

QuickWave software for All

selected 3rd Party papers

illustrating the use of QuickWave software in various applications

Biomedical applications

- [1] S. Romanenko, P.H. Siegel, V. Pikov, "Microdosimetry and physiological effects of millimetre wave irradiation in isolated neural ganglion preparation", *International Kharkov Symposium on Physics and Engineering of Microwaves, Millimeter and Submillimeter Waves 2013*, pp. 512-516, 2013.
- [2] M.G. Shapiro, M.F. Priest, P.H. Siegel, F. Bezanilla, "Thermal mechanisms of millimeter wave stimulation of excitable cells", *Biophysical Journal*, vol. 104, pp. 2622-2628, June 2013.
- [3] V.V. Komarov, "Estimation of heating rate in the near zone of interstitial microwave applicator", *IEEE Microwave and Wireless Components Letters*, vol.2, no. 9, pp. 640-642, September 2014.
- [4] S. Romanenko, P.H. Siegel, D.A. Wagnenaar, V. Pikov, "Effects of millimeter wave irradiation and equivalent thermal heating on the activity of individual neurons in the leech ganglion", *Journal of Neurophysiology*, vol. 112, pp. 2423-2431, November 2014.
- [5] N. Petrovic, M. Otterskog, P.O. Risan, "Antenna applicator design for microwave imaging of the interior of human breasts", *Journal of Physics D: Applied Physics*, vol. 47, no. 38, August 2015.
- [6] N. Petrovic, M. Otterskog, P.O. Risan, "Experiments and numerical modelling of contracting antenna applicators at a free space head model", *IEEE Conference on Antenna Measurements & Applications (CAMA) 2015*, 2015.
- [7] N. Petrovic, M. Otterskog, P.O. Risan, "Experiments and numerical modelling of contracting antenna applicators at a free space head model", *IEEE Conference on Antenna Measurements & Applications (CAMA) 2015*, 2015.
- [8] N. Petrovic, M. Otterskog, P.O. Risan, "Antenna applicator concepts using diffraction phenomena for direct visualization of brain hemorrhages", *IEEE Conference on Antenna Measurements & Applications (CAMA) 2016*, 2016.
- [9] N. Petrovic, M. Otterskog, P.O. Risan, "Breast tumour detection by two microwave antenna principles", *International Conference on Electromagnetics and Advanced Applications 2017*, pp. 1258-1262, 2017.
- [10] N. Petrovic, M. Otterskog, P.O. Risan, "Breast tumour detection with microwave applicators in open air", *IEEE Conference on Antenna Measurements & Applications (CAMA) 2017*, pp. 272-274, 2017.
- [11] D. H. Gultekin and P. H. Siegel, "Absorption of 5G Radiation in Brain Tissue as a Function of Frequency, Power and Time," *IEEE Access*, vol. 8, pp. 115593-115612, 2020, doi: 10.1109/ACCESS.2020.3002183.

Antennas including BOR antennas

- [12] E. G. Geterud, J. Yang, T. Osling, P. Bergmark, "Design and Optimisation of a compact wideband hat-fed reflector antenna for satellite communication", *IEEE Transactions on Antennas and Propagation*, vol. 61, no.1, pp. 125-133, January 2013.

- [13] Y. Yashchyshyn, K. Derzakowski, P.R. Bajurko, "The problems of Ultra Wide Band antennas design for high resolution radar application", *20th Intl. Conference on Microwaves, Radar and Wireless Communications MIKON-2014*, Gdansk, June 2014.
- [14] P. Kopyt, B. Salski, M. Olszewska-Placha, D. Janczak, M. Sloma, T. Kurkus, M. Jakubowska, W. Gwarek, "Graphene-based dipole antenna for a UHF RFID tag", *IEEE MTT-S International Microwave Symposium 2015*, Phoenix, May 2015.
- [15] N. Petrovic, M. Otterskog, P.O. Risan, "Antenna applicator design for microwave imaging of the interior of human breasts", *Journal of Physics D: Applied Physics*, vol. 47, no.38, August 2015.
- A. Motevasselian, T. Ostling, "A self-supported hat-fed reflector antenna for 60GHz frequency band", *9th European Conference on Antennas and Propagation (EuCAP) 2015*, 2015.
- [16] J. F. Johansson, M. Viberg, J. Petersson, P. Magnusson, "An all-metal K-band reflector antenna for a mechanically steerable data downlink system", *9th European Conference on Antennas and Propagation (EuCAP) 2015*, 2015.
- [17] N. Petrovic, M. Otterskog, P.O. Risan, "Experiments and numerical modelling of contracting antenna applicators at a free space head model", *IEEE Conference on Antenna Measurements & Applications (CAMA) 2015*, 2015.
- [18] P. Kopyt, B. Salski, M. Olszewska-Placha, D. Janczak, M. Sloma, T. Kurkus, M. Jakubowska, and W. Gwarek, "Graphene-based Dipole Antenna for a UHF RFID Tag", *IEEE Transactions on Antennas and Propagation*, vol. 64, no. 7, July 2016.
- [19] D.B. But, D. Coquillat, N. Dyakonova, F. Teppe, S. Ruffenach, W. Knap, P. Kopyt, "Substrate optimisation for a planar antenna of terahertz Si field effect transistor detectors", *21st International Conference on Microwave, Radar and Wireless Communication MIKON-2016*, Krakow, June 2016.
- [20] N. Petrovic, M. Otterskog, P.O. Risan, "Antenna applicator concepts using diffraction phenomena for direct visualization of brain hemorrhages", *IEEE Conference on Antenna Measurements & Applications (CAMA) 2016*, 2016.
- [21] S. Liao, P. Chen, Q. Xue, "Ka-band omnidirectional high gain stacked dual bicone antenna", *IEEE Transactions on Antennas and Propagation*, vol. 64, no.1, pp. 294-299, January 2016.
- [22] P. Kopyt, B. Salski, P. Zagrajek, D. Obrebski, J. Marczewski, "Modeling of silicon-based substrates of patch antennas operating in the sub-THz range", *IEEE Transactions on THz Science and Technology*, vol. 7, no. 4, pp. 424-432, July 2017.

Radar applications

- [23] K. Kulpa, P. Samczynski, M. Malanowski, A. Gromek, D. Gromek, W. Gwarek, B. Salski, G. Tanski, "An advanced SAR simulator of three-dimensional structures combining geometrical optics and full-wave electromagnetic methods", *IEEE Transactions on Geoscience and Remote Sensing*, vol. 52, no. 1, pp. 776-784, January 2014.
- [24] Y. Yashchyshyn, K. Derzakowski, P.R. Bajurko, "The problems of Ultra Wide Band antennas design for high resolution radar application", *20th International Conference on Microwaves, Radar and Wireless Communications MIKON-2014*, Gdansk, June 2014.
- [25] M. Olszewska-Placha, B. Salski, D. Janczak, P.R. Bajurko, W. Gwarek, M. Jakubowska, "A broadband absorber with a resistive pattern made of ink with graphene nano-platelets", *IEEE Transactions on Antennas and Propagation*, vol. 63, no.2, pp. 565-572, February 2015.
- [26] B. Salski, P. Kopyt, K. Kulpa, P. Samczynski, "Forward- and backward-scattering profiles of selected metallic targets", *Signal Processing Symposium (SPSymo) 2017*, 2017.

Time Domain Reflectometry

- [27] G.H. Shirkoohi, "Modelling of fault detection in electrical wiring", *9th IET International Conference on Computation in Electromagnetics (CEM) 2014*, 2014.
- [28] G.H. Shirkoohi, "Modelling and simulation of fault detection in shielded twisted pair cables", *IEEE International Conference on Industrial Technology (ICIT) 2016*, pp. 1039-1044, 2016.

Optics

- [29] T. Karpisz, B. Salski, A. Szumska, M. Klimczak, R. Buczynski, "FDTD analysis of modal dispersive properties of nonlinear photonic crystal fibers", *Optical and Quantum Electronics*, vol. 47, no.1, pp. 99-106, January 2015.
- [30] P. Kopyt, B. Salski, M. Sakowicz, "Efficient three-dimensional electromagnetic modelling of metal-metal waveguides employed for quantum cascade lasers operating in the THz band", *Journal of Lightwave Technology*, vol. 36, no. 9, pp. 1721-1729, May 2018.

High-power microwave technology

- [31] B. Salski, M. Przygodzki, "A low-cost high-power applicator for microwave recycling of waste tires", *IEEE MTT-S International Microwave Symposium Digest*, 2013.
- [32] M.A. Willert-Porada, H.S. Park, A. Rosin, "New method for temperature dependent dielectric property investigation in polymer composite materials", *IEEE MTT-S International Microwave Symposium 2013*, Seattle, June 2013.
- [33] E.M. Moon, Ch. Yang, M. Patel, H. He, V.V. Yakovlev, "Microwave-induced temperature fields in graphite powder heated in a waveguide reactor", *IEEE MTT-S International Microwave Symposium 2014*, Tampa, June 2014.
- [34] M. Willert-Porada, H-S. Park, "Microwave assisted ion exchange in silicate glass", *IEEE MTT-S International Microwave Symposium 2014*, Tampa, June 2014.
- [35] V.V. Komarov, "Estimation of heating rate in the near zone of interstitial microwave applicator", *IEEE Microwave and Wireless Components Letters*, vol.2, no. 9, pp. 640-642, September 2014.
- [36] B. Salski, M. Olszewska-Placha, J. Rudnicki, W. Gwarek, T. Karpisz, Sz. Reszewicz, "Design of an Applicator for Microwave-Assisted Bituminous Surface Thermal Bonding", *IEEE MTT-S International Microwave Symposium 2015*, Phoenix, May 2015.
- [37] B. Salski, M. Olszewska-Placha, J. Rudnicki, W. Gwarek, T. Karpisz, Sz. Reszewicz, "Design of an Applicator for Microwave-Assisted Bituminous Surface Thermal Bonding", *IEEE MTT-S International Microwave Symposium 2015*, Phoenix, May 2015.
- [38] M.A. Willert-Porada, A. Rosin, P. Pontiller, C. Richter, J. Boeckler, "Additive manufacturing of ceramic composites by laser assisted microwave plasma processing, LAMPP", *IEEE MTT-S International Microwave Symposium 2015*, Phoenix, May 2015.
- [39] D. Luan, Y. Wang, "Heating pattern of frozen food affected by microwave oven frequency", *15th Mediterranean Microwave Symposium (MMS) 2015*, 2015.
- [40] E.M. Moon, Ch. Yang, V.V. Yakovlev, "Microwave-induced temperature fields in cylindrical samples of graphite powder - experimental and modelling studies", *International Journal of Heat and Mass Transfer*, vol. 87, pp. 359-368, April 2015.
- [41] J.M. Catala-Civera, A.J. Canos, P. Plaza-Gonzalez, J.D. Gutierrez, B. Garcia-Benos, F. Penaranda-Foix, "Dynamic measurement of dielectric properties of materials at high temperature during microwave heating in a dual mode cylindrical cavity", *IEEE Transactions on Microwave Theory and Techniques*, vol.63, no. 9, pp. 2905-2914, September 2015.

- [42] J.M. Catala-Civera, A.J. Canos, P. Plaza-Gonzalez, J.D. Gutierrez, B. Garcia-Benos, F. Penaranda-Foix, "Dynamic measurement of dielectric properties of materials at high temperature during microwave heating in a dual mode cylindrical cavity", *IEEE Transactions on Microwave Theory and Techniques*, vol.63, no. 9, pp. 2905-2914, September 2015.
- [43] Rosin, M.A. Willert-Porada, T. Gerdes, A. Schmidt-Rodenkirchen, "High pressure microwave flow reactor for raw oil treatment", *IEEE MTT-S International Microwave Symposium 2016*, San Francisco, May 2016.
- [44] V.V. Yakovlev, "Computer modelling in the development of mechanisms of control over microwave heating in solid-state energy systems", *AMPERE Newsletter*, vol. 89, pp.18-21, July 2016.
- [45] B. Salski, M. Olszewska-Placha, T. Karpisz, J. Rudnicki, W. Gwarek, M. Maliszewski, A. Zofka, J. Skulski, "Microwave applicator for thermal treatment of bituminous surfaces", *IEEE Transactions on Microwave Theory and Techniques*, vol. 65, no. 99, pp. 1-9, January 2017.
- [46] V.V. Yakovlev, "Effect of frequency alteration regimes on the heating patterns in a solid-state-fed microwave cavity", *Journal of Microwave Power and Electromagnetic Energy*, vol. 52, no. 1, pp. 31-44, January 2018.

Millimetre wave applications

- [47] D. Coquillat, J. Marczewski, P. Kopyt, N. Dyakonova, S. Ruffenach, D. But, F. Teppe, F. Schuster, B. Giffard, W. Knap, "Experimental and theoretical investigations of responsivity of field effect transistors based Terahertz detectors versus substrate thickness", *40th International Conference on Infrared, Millimeter, and Terahertz waves (IRMMW-THz)*, 2015.
- [48] D. Coquillat, J. Marczewski, P. Kopyt, N. Dyakonova, B. Giffard, W. Knap, "Improvement of terahertz effect transistor detectors by substrate thinning and radiation losses reduction", *Optics Express*, vol. 24, no. 1, pp. 272-281, January 2016.
- [49] T. Karpisz, P. Kopyt, B. Salski, J. Krupka, "Open-ended waveguide measurement of liquids at millimetre wavelengths", *IEEE MTT-S International Microwave Symposium 2016*, San Francisco, May 2016.
- [50] P. Kopyt, B. Salski, P. Zagrajek, J. Marczewski, "Affordable sub-THz band-pass mesh filters", *21st International Conference on Microwave, Radar and Wireless Communication MIKON-2016*, Krakow, June 2016.
- [51] D.B. But, D. Coquillat, N. Dyakonova, F. Teppe, S. Ruffenach, W. Knap, P. Kopyt, "Substrate optimisation for a planar antenna of terahertz Si field effect transistor detectors", *21st International Conference on Microwave, Radar and Wireless Communication MIKON-2016*, Krakow, June 2016.
- [52] P. Kopyt, B. Salski, P. Zagrajek, D. Janczak, M. Sloma, M. Jakubowska, M. Olszewska-Placha, and W. Gwarek, "Electric Properties of Graphene-Based Conductive Layers from DC Up To Terahertz Range", *IEEE Transactions on THz Science and Technology*, vol. 6, no. 3, pp. 480-490, May 2016.
- [53] V.V. Komarov, V.P. Meschanov, N.F. Popova, "Short waveguide load for millimetre-wave applications", *Electronics Letters*, vol.52, no. 5, pp. 378-379, March 2016.
- [54] P. Kopyt, B. Salski, M. Sakowicz, "Efficient three-dimensional electromagnetic modelling of metal-metal waveguides employed for quantum cascade lasers operating in the THz band", *Journal of Lightwave Technology*, vol. 36, no. 9, pp. 1721-1729, May 2018.
- [55] P. Kopyt, B. Salski, P. Zagrajek, D. Obrebski, J. Marczewski, "Modeling of silicon-based substrates of patch antennas operating in the sub-THz range", *IEEE Transactions on THz Science and Technology*, vol. 7, no. 4, pp. 424-432, July 2017.

Material science modelling and instrumentation

- [56] M.A. Willert-Porada, H.S. Park, A. Rosin, "New method for temperature dependent dielectric property investigation in polymer composite materials", *IEEE MTT-S International Microwave Symposium 2013*, Seattle, June 2013.
- [57] M. Olszewska-Placha, B. Salski, W. Gwarek, "Angular and spectral characteristics of a wideband microwave absorber", *20th International Conference on Microwaves, Radar and Wireless Communications MIKON-2014*, Gdansk, June 2014.
- [58] B. Salski, M. Krysicki, M. Bryla, D. Janczak, M. Jakubowska, "Electromagnetic characterization of composites with conductive inclusions", *20th International Conference on Microwave, Radar and Wireless Communication MIKON-2014*, Gdansk, June 2014.
- [59] M. Olszewska-Placha, B. Salski, W. Gwarek, D. Janczak, M. Jakubowska, "Wideband and thin microwave absorber with inhomogeneous resistive sheet made of ink with graphene nanoplatelets", *Microwave Materials and Their Applications 2014 (MMA 2014)*, Boise, June 2014.
- [60] B. Salski, W. Gwarek, P. Korpas, "Non-destructive testing of carbon-fiber-reinforced polymer composites with coupled spiral inductors", *IEEE MTT-S International Microwave Symposium 2014*, Tampa, June 2014.
- [61] E.M. Moon, Ch. Yang, M. Patel, H. He, V.V. Yakovlev, "Microwave-induced temperature fields in graphite powder heated in a waveguide reactor", *IEEE MTT-S International Microwave Symposium 2014*, Tampa, June 2014.
- [62] M. Willert-Porada, H-S. Park, "Microwave assisted ion exchange in silicate glass", *IEEE MTT-S International Microwave Symposium 2014*, Tampa, June 2014.
- [63] B. Salski, W. Gwarek, P. Korpas, "Electromagnetic inspection of carbon-fiber-reinforced polymer composites with coupled spiral inductors", *IEEE Transactions on Microwave Theory and Techniques*, vol. 62, no. 7, pp. 1535-1544, July 2014.
- [64] B. Salski, "An FDTD Model of a graphene intraband conductivity", *IEEE Transactions on Microwave Theory and Techniques*, vol. 62, no. 9, pp. 1570-1578, August 2014.
- [65] B. Salski, "An FDTD Model of a thin dispersive layer", *IEEE Transactions on Microwave Theory and Techniques*, vol. 62, no. 8, pp. pp. 1912-1919, September 2014.
- [66] M. Olszewska-Placha, B. Salski, D. Janczak, P.R. Bajurko, W. Gwarek, M. Jakubowska, "A broadband absorber with a resistive pattern made of ink with graphene nano-platelets", *IEEE Transactions on Antennas and Propagation*, vol. 63, no.2, pp. 565-572, February 2015.
- [67] P. Kopyt, B. Salski, M. Olszewska-Placha, D. Janczak, M. Sloma, T. Kurkus, M. Jakubowska, W. Gwarek, "Graphene-based dipole antenna for a UHF RFID tag", *IEEE MTT-S International Microwave Symposium 2015*, Phoenix, May 2015.
- [68] M.A. Willert-Porada, A. Rosin, P. Pontiller, C. Richter, J. Boeckler, "Additive manufacturing of ceramic composites by laser assisted microwave plasma processing, LAMPP", *IEEE MTT-S International Microwave Symposium 2015*, Phoenix 2015, May 2015.
- [69] E.M. Moon, Ch. Yang, V.V. Yakovlev, "Microwave-induced temperature fields in cylindrical samples of graphite powder - experimental and modelling studies", *International Journal of Heat and Mass Transfer*, vol. 87, pp. 359-368, April 2015.
- [70] J.M. Catala-Civera, A.J. Canos, P. Plaza-Gonzalez, J.D. Gutierrez, B. Garcia-Benos, F. Penaranda-Foix, "Dynamic measurement of dielectric properties of materials at high temperature during

microwave heating in a dual mode cylindrical cavity", *IEEE Transactions on Microwave Theory and Techniques*, vol.63, no. 9, pp. 2905-2914, September 2015.

- [71] P. Kopyt, B. Salski, P. Zagrajek, D. Janczak, M. Sloma, M. Jakubowska, M. Olszewska-Placha, and W. Gwarek, "Electric Properties of Graphene-Based Conductive Layers from DC Up To Terahertz Range", *IEEE Transactions on THz Science and Technology*, vol. 6, no. 3, pp. 480-490, May 2016.
- [72] T. Karpisz, P. Kopyt, B. Salski, J. Krupka, "Open-ended waveguide measurement of liquids at millimetre wavelengths", *IEEE MTT-S International Microwave Symposium 2016*, San Francisco, May 2016.
- [73] B. Salski, "FDTD modelling of weakly conductive wires dispersed in a dielectric mixture", *21st International Conference on Microwave, Radar and Wireless Communication MIKON-2016*, Krakow, June 2016.
- [74] B. Salski, M. Olszewska-Placha, T. Karpisz, J. Rudnicki, W. Gwarek, M. Maliszewski, A. Zofka, J. Skulski, "Microwave applicator for thermal treatment of bituminous surfaces", *IEEE Transactions on Microwave Theory and Techniques*, vol. 65, no. 99, pp. 1-9, January 2017.
- [75] D. Marques-Villarroya, F. Penaranda-Foix, B. Garcia-Benos, J.M. Catala-Civera, J.D. Gutierrez-Cano, "Analysis of an overmoded re-entrant cavity", *47th European Microwave Conference (EuMC) 2017*, pp. 440-443, 2017.

Passive components

- [76] M. Zukocinski, A. Abramowicz, "Design and realization of complementary couplings filter based on electromagnetic field distributions", *International Conference on Electromagnetics in Advanced Applications (ICEAA) 2013*, pp. 1301-1304, 2013.
- [77] M. Olszewska-Placha, B. Salski, W. Gwarek, "Angular and spectral characteristics of a wideband microwave absorber", *20th International Conference on Microwaves, Radar and Wireless Communications MIKON-2014*, Gdansk, June 2014.
- [78] M. Zukocinski, A. Golaszewski, A. Abramowicz, "Shaping frequency characteristics of wideband direct-coupler resonator filters by means of electric and magnetic couplings", *20th International Conference on Microwaves, Radar and Wireless Communications MIKON-2014*, Gdansk, June 2014.
- [79] M. Olszewska-Placha, B. Salski, W. Gwarek, D. Janczak, M. Jakubowska, "Wideband and thin microwave absorber with inhomogeneous resistive sheet made of ink with graphene nanoplatelets", *Microwave Materials and Their Applications 2014 (MMA 2014)*, Boise, June 2014.
- [80] M. Olszewska-Placha, B. Salski, D. Janczak, P.R. Bajurko, W. Gwarek, M. Jakubowska, "A broadband absorber with a resistive pattern made of ink with graphene nano-platelets", *IEEE Transactions on Antennas and Propagation*, vol. 63, no.2, pp. 565-572, February 2015.
- [81] V.V. Komarov, V.P. Meschanov, N.F. Popova, "Short waveguide load for millimetre-wave applications", *Electronics Letters*, vol.52, no. 5, pp. 378-379, March 2016.
- [82] Abramowicz, P. Gierlowski, M. Jaworski, "Narrowband microstrip HTS filter", *21st International Conference on Microwave, Radar and Wireless Communication MIKON-2016*, Krakow, June 2016.
- [83] L.J. Opalski, A. Lewandowski, A. Golaszewski, A. Abramowicz, W. Wiatr, "Equivalent-circuit modelling of coaxial-connector center-conductor gap", *21st International Conference on Microwave, Radar and Wireless Communication MIKON-2016*, Krakow, June 2016.