Adjoint-accelerated design framework for novel materials in microwave applications," *European Microwave Week (EuMW)*, UK, 2011.
- [CP8] K. Moussakhani, R. K. Amineh, and N. K. Nikolova, "High efficiency TEM horn antenna for ultra-wide band microwave tissue imaging," *IEEE Int. Symp. on Antennas and Propag. and USNC/URSI National Radio Science Meeting (AP-S/URSI)*, USA, 2011.
- [CP9] R. K. Amineh, K. Moussakhani, H. H. Xu, M. S. Dadash, Y. Baskharoun, L. Liu, and N. K. Nikolova, "Practical issues in microwave raster scanning," *European Conference on Antennas and Propagation (EuCAP)*, Italy, 2011.
- [CP10] A. Khalatpour, R. K. Amineh, H. Xu, Y. Baskharoun, and N. K. Nikolova, "Image quality enhancement in the microwave raster

scanning method,” *IEEE MTT Int. Microwave Symp. (IMS)*, USA, 2011.

- [CP11] R. K. Amineh, M. Ravan, A. Trehan, and N. K. Nikolova, “Microwave imaging for breast cancer diagnosis based on planar aperture scanning,” *IEEE Int. Symp. on Antennas and Propag. and USNC/URSI National Radio Science Meeting (AP-S/URSI)*, Canada, 2010.
- [CP12] R. K. Amineh, A. Trehan, M. Ravan, and N. K. Nikolova, “Planar aperture scanning for microwave imaging of the breast: advances and challenges,” *IEEE Int. Symp. on Antennas and Propag. and USNC/URSI National Radio Science Meeting (AP-S/URSI)*, Canada, 2010.
- [CP13] A. Trehan, L. Liu, R. K. Amineh, and N. K. Nikolova, “Systematic fidelity assessment of antennas for near-field microwave imaging,” *IEEE Int. Symp. on Antennas and Propag. and USNC/URSI National Radio Science Meeting (AP-S/URSI)*, Canada, 2010.
- [CP14] M. Ravan, R. K. Amineh, and N. K. Nikolova, “Microwave holography for near-field imaging,” *IEEE Int. Symp. on Antennas and Propag. and USNC/URSI National Radio Science Meeting (AP-S/URSI)*, Canada, 2010.
- [CP15] S. M. Ali and R. K. Amineh, “On MIMO polarization in the user’s presence,” *IEEE Int. Symp. on Antennas and Propag. and USNC/URSI National Radio Science Meeting (AP-S/URSI)*, Canada, 2010.
- [CP16] R. K. Amineh and N. K. Nikolova, “Design, fabrication, and characterization of ultra-wide band TEM horn for microwave imaging,” *14<sup>th</sup> Int. Symp. on Antenna Tech. and Applied Electromagnetics and the Canadian Radio Sciences Meeting (ANTEM/AMEREM)*, Canada, 2010.
- [CP17] M. Ravan, R. K. Amineh, and N. K. Nikolova, “Near-field microwave holographic imaging: target localization and resolution study,” *Int. Union of Radio Science Commission B and Int. Symp. on Electromagnetic Theory (URSI/EMTS)*, Germany, 2010.

- [CP18] M. Ravan, R. K. Amineh, S. Koziel, N. K. Nikolova, and J. P. Reilly, "Estimation of multiple surface cracks parameters using MFL testing," *Int. Union of Radio Science Commission B and Int. Symp. on Electromagnetic Theory (URSI/EMTS)*, Germany, 2010.
- [CP19] R. K. Amineh, M. Ravan, A. Trehan, and N. K. Nikolova, "Near-field microwave imaging based on planar aperture scanning," *IEEE MTT Int. Microwave Symp. (IMS)*, USA, 2010.
- [CP20] R. K. Amineh, A. Trehan, and N. K. Nikolova, "Ultra-wide band TEM horn antenna for microwave imaging of the breast," *IEEE Int. Symp. on Antennas and Propag. and USNC/URSI National Radio Science Meeting (AP-S/URSI)*, USA, 2009.
- [CP21] R. K. Amineh, A. Trehan, and N. K. Nikolova, "Ultra-wide band TEM horn antenna designed for microwave imaging of the breast," *13<sup>th</sup> Int. Symp. on Antenna Tech. and Applied Electromagnetics and the Canadian Radio Sciences Meeting (ANTEM/URSI)*, Canada, 2009.
- [CP22] M. Ravan, R. K. Amineh, S. Koziel, N. K. Nikolova, and J. P. Reilly, "Three-dimensional defect reconstruction from MFL signals using space mapping optimization," *13<sup>th</sup> Int. Symp. on Antenna Tech. and Applied Electromagnetics and the Canadian Radio Sciences Meeting (ANTEM/URSI)*, Canada, 2009.
- [CP23] N. K. Nikolova, D. Cronin, S. M. Pasha, R. K. Amineh, I. Smith, R. Thompson, and J. R. Hare, "Electrical resistance welded seam inspection using circumferential flux," *7<sup>th</sup> Int. Pipeline Conference (IPC)*, Canada, 2008.
- [CP24] A. Trehan, R. K. Amineh, M. S. Georgiev, and N. K. Nikolova, "Accuracy assessment of photogrammetry surface reconstruction for improving microwave imaging," *IEEE Int. Symp. on Antennas and Propag. and USNC/URSI National Radio Science Meeting (AP-S/URSI)*, USA, 2008 (**selected as "honourable mention" paper**).
- [CP25] R. K. Amineh, S. Koziel, N. K. Nikolova, J. W. Bandler, and J. P. Reilly, "A space mapping methodology for defect

characterization,” *24<sup>th</sup> Int. Review of Progress in Applied Computational Electromagnetics (ACES)*, Canada, 2008.

- [CP26] A. Trehan, R. K. Amineh, M. S. Georgiev, and N. K. Nikolova, “Photogrammetry-based surface reconstruction for improving microwave breast tumor detection,” *24<sup>th</sup> Int. Review of Progress in Applied Computational Electromagnetics (ACES)*, Canada, 2008.
- [CP27] R. K. Amineh, N. K. Nikolova, J. P. Reilly, and J. R. Hare, “Axial crack detection and sizing: the challenges and solutions to the detection and accurate sizing of axially-oriented cracks,” *20<sup>th</sup> Int. Pipeline Pigging & Integrity Management Conf.*, USA 2008.
- [CP28] R. K. Amineh and M. Ravan, “Dynamic range of SAW sensors due to the electrical constraints,” *31<sup>st</sup> IEEE Industrial Electronics Conference (IECON)*, USA, 2005.
- [CP29] R. K. Amineh, S. H. H. Sadeghi, and R. Moini, “A conjugate gradients method for estimation of long cracks depths in ferromagnetic metals using the surface magnetic field measurement data,” *2<sup>nd</sup> Int. Conf. on Electromagnetic Near-Field Characterization and Imaging (ICONIC)*, Spain, 2005.
- [CP30] R. K. Amineh and M. Ravan, “A finite difference solution of combined heat and mass transfer in a rotary dehumidifier,” *56<sup>th</sup> Annual Int. Appliance Tech. Conf. (IATC)*, USA, 2005.
- [CP31] R. K. Amineh, S. H. H. Sadeghi, and R. Moini, “An inversion method to estimate crack depth with removal of lift-off effect in SMFM technique,” *55<sup>th</sup> Annual Int. Appliance Tech. Conf. & Exhib. (IATC)*, USA, 2004.
- [CP32] R. K. Amineh, S. H. H. Sadeghi, and R. Moini, “Suppressing sensor lift-off effects on cracks signals in surface magnetic field measurement technique,” *IEEE International Conference on Industrial Technology (ICIT)*, Slovenia, 2003.
- [CP33] R. K. Amineh and K. Faez, “A piecewise linear classifier design for pattern recognition of chemical agents based on the

responses obtained from SAW sensors,” *5<sup>th</sup> Conf. on Intelligent Systems (CIS)*, Iran, 2003.

- [CP34] R. K. Amineh and A. Abdipour, “Investigation of signal and noise performance of an optical receiver including a P-I-N photodiode and distributed amplifier using a CAD oriented method,” *Iranian Conf. on Electrical Eng. (ICEE)*, Iran, 2003.

### ***Technical Reports***

- [TR1] R. K. Amineh and S. M. Ali, “User effects on the performance of handsets using IFA and PIFA antenna Designs,” *Advanced Technology Group, Research In Motion (RIM)*, Waterloo, Canada, 2009.
- [TR2] R. K. Amineh and S. M. Ali, “Study of user effects on the diversity provided by dipoles at different frequencies,” *Advanced Technology Group, Research In Motion (RIM)*, Waterloo, Canada, 2009.
- [TR3] R. K. Amineh, “Inversion solutions for surface breaking cracks in pipelines using magnetic flux leakage inspections,” *CEM-R-44*, Computational Electromagnetics Laboratory, McMaster University, Canada, 2007.
- [TR4] R. K. Amineh, “Lift-off and crack length estimation in magnetic flux leakage technique,” *CEM-R-39*, Computational Electromagnetics Laboratory, McMaster University, Canada, 2007.
- [TR5] R. K. Amineh, “A study of magnetic flux leakage signals using 3-D finite element simulations and measurements,” *CEM-R-37*, Computational Electromagnetics Laboratory, McMaster University, Canada, 2007.