

References

- Abbosh, A.M., (2009), "Miniaturized microstrip-fed tapered-slot antenna with ultrawideband performance", *IEEE Antennas Wireless Propagation Letters*, Vol. 8, pp. 690-692, 2009
- Abdollahvand, M., Dadashzadeh, G., and Mostafa, D., (2010), "Compact Dual Band-Notched Printed Monopole Antenna for UWB Application", *IEEE Antennas Wireless Propagation Letters*, Vol. 9, pp. 1148-1151, 2010
- Abedin, M.F., Ali, M., (2003), "Modifying the Ground Plane and Its Effect on Planar Inverted-F Antennas (PIFAs) for Mobile Phone Handsets", *IEEE Antennas Wireless Propagation Letters*, Vol. 2, 2003
- Ahmed, O.M.H., (2011), "Ultra-wideband antennas and components for wireless communication systems", Ph.D thesis, *Department of Electrical and Computer Engineering, Concordia University Montreal, Quebec, Canada, September 2011*
- Allen, B., Dohler, M., Okon, E.E., Malik, W.Q., Brown, A.K., and Edwards, D.J., (2007), "Ultra-Wideband Antennas and Propagation for Communications Radar and Imaging" Hoboken, NJ: Wiley, 2007, ch. 7
- Alomainy, A., Hao, Y., Parini, C.G., and Hall, P.S., (2005), "Comparison between two different antennas for UWB on-body propagation measurements", *IEEE Antennas Wireless Propagation Letters*, Vol. 4, pp. 31-34, 2005
- Amin, Y., Chen, Q., Tenhunen, H., and Zheng, L.R., (2012), "Performance-optimized quadrate bowtie RFID antennas for cost-effective and eco-friendly industrial applications", *Progress in Electromagnetic Research*, Vol. 126, pp. 49-64, 2012
- Amiri, S., Ojaroudi, N., Geran, F., and Ojaroudi, M., (2012), "A novel and compact monopole antenna with band-stop performance for UWB applications", *Telecommunications Forum (TELFOR)*, Vol. 20, pp. 1156-1158, 2012
- Anguera, J., Puente, C., Borja, V., and Soler, J., (2005), "Fractal-Shaped Antennas: a Review", *Wiley Encyclopedia of RF and Microwave Engineering*, Vol. 2, pp. 1620-1635, 2005
- Anguera, J., Sanz, I., Mumbro, J., and Puente, C., (2010), "Multi-Band Handset Antenna with a Parallel Excitation of PIFA and Slot Radiators", *IEEE Transactions Antennas and Propagation*, Vol. 58, No. 2, pp. 348-356, 2010
- Azim, R., Islam, M.T., and Mobashsher, A.T. (2014) "Dual Band-Notch UWB Antenna With Single Tri-Arm Resonator," *IEEE Antennas Wireless Propagation Letters*, Vol. 13, pp. 670-673, 2014
- Badamchi, B., Nourinia, J., Ghobadi, C., and Valizade Shahmirzadi, A., (2014), "Design of compact reconfigurable ultra-wideband slot antenna with switchable single/dual band notch functions", *IET Microwave Antennas and Propagation*, Vol. 8, No. 8, pp. 541-548, 2014
- Bahadori, K., and Rahmat-Samii, Y., (2007), "A miniaturized elliptic-card UWB antenna with band rejection for wireless communications", *IEEE Transactions Antennas and Propagation*, Vol. 55, No. 11, pp. 3326-3332, Nov. 2007
- Balanis, C.A., (2005), *Antenna Theory: Analysis Design*, Third Edition, John Wiley & Sons, Inc., 2005
- Baliarda, C.P., Romeu, J., Pous, R., and Cardama, A., (1998), "On the behavior of the Sierpinski multiband fractal antenna", *IEEE Transactions Antennas and Propagation*, Vol. 46, No. 4, pp. 517-524, 1998
- Ben, I.M., Talbi, L., Nedil, M., and Hettak, K., (2012), "MIMO-UWB channel characterization within an underground mine gallery", *IEEE Transactions Antennas and Propagation*, Vol. 60, No. 10, pp. 4866-4874, 2012
- Best, S.R., (2003) "A discussion on the significance of geometry in determining the resonant behavior of fractal and other non-Euclidean wire antennas", *IEEE Antennas and Propagation Magazine*, Vol. 45, No. 3, pp. 9-28, 2003
- Blanch, S., Romeu, J., and Corbella, I., (2003), "Exact representation of antenna system diversity performance from input parameter description", *Electronics Letter*, Vol. 39, No. 9, pp. 705-707, 2003
- Bokhari, S.A., Zurcher, J.F., Mosig, J.R., Gardiol, F.E., (1996) "A small microstrip patch antenna with a convenient tuning option", *IEEE Transactions Antennas and Propagation*, Vol. 44, No. 11, pp. 1521-1528, 1996
- Bolin, T., Derneryd, A., Kristensson, G., Plicanic, V., and Ying, Z., (2005), "Two-antenna receive diversity performance in indoor environment", *Electronics Letter*, Vol. 41, No. 22, pp. 1205-1206, 2005
- Boudaghi, H., Azarmanesh, M., and Mehranpour, M., (2012), "A Frequency-Reconfigurable Monopole Antenna Using Switchable Slotted Ground Structure", *IEEE Antennas Wireless Propagation Letters*, Vol. 11, pp. 655-658, 2012

- Bourke, P., (2013), "Circumference of an ellipse", (2013), <http://paulbourke.net/geometry/ellipsecirc/>; 23 October 2013
- Cabedo, A., Anguera, J., Picher, C., Ribo, M., and Puente, C., (2009), "Multi-Band Handset Antenna Combining a PIFA, Slots, and Ground Plane Modes", *IEEE Transactions Antennas and Propagation*, Vol. 57, No. 9, pp. 2526-2533, 2009
- Cai, A., and Chen, Z.N., (2005), "Characterization of printed UWB antennas in proximity of human head", *Proceeding of the 2005 IEEE Antennas and Propagation Society International Symposium*, Vol. 1B, Washington, DC, pp. 698 -701, July 3-8, 2005
- Cantrell, W.H., (2000), "Tuning analysis for the high-Q class-E power amplifier", *IEEE Transactions Microwave Theory Technology*, Vol. 48, No. 12, pp. 2397-2402, 2000
- Chacko, B.P., Augustin, G., and Denidni, T.A., (2013), "Uniplanar Slot Antenna for Ultrawideband Polarization-Diversity Applications", *IEEE Antennas Wireless Propagation Letters*, Vol. 12, pp. 88-91, 2013
- Chahat, N., Zhadobov, M., Sauleau, R., and Ito, K., (2011), "A Compact UWB Antenna for On-Body Applications", *IEEE Transactions Antennas and Propagation*, Vol. 59, No. 4, pp. 1123-1131, 2011
- Chen, H., Guo, Z., Yao, R.Y., Shen, X., and Li, Y., (2006), "Performance analysis of delayed acknowledgment scheme in UWB-based high-rate WPAN", *IEEE Transactions Vehicular Technology*, Vol. 55, No. 2, pp. 606-621, 2006
- Chen, Zhi Ning, (2007), "UWB antennas: Design and application", *2007 6th International Conference on Information, Communications and Signal Processing*, Vol., No., pp. 1-5, 10-13 Dec. 2007
- Chen, Z.N., See, T.S.P., and Qing X., (2007), "Small Printed Ultrawideband Antenna With Reduced Ground Plane Effect", *IEEE Transactions Antennas Propagation*, Vol. 55, No. 2, pp. 383-388, 2007
- Cho, Young-Jun, Kim, Ki-Hak, Choi, Dong Hyuk, Lee, Seung-Sik, and Park, Seong-Ook, (2006), "A miniature UWB planar monopole antenna with 5-GHz band-rejection filter and the time-domain characteristics", *IEEE Transactions Antennas Propagation*, Vol. 54, No. 5, pp. 1453-1460, 2006
- Chong, Chia-Chin, Watanabe, F., Inamura, H., (2006), "Potential of UWB Technology for the Next Generation Wireless Communications," *2006 IEEE Ninth International Symposium on Spread Spectrum Techniques and Applications*, pp. 422-429, 28-31 Aug. 2006
- Choukiker, Y.K., Sharma, S.K., and Behera, S.K., (2014), "Hybrid Fractal Shape Planar Monopole Antenna Covering Multiband Wireless Communications With MIMO Implementation for Handheld Mobile Devices", *IEEE Transactions Antennas and Propagation*, Vol. 62, No. 3, pp. 1483-1488, 2014
- Chu, Qing-Xin, and Yang, Ying-Ying, (2008), "A Compact Ultrawideband Antenna With 3.4/5.5 GHz Dual Band-Notched Characteristics", *IEEE Transactions Antennas and Propagation*, Vol. 56, No. 12, pp. 3637-3644, 2008
- Cohen, N., (1997), "Fractal antenna applications in wireless telecommunications", *1997 Electronics Industries Forum of New England, Professional Program Proceedings*, pp. 43-49, 6-8 May 1997
- Cohen, N., Hohlfeld, R., Moschella, D., and Salkind, P., (2003), "Fractal wideband antennas for software defined radio, UWB, and multiple platform applications," *Proceedings of the Radio and Wireless Conference, RAWCON '03*, pp. 99-102, 10-13 Aug. 2003
- Collier, W.C., and Weiland, R.J., (1994), "Smart cars, smart highways", *IEEE Spectrum.*, Vol. 31, No. 4, pp. 27-33, April 1994
- Daotie, L., and Mao, J.F., (2012), "A Koch-Like Sided Fractal Bow-Tie Dipole Antenna", *IEEE Transactions Antennas and Propagation*, Vol. 60, pp. 2242-2251, 2012
- Dhar, S., Ghatak, R., Gupta, B., and Poddar, D.R., (2013), "A Wideband Minkowski Fractal Dielectric Resonator Antenna", *IEEE Transactions Antennas and Propagation*, Vol. 61, No. 6, pp. 2895-2903, 2013
- Dielectric Properties of Body Tissues, (2013), <http://niremf.ifac.cnr.it/tissprop/>; 14 March 2013
- Ding, M., Jin, R., Geng, J., and Wu, Q., (2007), "Design of a CPW-fed Ultra Wideband Crown Circular Fractal Antenna", *Microwave Optical Technology Letters*, pp. 173-176, 2007
- Ebrahimi, E.J., Kelly, R., and Hall, P., (2011), "Integrated wide-narrowband antenna for multi-standard radio", *IEEE Transactions Antennas and Propagation*, Vol. 59, No. 7, pp. 2628-2635, 2011
- Erfani, E., Nourinia, J., Ghobadi, C., Niroo-Jazi, M., and Denidni, T.A., (2012), "Design and Implementation of an Integrated UWB/Reconfigurable-Slot Antenna for Cognitive Radio Applications", *IEEE Antennas Wireless Propagation Letters*, Vol. 11, pp. 77-80, 2012
- Falconer, K.J., (1990), "Fractal Geometry Mathematical Foundation and Application", New York: Wiley, 1990.
- FCC, (2002), Washington, DC, "FCC 1st report and order on ultrawideband technology", Feb. 2002
- FCC Technical Report, (2003), "Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields", Federal Communications Commission, USA, 2003

- Fereidoony, F., Chamaani, S., and Mirtaheri, S.A., (2012), "Systematic Design of UWB Monopole Antennas With Stable Omnidirectional Radiation Pattern," *IEEE Antennas Wireless Propagation Letters*, Vol. 11, pp. 752-755, 2012
- Fontana, R.J., (2004), "Recent System Applications of Short-Pulse UltraWideband (UWB) Technology", *IEEE Transactions Microwave Theory Technology*, Vol. 52, pp. 2087-2104, 2004
- Fort, A., Dessel, C., Doncker, P.D., Wambacq P., and Biesen, L.V., (2006), "An Ultrawideband Body Area Propagation Channel Model From Statistics to Implementation", *IEEE Transactions Microwave Theory Technology*, Vol. 54, No. 4, 2006
- Foschini, G.J., and Gans, M.J., (1998), "On limits of wireless communications in a fading environment when using multiple antennas", *Wireless Personal Communication*, No. 6, pp. 311-335, 1998
- Gao, Peng, Ling Xiong, Jianbo Dai, Shuang He, and Yi Zheng, (2013), "Compact Printed Wide-Slot UWB Antenna With 3.5/5.5-GHz Dual Band-Notched Characteristics", *IEEE Antennas Wireless Propagation Letters*, Vol. 12, pp. 983-986, 2013
- Gianvittorio, J.P., and Rahmat-Samii, Y., (2002), "Fractal antennas: a novel antenna miniaturization technique, and applications", *IEEE Antennas and Propagation Magazine*, Vol. 44, No. 1, pp. 20-36, 2002
- Giuliano, R. and Mazzenga, F., (2005), "On the coexistence of power-controlled ultrawide-band systems with UMTS, GPS, DCS1800, and fixed wireless systems", *IEEE Transactions Vehicular Technology*, Vol. 54, No. 1, pp. 62-81, Jan. 2005
- Ghuang, M.T., and Jeng, S.K., (2005), "Planar miniature tapered-slot-fed annular slot antennas for ultrawide-band radios", *IEEE Transactions Antennas and Propagation*, Vol. 53, No. 3, pp. 1194-1202, 2005
- Guterman, J., Moreira, A.A., and Peixeiro, C., (2004), "Microstrip fractal antennas for multi-standard terminals", *IEEE Antennas Wireless Propagation Letters*, Vol. 3, pp. 351-354, 2004
- Hamalainen, M., Pirinen, P., Iinatti, J., and Taparugssanagorn, A., (2008), "UWB supporting medical ICT applications", *IEEE International Conference on Ultra-Wideband, 2008 (ICUWB 2008)*, Vol. 3, pp.15-16, 10-12 Sept. 2008
- Hashemi, M.R.H., Sadeghi, M.M.M., and Moghtadai, V.M., (2006), "Space-filling patch antennas with CPW feed", *Progress Electromagnetic Research Symposium*, March 26-29, 2006
- HFSS, ver. 13, Ansoft Corporation, Pittsburgh, PA; 11
- Hong, S., Chung, K., Lee, J., Jung, S., Lee, S.S., and Choi, J., (2008), "Design of a diversity antenna with stubs for UWB applications", *Microwave Optical Technology Letters*, Vol. 50, No. 5, pp. 1352-1356, 2008
- ICNIRP Guidelines, (1998), "Guidelines For Limiting Exposure To Time-Varying Electric, Magnetic, and Electromagnetic Fields," *International Commission on Non-Ionizing Radiation Protection*, 1998
- IEEE Std. C95.1-2005, (2006), "IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 KHz to 300 GHz", (Revision of IEEE Std C95.1-1991), pp. 189 -238, 2006
- Jiangand, W., and Che, W.Q., (2012), "A novel UWB antenna with dual notched bands for WiMAX and WLAN applications", *IEEE Antennas Wireless Propagation Letters*, Vol. 11, pp. 293-296, 2012
- Karaboikis, M.P., Papamichael, V.C., Tsachtsiris, G.F., Soras, C.F., Makios, V.T., (2008), "Integrating Compact Printed Antennas Onto Small Diversity/MIMO Terminals", *IEEE Transactions Antennas and Propagation*, Vol. 56, No. 7, pp. 2067-2078, 2008
- Karmakar, A., Ghatak, R., Banerjee, U., and Poddar, D.R., (2013), "An UWB antenna using modified Hilbert curve slot for dual band notch characteristics", *Journal of Electromagnetic Waves and Applications*, Vol. 27, pp. 1620-1631, 2013
- Kelly, J.R., Hall, P.S., and Gardner, P., (2011), "Band-notched UWB antenna incorporating a microstrip open-loop resonator", *IEEE Transactions Antennas and Propagation*, Vol. 59, No. 8, pp. 3045-3048, Aug. 2011
- Kiem, N.K., Phuong, H.N.B., and Chien, D.N., (2014), "Design of Compact 4 × 4 UWB-MIMO Antenna with WLAN Band Rejection," *International Journal of Antennas and Propagation*, Article ID 539094, 11 pages, 2014
- Klemm M., and Troester, G., (2006), "EM energy absorption in the human body tissues due to UWB antennas", *Progress in Electromagnetic Research*, Vol. 62, pp. 261-280, 2006
- Koohestani, M., Pires, N., Skrivervik, A.K., and Moreira, A.A., (2013), "Time domain performance of patch-loaded band-reject UWB antenna", *Electronic Letters*, Vol. 49, No. 6, pp. 385-386, 2013
- Koohestani, M., Pires, N., Skrivervik, A.K., and Moreira, A.A., (2014), "A Novel Compact CPW-Fed Polarization Diversity Ultrawideband Antenna", *IEEE Antennas Wireless Propagation Letters*, Vol. 13, pp. 563-566, 2014
- Lee, J.M., Kim, K.B., Ryu, H.K., and Woo, J.M., (2012), "A Compact Ultrawideband MIMO Antenna With WLAN Band-Rejected Operation for Mobile Devices," *IEEE Antennas Wireless Propagation Letters*, Vol. 11, pp. 990-993, 2012

- Li, L., Zhou, Z.L., Hong, J.S., and Wang, B.Z., (2011) "Compact dual-band notched UWB planar monopole antenna with modified SRR", *Electronic Letters*, Vol. 47, No. 17, Aug. 2011
- Li, J.F., Chu, Q.X., and Huang, T.G., (2012), "A Compact Wideband MIMO Antenna With Two Novel Bent Slits", *IEEE Transactions Antennas and Propagation*, Vol. 60, No. 2, pp. 482-489, 2012
- Li, L., Cheung, S.W., Yuk, T.I., (2013), "Compact MIMO Antenna for Portable Devices in UWB Applications" *IEEE Transactions Antennas and Propagation*, Vol. 61, No. 8, pp. 4257-4264, 2013
- Li, Y.S., Yang, X.D., Liu, C.Y., and Jiang, T., (2011), "Analysis and investigation of a Cantor set fractal UWB antenna with a notch-band characteristic", *Progress Electrom Res B*, Vol. 33, pp. 99-114, 2011
- Lihong W., Lina X., Xinwei C., Rongcao Y., Liping H., Wenmei Z., (2014), "A Compact Ultrawideband Diversity Antenna With High Isolation," *IEEE Antennas Wireless Propagation Letters*, Vol. 13, pp. 35-38, 2014
- Lopes, Filipe-Monteiro, (2009), "Fractal Antennas for Wireless Communication Systems", M.S. thesis, Electrical and Computers Engineering., FEUP, June 2009
- Mao, C., and Chu, Q., (2014), "Compact Co-Radiator UWB-MIMO Antenna with Dual Polarization," *IEEE Transactions Antennas and Propagation*, Vol. 62, No. 9, pp. 4474-4480, 2014
- Marindra, A.M.J., Promwong, S., and Takada, J., (2012), "Comprehensive characterization of a novel UWB elliptical planar monopole antenna", *IEEE Region 10 Conference TENCON 2012*, pp. 1-6, 19-22 November 2012
- Matlab, (2013), <http://www.mathworks.in/products/symbolic>; 13 December 2013
- Mcewan, T.E., (1996), "Body monitoring and imaging apparatus and method", US Patent No. 5,573,012, Issued on November 12, 1996
- Mckinstry, D.R., and Buehrer, R.M., (2002), "Issues in the performance and covertness of UWB communications systems," *Proceeding of the 45th Midwest Symposium on Circuits and System*, Vol. 3, pp. 601-604, Tulsa, Aug. 2002
- Mitola, J., III, (1999), "Cognitive radio for flexible mobile multimedia communications" *Proceeding of the IEEE MoMuC*, pp. 3-10, 1999
- Mokole, E., (1996), "Behavior of ultrawideband-radar array antennas," *IEEE International Symposium on Phased Array Systems and Technology 1996*, pp. 113-118, 15-18 Oct 1996
- Nekoogar, F., (2005), "Ultra-Wideband Communications: Fundamentals and Applications" New Jersey: Prentice Hall, 2005.
- Qing, X., Chen, Z.N., See, T.S.P., Goh, C.K., and Chiam, T.M., (2010), "RF transmission characteristics in/through the human body", *Proceeding of the IEEE Conference on Cybernetics and Intelligent Systems*, pp. 20-23, Singapore, June 2010
- Ojaroudi, N., and Ojaroudi, M., (2013), "Novel Design of Dual Band-Notched Monopole Antenna With Bandwidth Enhancement for UWB Applications", *IEEE Antennas and Wireless Propagation Letters*, Vol. 12, pp. 698-701, 2013
- Ojaroudi, M., Yazdanifard, S., Ojaroudi, N., and Sadeghzadeh, R.A., (2011), "Band-notched small square-ring antenna with a pair of T-shaped strips protruded inside the square ring for UWB applications", *IEEE Antennas Wireless Propagation Letters*, Vol. 10, pp. 227-230, 2011
- Oraizi, H., and Hedayati, S., (2011), "Miniaturized UWB monopole microstrip antenna design by the combination of giusepe peano and sierpinski carpet fractals", *IEEE Antennas Wireless Propagation Letters*, Vol. 10, pp. 67-70, 2011
- Patnam, R.H., (2008), "Broadband CPW-fed planar Koch fractal loop antenna", *IEEE Antennas Wireless Propagation Letters*, Vol. 7, pp. 429-431, 2008
- Peng G., Ling X., Jianbo D, Shuang H., and Yi Z., (2013), "Compact Printed Wide-Slot UWB Antenna With 3.5/5.5-GHz Dual Band-Notched Characteristics", *IEEE Antennas Wireless Propagation Letters*, Vol. 12, pp. 983-986, 2013
- Peng, G., Shuang, H., Xubo, W., Ziqiang, X., Ning, W., and Yi, Z., (2014), "Compact Printed UWB Diversity Slot Antenna With 5.5-GHz Band-Notched Characteristics", *IEEE Antennas Wireless Propagation Letters*, Vol. 13, pp. 376-379, 2014
- Pourahmadazar, J., Ghobadi, C., and Nourinia, J., (2011), "Novel Modified Pythagorean Tree Fractal Monopole Antennas for UWB Applications", *IEEE Antennas Wireless Propagation Letters*, Vol. 10, pp. 484-487, 2011
- Pozar D.M., (1998), "Microwave Engineering", Second Edition. New York, 1998
- Rajagopalan, A., Gupta, G., Konanur, A.S., Hughes, B., and Lazzi, G., (2007), "Increasing channel capacity of an ultrawideband MIMO system using vector antennas", *IEEE Transactions Antennas and Propagation*, Vol. 55, No. 10, pp. 2880-2887, 2007
- Sanchez-Hernandez, D.A., (2009), "High frequency electromagnetic dosimetry", Artech House, pp. 21-29, 2009

- Sanz-Izquierdo, B., Batchelor, J., and Langley, R., (2004), "Multiband printed PIFA antenna with ground plane capacitive resonator", *Electronic Letters*, Vol. 40, No. 22, 2004
- Schantz, H.G., (2012), "Three centuries of UWB antenna development", *IEEE International Conference on Ultra-Wideband (ICUWB)*, pp. 506-512, 17-20 Sept. 2012
- See, T.S.P., and Chen, Z.N., (2009), "An ultrawideband diversity antenna," *IEEE Transactions Antennas and Propagation*, Vol. 57, No. 6, pp. 1597-1605, Jun. 2009
- Skolnik, M., Andrews, G., Hansen, J.P., (1995), "Ultrawideband microwave-radar conceptual design", *IEEE Aerospace and Electronic Systems Magazine*, Vol. 10, No. 10, pp. 25-30, 1995
- Song, Y., Jiao, Y.C., Zhang, T.L., Jiang, J.B., Zhang, X., and Zhang, F.S., (2012), "Frequency notched UWB slot antenna with a fractal-shaped slot", *Journal of Electromagnetic Waves and Applications*, Vol. 23, pp. 321-327, 2012
- Sorgel, W., Waldschmidt, C., and Wiesbeck, W., (2003), "Transient responses of a Vivaldi antenna and a logarithmic periodic dipole array for ultra-wideband communication", *IEEE International Symposium on Antennas and Propagation Society*, Vol. 3, pp. 592-595, 22-27 June 2003
- Taniguchi, T., and Kobayashi, T., (2002), "An omnidirectional and low-VSWR antenna for ultra-wideband wireless systems", *IEEE Radio and Wireless Conference (RAWCON)*, pp. 145-148, 2002
- Tasouji, N., Nourinia, J., Ghobadi, C., and Tofigh, F., (2013), "A Novel Printed UWB Slot Antenna with Reconfigurable Band-Notch Characteristics", *IEEE Antennas Wireless Propagation Letters*, Vol. 12, pp. 922-925, 2013
- Tawk, Y., Costantine, J., Avery, K., and Christodoulou, C.G., (2011), "Implementation of a cognitive radio front-end using rotatable controlled reconfigurable antennas", *IEEE Transactions Antennas and Propagation*, Vol. 59, No. 5, pp. 1773-1778, 2011
- Toccafondi, A., Giovampaola, C.D., (2012), "Design and analysis of a compact antenna for UWB RFID applications", *IEEE International Symposium of Antennas and Propagation Society (APSURSI)*, pp. 1-2, 8-14 July 2012
- Tripathi, S., Mohan, A., and Yadav, S. (2014), "Ultra Wideband (UWB) Antenna Using Minkowski Like Fractal Geometry", *Microwave Optical Technology Letters*, Vol. 56, No. 3, pp. 2273-2279, 2014
- Tuovinen, T., Yazdandoost, K.Y., and Iinatti, J., (2012), "Comparison of the performance of the two different UWB antennas for the use in WBAN on-body communication", *2012 6th European Conference on Antennas and Propagation (EUCAP)*, pp. 2271-3374, 26-30 March 2012
- Tuovinen, T., Berg, M., Yazdandoost, K.Y., and Iinatti, J., (2013), "Ultra wideband loop antenna on contact with human body tissues", *IET Microwaves, Antennas Propagation*, Vol. 7, No. 7, pp. 588-596, May 15 2013
- Valizade, A., Ghobadi, C., Nourinia, J., and Ojaroudi, M., (2012), "A Novel Design of Reconfigurable Slot Antenna With Switchable Band Notch and Multiresonance Functions for UWB Applications", *IEEE Antennas Wireless Propagation Letters*, Vol. 11, pp. 1166-1169, 2012
- Vinoy, K.J., (2002), "Fractal shaped antenna elements for wide and multi-band wireless applications, "Ph.D. Thesis, Pennsylvania University, Aug. 2002
- Wallace, J.W., Jensen, M.A, (2001), "Experimental characterization of the MIMO wireless channel", *IEEE International Symposium of Antennas and Propagation Society*, Vol. 3, pp. 92-95, 8-13 July 2001
- Werner, D.H., Haupt, R.L., and Werner, P.L., (1999), "Fractal antenna engineering: The Theory and Design of Fractal antenna Arrays", *IEEE Antennas and Propagation Magazine*, Vol. 41, No. 5, pp. 37-58, 1999
- Werner, D.H., and Ganguly, S., (2003), "An overview of fractal antenna engineering research, *IEEE Antennas and Propagation Magazine*, Vol. 45, pp. 38-57, 2003
- Win, M.Z., Scholtz, R.A., and Barnes, M.A., (1997), "Ultra-wide bandwidth signal propagation for indoor wireless communications" *1997 IEEE International Conference on Communications, Montreal, Towards the Knowledge Millennium.*, Vol. 1, pp. 56-60, 8-12 Jun 1997
- Wu, Q., Jin, R., Geng, J., and Ding, M., (2007), "Pulse preserving capabilities of printed circular disk monopole antennas with different grounds for the specified input signal forms", *IEEE Transactions Antennas and Propagation*, Vol. 55, No. 10, pp. 2866-2873, 2007
- Yarovoy, A.G., Schukin, A.D., Kaploun, I.V., and Lighthart, L.P., (2002), "Adaptive bow-tie antenna with variable current distribution," *IEEE International Symposium of Antennas and Propagation Society*, Vol. 2, pp. 516-519, 2002
- Zaker, R., Ghobadi, C., and Nourinia, J., (2008), "Novel Modified UWB Planar Monopole Antenna With Variable Frequency Band-Notch Function", *IEEE Antennas Wireless Propagation Letters*, Vol. 7, pp. 112-114, 2008.
- Zaker, R., Ghobadi, C., and Nourinia, J., (2009), "Bandwidth Enhancement of Novel Compact Single and Dual Band-Notched Printed Monopole Antenna With a Pair of L-Shaped Slots", *IEEE Transactions Antenna and Propagation*, Vol. 57, pp. 3978-3983, 2009

- Zamudio, M., Tawk, Y., Kim, J., and Christodoulou, C.G., (2011), "Integrated cognitive radio antenna using reconfigurable band pass filters", *Proceeding of the 5th European Conference on Antennas Propagation*, pp. 2108-2112, 2011
- Zhang, Y., Hong, W., Yu, C., Kuai, Z.Q., Don, Y.D., and Zhou, J.Y., (2008), "Planar ultrawideband antennas with multiple notched bands based on etched slots on the patch and/or split ring resonators on the feed line," *IEEE Transactions Antennas and Propagation*, Vol. 56, No. 9, pp. 3063-3068, 2008
- Zhang, S., Ying, Z.N., Xiong, J., and He, S.L., (2009) "Ultrawideband MIMO/diversity antennas with a tree-like structure to enhance wideband isolation", *IEEE Antennas Wireless Propagation Letters*, Vol. 8, pp. 1279-1232, 2009

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