

Journal Papers

- [1] A Al-Kinani, CX Wang, Q Zhu, Y Fu, EHM Aggoune, A Talib, "A 3D Non-Stationary GBSM for Vehicular Visible Light Communication MISO Channels", vol 8, IEEE Access, 2020
- [2] M. Ammad-uddin, Muhammad Ayaz, Ali Mansour, and el-Hadi M. Aggoune, " Affordable broaD Agile farMing (ADAM) system for rural & remote area", vol 7, in IEEE ACCESS 2019, (4 -IF)
- [3] Muhammad Ayaz, el-Hadi M. Aggoune, M. Ammad-uddin "Mobile Unsupervised Platform for Real-Time Ocean Water Quality Monitoring", Journal of Control Eng. and Applied Informatics, Vol.21, No.1 pp. 79-88, Feb., 2019 (0.7 IF).
- [4] Muhammad Ayaz, M. Ammad-uddin, Zubair Sharif, Ali Mansour, and el-Hadi M. Aggoune, "Internet-of-Things (IoT) based Smart Agriculture: Towards Making the Fields Talk", in IEEE ACCESS, vol 7, Aug., 2019. 10.1109/ACCESS.2019.2932609. (4 -IF)
- [5] Y Zhang, A Ghazal, CX Wang, H Zhou, W Duan, EHM Aggoune, " Accuracy-Complexity Tradeoff Analysis and Complexity Reduction Methods for Non-Stationary IMT-A MIMO Channel Models", vol 7, 2019, in IEEE Access
- [6] Wahab Khan, Hua Wang, M. S. Anwar, Muhammad Ayaz, Sadique Ahmad, "A Multi-Layer Cluster Based Energy Efficient Routing Scheme for UWSNs" IEEE Access, Vol 7, June 2019, pp. 77398-77410 (4 -IF)
- [7] Ali, T., Yasin, S., Draz, U. Muhammad Ayaz, "Towards Formal Modeling of Subnet Based Hotspot Algorithm in Wireless Sensor Networks", Wireless Personal Communications, Springer, April 2019, (1.0 -IF)
- [8] Ji Bian, Cheng-Xiang Wang, Jie Huang, Yu Liu; Jian Sun, Minggao Zhang, El-Hadi M. Aggoune, "A 3D Wideband Non-Stationary Multi-Mobility Model for Vehicle-to-Vehicle MIMO Channels," in IEEE Access, vol. 7, pp. 32562-32577, 2019. (4.0 IF)
- [9] H Chang, J Bian, CX Wang, Z Bai, W Zhou, el-Hadi M. Aggoune, "A 3D Non-Stationary Wideband GBSM for Low-Altitude UAV-to-Ground V2V MIMO Channels", IEEE Access, Vol. 7, Page (s): 70719 – 70732. 2019. (4.0 IF).
- [10] Cheng-Xiang Wang, El-Hadi M. Aggoune, "Channel Modeling for Satellite Communication Channels at Q-Band in High Latitude", Accepted in IEEE ACCESS, 2019. (4.0 IF).
- [11] Zahoor Ahmed, Kamalrulnizam Abu Bakar, Muhammad Zahid Abbas, Muhammad Ayaz, El-Hadi M. Aggoune, "AUV Path Planning Based Efficient Routing for Underwater Linear Sensor Networks", Journal of Theoretical and Applied Information Technology 28th Feb. 2019. Vol.97. No 4
- [13] M. Ayaz, "Comparative Study of Indoor Navigation Systems for Autonomous Flight," TELKOMNIKA (Telecommunication Comput. Electron. Control., vol. 16, no. 1, p. 118, Feb. 2018.
- [14] M. Ayaz, M. Ammad-uddin, I. Baig, and el-H. M. Aggoune, "Wireless Sensor's Civil Applications, Prototypes, and Future Integration Possibilities: A Review," IEEE Sens. J., vol. 18, no. 1, pp. 4–30, Jan. 2018.
- [15] M. A. Uddin, A. Mansour, D. Le Jeune, M. Ayaz, and el-H. M. Aggoune, "UAV-Assisted Dynamic Clustering of Wireless Sensor Networks for Crop Health Monitoring," Sensors, vol. 18, no. 2, p. 555, Feb. 2018.
- [16] O. S. Badarneh, F. S. Almehmadi, I. S. Ansari, and X. Yang, "Wireless energy harvesting in cooperative decode-and-forward relaying networks over mixed generalized ??? and ??? fading channels" Trans. Emerg. Telecommun. Technol., vol. 29, no. 2, p. e3262, Feb. 2018.
- [17] M. Z. Abbas et al., "Key Factors Involved in Pipeline Monitoring Techniques Using Robots and WSNs: Comprehensive Survey," J. Pipeline Syst. Eng. Pract., vol. 9, no. 2, p. 4018001, May 2018.
- [18] M. Tariq, M. S. Abd Latiff, M. Ayaz, and M. Z. Abbas, "Beacon-based routing protocols for underwater acoustic sensor networks," Int. J. Commun. Syst., vol. 30, no. 18, p. e3375, Dec. 2017.
- [19] P. Patcharamaneepakorn et al., "Quadrature Space-Frequency Index Modulation for Energy-Efficient 5G Wireless Communication Systems," IEEE Trans. Commun., pp. 1–1, 2017.
- [20] M. Z. Abbas, K. Abu Bakar, M. Ayaz, and M. H. Mohamed, "An overview of routing techniques for road and pipeline monitoring in linear sensor networks," Springer's Wireless Networks, Feb. 2017.
- [21] M. H. M. M. Z. Abbas, K. Abu Bakar, Muhammad Ayaz, "Exploration of Linear Wireless Sensor Networks and Simulation Tools for Underwater Pipelines Monitoring Networks," J. Telecomm. Electron. Comput. Eng. (JTEC), vol. 9, no. 2–9, 2017.

- [22] M. Zahid Abbas, K. A. Bakar, Muhammad Ayaz, M. Hafiz Mohamed "Hop-by-Hop Dynamic Addressing Based Routing Protocol for Monitoring of long range Underwater Pipeline," *KSII Trans. Internet Inf. Syst.*, vol. 11, no. 2, Feb. 2017.
- [23] Tariq Ali, Muhammad Ayaz, Low Tang Jung, Umar Draz, Ahmad Shaf , " Upward and Diagonal Data Packet Forwarding in Underwater Communication "Volume.1 .Issue .2 June 2017.
- [24] Y. C. and A. W. Moeenuddin Tariq, Muhammad Shafie Abd Latiff, Muhammad Ayaz, "Pressure Sensor Based Reliable (PSBR) Routing Protocol for Underwater Acoustic Sensor Networks," *Ad Hoc Sens. Wirel. Networks*, vol. 32, no. 3–4, pp. 175–196, 2016.
- [25] P. Patcharamaneepakorn et al., "Spectral, Energy, and Economic Efficiency of 5G Multicell Massive MIMO Systems With Generalized Spatial Modulation," *IEEE Trans. Veh. Technol.*, vol. 65, no. 12, pp. 9715–9731, Dec. 2016.
- [26] M. Z. Abbas, K. Abu Bakar, M. Ayaz Arshad, M. Tayyab, and M. H. Mohamed, "Scalable Nodes Deployment Algorithm for the Monitoring of Underwater Pipeline," *TELKOMNIKA (Telecommunication Comput. Electron. Control.)*, vol. 14, no. 3, p. 1183, Sep. 2016.
- [27] M. M. Alwakeel, "Quadrature Spatial Modulation Performance Analysis over Rician Fading Channels," *J. Commun.*, vol. 11, 2016.
- [28] H. El Ghor and E. M. Aggoune, "Energy efficient scheduler of aperiodic jobs for real-time embedded systems," *Int. J. Autom. Comput.*, Jun. 2016.
- [29] Y. Fu, C.-X. Wang, A. Ghazal, el-H. M. Aggoune, and M. M. Alwakeel, "Performance Investigation of Spatial Modulation Systems Under Non-Stationary Wideband High-Speed Train Channel Models," *IEEE Trans. Wirel. Commun.*, vol. 15, no. 9, pp. 6163–6174, Sep. 2016.
- [30] Y. Fu et al., "BER Performance of Spatial Modulation Systems Under 3-D V2V MIMO Channel Models," *IEEE Trans. Veh. Technol.*, vol. 65, no. 7, pp. 5725–5730, Jul. 2016.
- [31] M. Abaza, R. Mesleh, A. Mansour, and E.-H. Aggoune, "Performance analysis of MISO multi-hop FSO links over log-normal channels with fog and beam divergence attenuations," *Opt. Commun.*, vol. 334, pp. 247–252, Jan. 2015.
- [32] M. Tariq, M. ShafieAbd Latiff, M. Ayaz, Y. Coulibaly, and N. Al-Areqi, "Distance based Reliable and Energy Efficient (DREE) Routing Protocol for Underwater Acoustic Sensor Networks," *J. Networks*, vol. 10, no. 5, May 2015.
- [33] S. Wu, C.-X. Wang, H. Haas, el-H. M. Aggoune, M. M. Alwakeel, and B. Ai, "A Non-Stationary Wideband Channel Model for Massive MIMO Communication Systems," *IEEE Trans. Wirel. Commun.*, vol. 14, no. 3, pp. 1434–1446, Mar. 2015.
- [34] R. Mesleh and S. S. Ikki, "Space shift keying with amplify-and-forward MIMO relaying," *Trans. Emerg. Telecommun. Technol.*, vol. 26, no. 4, pp. 520–531, Apr. 2015.
- [35] R. Mesleh and S. S. Ikki, "On the impact of imperfect channel knowledge on the performance of quadrature spatial modulation," in 2015 IEEE Wireless Communications and Networking Conference (WCNC), 2015, pp. 534–538.
- [36] R. Mesleh, S. S. Ikki, and H. M. Aggoune, "Quadrature Spatial Modulation," *IEEE Trans. Veh. Technol.*, vol. 64, no. 6, pp. 2738–2742, Jun. 2015.
- [37] Y. Yuan, C.-X. Wang, Y. He, M. M. Alwakeel, and el-H. M. Aggoune, "3D Wideband Non-Stationary Geometry-Based Stochastic Models for Non-Isotropic MIMO Vehicle-to-Vehicle Channels," *IEEE Trans. Wirel. Commun.*, vol. 14, no. 12, pp. 6883–6895, Dec. 2015.
- [38] M. M. Alwakeel, "Sensors and Sensor Network Applications," *J. Theor. Appl. Inf. Technol.*, vol. 82, no. 2, 2015.
- [39] V. A. Aalo, G. P. Efthymoglou, T. Soithong, M. Alwakeel, and S. Alwakeel, "Performance Analysis of Multi-Hop Amplify-and-Forward Relaying Systems in Rayleigh Fading Channels with a Poisson Interference Field," *IEEE Trans. Wirel. Commun.*, vol. 13, no. 1, pp. 24–35, Jan. 2014.
- [40] M. Slavik, I. Mahgoub, and M. M. Alwakeel, "Analysis and evaluation of distance-to-mean broadcast method for VANET," *J. King Saud Univ. - Comput. Inf. Sci.*, vol. 26, no. 1, pp. 153–160, Jan. 2014.
- [41] C.-X. Wang et al., "Cellular architecture and key technologies for 5G wireless communication networks," *IEEE Commun. Mag.*, vol. 52, no. 2, pp. 122–130, Feb. 2014.
- [42] S. Wu, C.-X. Wang, el-H. M. Aggoune, M. M. Alwakeel, and Y. He, "A Non-Stationary 3-D Wideband Twin-Cluster Model for 5G Massive MIMO Channels," *IEEE J. Sel. Areas Commun.*, vol. 32, no. 6, pp. 1207–1218, Jun. 2014.

- [43] V. A. Aalo, K. P. Peppas, G. P. Efthymoglou, M. M. Alwakeel and S. S. Alwakeel, "Serial Amplify-and-Forward Relay Transmission Systems in Nakagami- η Fading Channels With a Poisson Interference Field," in IEEE Transactions on Vehicular Technology, vol. 63, no. 5, pp. 2183–2196, Jun 2014.
- [44] A. Mansour, R. Mesleh, and el-H. M. Aggoune, "Blind estimation of statistical properties of non-stationary random variables," EURASIP J. Adv. Signal Process., vol. 2014, no. 1, p. 21, Dec. 2014.
- [45] M. Abaza, R. Mesleh, A. Mansour, and E.-H. M. Aggoune, "Diversity techniques for a free-space optical communication system in correlated log-normal channels," Opt. Eng., vol. 53, no. 1, p. 16102, Jan. 2014.
- [46] S. Alwakeel, K. P. Peppas, G. Efthymoglou, M. Alwakeel, and V. A. Aalo, "Evaluation of average bit error rate for wireless networks with alpha-stable interference," Electron. Lett., vol. 50, no. 1, pp. 47–49, Jan. 2014.
- [47] X. Cheng, C.-X. Wang, B. Ai, and H. Aggoune, "Envelope Level Crossing Rate and Average Fade Duration of Nonisotropic Vehicle-to-Vehicle Ricean Fading Channels," IEEE Trans. Intell. Transp. Syst., vol. 15, no. 1, pp. 62–72, Feb. 2014.
- [48] H. ElGhor and E.-H. M. Aggoune, "Real-time Operating System for Wireless Sensors powered by Renewable Energy Source," Int. J. Comput. Appl., vol. 81, no. 12, pp. 1–7, Nov. 2013.
- [49] N. Serafimovski et al., "Practical Implementation of Spatial Modulation," IEEE Trans. Veh. Technol., vol. 62, no. 9, pp. 4511–4523, Nov. 2013.
- [50] A. Younis, S. Sinanovic, M. Di Renzo, R. Mesleh, and H. Haas, "Generalised Sphere Decoding for Spatial Modulation," IEEE Trans. Commun., vol. 61, no. 7, pp. 2805–2815, Jul. 2013.
- [51] Baig, I., Jeoti, V., Ikram, A.A. et al. "PAPR reduction in mobile WiMAX: a novel DST precoding based random interleaved OFDMA uplink system", Wireless Networks (2014) 20: 1213. <https://doi.org/10.1007/s11276-013-0671-0>
- [52] R. Mesleh and S. S. Ikki, "Performance Analysis of Spatial Modulation with Multiple Decode and Forward Relays," IEEE Wirel. Commun. Lett., vol. 2, no. 4, pp. 423–426, Aug. 2013.
- [53] R. Mesleh, S. S. Ikki, O. Amin, and S. Boussakta, "Analysis and optimization of AF multi-hop over Nakagami-m fading channels in the presence of CCI," in 2013 IEEE 24th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC), pp. 2021–2026, 2013,
- [54] B. Abuhaija, "Performance analysis of LTE multiuser flat downlink power spectrum and radio resources scheduling," J. High Speed Networks, vol. 18, no. 3, pp. 173–184, 2012.
- [55] B. Abuhaija and K. Al-Begain, "Power Consumption versus Traffic and Deployment in CDMA Based Wireless Networks," in 2012 Third International Conference on Intelligent Systems Modelling and Simulation, pp. 645–651, 2012,
- [56] S. S. Ikki and R. Mesleh, "A General Framework for Performance Analysis of Space Shift Keying (SSK) Modulation in the Presence of Gaussian Imperfect Estimations," IEEE Commun. Lett., vol. 16, no. 2, pp. 228–230, Feb. 2012.
- [57] R. Mesleh, H. Elgala, and H. Haas, "LED Nonlinearity Mitigation Techniques in Optical Wireless OFDM Communication Systems," J. Opt. Commun. Netw., vol. 4, no. 11, p. 865, Nov. 2012.
- [58] R. Mesleh, S. S. Ikki, E.-H. M. Aggoune, and A. Mansour, "Performance analysis of space shift keying (SSK) modulation with multiple cooperative relays," EURASIP J. Adv. Signal Process., vol. 2012, no. 1, p. 201, Dec. 2012.
- [59] R. Mesleh, H. Elgala, and H. Haas, "On the Performance of Different OFDM Based Optical Wireless Communication Systems," J. Opt. Commun. Netw., vol. 3, no. 8, p. 620, Aug. 2011.
- [60] R. Mesleh, S. Ikki, and M. Alwakeel, "Performance Analysis of Space Shift Keying with Amplify and Forward Relaying," IEEE Commun. Lett., vol. 15, no. 12, pp. 1350–1352, Dec. 2011.