

## BOOKS

- [1] **R. H. Gohary**, *Efficient space-time signalling: Coherent and non-coherent scenarios*. Saarbrücken, Germany: VDM Verlag Dr. Müller, 2008.

## JOURNAL PAPERS

- [2] N. Haghighatpanah and **R. H. Gohary**, “Novel recovery algorithms for block sparse signals with known and unknown borders,” *IEEE Trans. Signal Processing*, June 2022. To appear.
- [3] S. Bameri and **R. H. Gohary**, “An error propagation free decode and forward scheme for channel-unaware two-way relay networks,” *IEEE Trans. Wireless Commun.*, May 2022. To appear.
- [4] Y. AlNagar, **R. H. Gohary**, S. Hosny, and A. A. El-Sherif, “Mobility-aware edge caching for minimizing latency in vehicular networks,” *IEEE Open J. Vehic. Tech.*, vol. 3, pp. 68–84, Feb. 2022.
- [5] P. Nещаastegaran, A. Banihashemi, and **R. H. Gohary**, “Error floor estimation of LDPC coded modulation systems using importance sampling,” *IEEE Trans. Commun.*, vol. 69, pp. 2784–2799, May 2021.
- [6] M. Vameghestahbanati, I. Marsland, **R. H. Gohary**, and H. Yanikomeroglu, “Hypercube-based SNR-adaptive multidimensional constellation design for uplink SCMA systems,” *IEEE Trans. Commun.*, vol. 69, pp. 121–132, Jan. 2021.
- [7] K. Attiah, K. Seddik, **R. H. Gohary**, and M. R. Rizk, “Differential unitary space-time constellations from spherical codes,” *IEEE Commun. Lett.*, pp. 1909–1913, Nov. 2020.
- [8] K. Almahrog and **R. H. Gohary**, “Maximum likelihood detection in the presence of non-Gaussian mobile jamming,” *IEEE Trans. Signal Processing*, vol. 68, pp. 5722–5735, Sept. 2020.
- [9] A. Alhosainy, K. Attiah, **R. H. Gohary**, and I. Lambadaris, “Statistical evaluation of the behavior of 5 GHz radio LAN devices,” *IEEE Trans. Instrument. Measur.*, vol. 69, pp. 1103–1117, Apr. 2020.
- [10] M. Vameghestahbanati, I. Marsland, **R. H. Gohary**, and H. Yanikomeroglu, “Multidimensional constellations for uplink SCMA systems—a comparative study,” *IEEE Commun. Surveys Tutorials*, no. 3, pp. 2169–2194, 2019.
- [11] S. Bameri, **R. H. Gohary**, and S. Talebi, “Perfect SI cancellation based on mode-switching for differential channel-unaware two-way relay networks,” *IEEE Trans. Wireless Commun.*, vol. 18, pp. 5269–5283, Nov. 2019.
- [12] M. Vameghestahbanati, I. Marsland, **R. H. Gohary**, and H. Yanikomeroglu, “A novel SD-based detection for generalized SCMA constellations,” *IEEE Trans. Veh. Technol.*, vol. 68, pp. 10278–10282, Oct. 2019.

- [13] **R. H. Gohary** and H. Yanikomeroglu, “Noncoherent MIMO signalling for future wireless systems: Approaches and challenges,” *IEEE Veh. Technol. Mag.*, vol. 14, pp. 80–88, Mar. 2019.
- [14] M. A. ElMossallamy, K. G. Seddik, and **R. H. Gohary**, “Multiresolution multicasting using Grassmannian codes and space shift keying,” *IEEE Trans. Veh. Technol.*, vol. 68, pp. 988–992, Jan. 2019.
- [15] Y. M. M. Fouad, **R. H. Gohary**, and H. Yanikomeroglu, “Chinese remainder theorem based sequence design for resource block assignment in relay-assisted Internet-of-Things communications,” *IEEE Trans. Wireless Commun.*, vol. 17, pp. 3401–3416, May 2018.
- [16] S. Bameri, S. Talebi, **R. H. Gohary**, and H. Yanikomeroglu, “A novel self-interference cancellation scheme for channel-unaware differential space-time two-way relay networks,” *IEEE Trans. Wireless Commun.*, vol. 17, pp. 1226–1241, Feb. 2018.
- [17] H. U. Sokun, E. Bedeer, **R. H. Gohary**, and H. Yanikomeroglu, “Optimization of discrete power and resource block allocation for achieving maximum energy efficiency in OFDMA networks,” *IEEE Access*, vol. 5, pp. 8648–8658, Dec. 2017.
- [18] R. Rashtchi, **R. H. Gohary**, and H. Yanikomeroglu, “Conjoint routing and resource allocation in OFDMA-based D2D wireless networks,” *IEEE Access*, vol. 6, pp. 18868–18882, Dec. 2018.
- [19] M. Vameghestahbanati, E. Bedeer, I. Marsland, **R. H. Gohary**, and H. Yanikomeroglu, “Enabling sphere decoding for SCMA,” *IEEE Commun. Lett.*, vol. 21, pp. 2750–2753, Dec. 2017.
- [20] H. U. Sokun, **R. H. Gohary**, and H. Yanikomeroglu, “A novel approach for QoS-aware joint user association, resource block and discrete power allocation in hetnets,” *IEEE Trans. Wireless Commun.*, vol. 16, pp. 7603–7618, Nov. 2017.
- [21] P. R. Balogun, I. D. Marsland, **R. H. Gohary**, and H. Yanikomeroglu, “Polar code design for irregular multidimensional constellations,” *IEEE Access*, vol. 5, pp. 21941–21953, Oct. 2017.
- [22] Y. M. M. Fouad, **R. H. Gohary**, and H. Yanikomeroglu, “Number-theoretic sequence design for uncoordinated autonomous multiple access in relay-assisted machine-to-machine communications,” *IEEE Trans. Veh. Technol.*, vol. 66, pp. 9018–9034, Oct. 2017.
- [23] K. G. Seddik, **R. H. Gohary**, M. T. Hussein, M. Shaqfeh, H. Alnuweiri, and H. Yanikomeroglu, “Multi-resolution broadcasting over the Grassmann and Stiefel manifolds,” *IEEE Trans. Wireless Commun.*, vol. 16, pp. 5296–5310, Aug. 2017.
- [24] G. Bulu, T. Ahmad, **R. H. Gohary**, C. Toker, and H. Yanikomeroglu, “Antenna port selection in a coordinated cloud radio access network,” *IEEE Commun. Lett.*, vol. 21, pp. 588–591, Mar. 2017.
- [25] J. Cabrejas, S. Roger, D. Calabuig, Y. M. M. Fouad, **R. H. Gohary**, J. F. Monserrat, and H. Yanikomeroglu, “Non-coherent open-loop MIMO communications over temporally-correlated channels,” *IEEE Access*, vol. 4, pp. 6161–6170, Oct. 2016.

- [26] R. Rashtchi, **R. H. Gohary**, and H. Yanikomeroglu, "Generalized cross-layer designs for generic half-duplex multicarrier wireless networks with frequency-reuse," *IEEE Trans. Wireless Commun.*, vol. 15, pp. 458–471, Jan. 2016.
- [27] D. Calabuig, **R. H. Gohary**, and H. Yanikomeroglu, "Optimum transmission through the multiple-antenna Gaussian multiple access channel," *IEEE Trans. Inf. Theory*, vol. 62, pp. 230–243, Jan. 2016.
- [28] K. Luo, **R. H. Gohary**, and H. Yanikomeroglu, "Exploiting the n-to-1 mapping in compress-and-forward relaying," *IEEE Trans. Inf. Theory*, vol. 62, pp. 290–308, Jan. 2016.
- [29] **R. H. Gohary** and H. Yanikomeroglu, "On the accuracy of the high SNR approximation of the differential entropy of signals in additive Gaussian noise: Real and complex cases," *IEEE Trans. Veh. Technol.*, vol. 64, pp. 4845–4850, Oct. 2015.
- [30] Y. M. M. Fouad, **R. H. Gohary**, H. Yanikomeroglu, J. Cabrejas, D. Calabuig, S. Roger, and J. F. Monserrat, "Time-frequency Grassmannian signalling for MIMO frequency-flat broadband systems," *IEEE Commun. Lett.*, vol. 19, pp. 475–478, Mar. 2015.
- [31] **R. H. Gohary** and H. Yanikomeroglu, "Grassmannian signalling achieves tight bounds on the ergodic high SNR capacity of the non-coherent MIMO relay channel," *IEEE Trans. Inf. Theory*, vol. 60, pp. 2480–2494, May 2014.
- [32] R. Rashtchi, **R. H. Gohary**, and H. Yanikomeroglu, "Routing, scheduling and power allocation in generic OFDMA wireless networks: Optimal design and efficiently computable bounds," *IEEE Trans. Wireless Commun.*, vol. 13, pp. 2034–2046, Apr. 2014.
- [33] **R. H. Gohary** and H. Yanikomeroglu, "Joint optimization of the transmit covariance and relay precoder in general Gaussian amplify-and-forward relay channels," *IEEE Trans. Inf. Theory*, vol. 59, pp. 5331–5351, Sept. 2013.
- [34] A. B. Sediq, **R. H. Gohary**, R. Schoenen, and H. Yanikomeroglu, "Optimal tradeoff between sum-rate efficiency and Jain's fairness index in resource allocation," *IEEE Trans. Wireless Commun.*, vol. 12, pp. 3496–3509, July 2013.
- [35] K. Luo, **R. H. Gohary**, and H. Yanikomeroglu, "Analysis of the generalized DF-CF for Gaussian relay channels: Decode or compress?," *IEEE Trans. Commun.*, vol. 61, pp. 1810–1821, May 2013.
- [36] **R. H. Gohary** and T. N. Davidson, "The capacity region of a product of two unmatched Gaussian broadcast channels with three particular messages and a common message," *IEEE Trans. Inf. Theory*, vol. 51, pp. 76–103, Jan. 2013.
- [37] **R. H. Gohary** and H. Yanikomeroglu, "Convergence of iterative water-filling with quantized feedback: A sufficient condition," *IEEE Trans. Signal Processing*, vol. 60, pp. 2688–2693, May 2012.
- [38] T. Ahmad, **R. H. Gohary**, H. Yanikomeroglu, S. Al-Ahmadi, and G. Boudreau, "Coordinated port selection and beam steering optimization in a multi-cell distributed antenna system using semidefinite relaxation," *IEEE Trans. Wireless Commun.*, vol. 11, pp. 1861–1871, May 2012.

- [39] Y. M. M. Fouad, **R. H. Gohary**, and H. Yanikomeroglu, "An autonomous resource block assignment scheme for OFDMA-based relay-assisted cellular networks," *IEEE Trans. Wireless Commun.*, vol. 11, pp. 637–647, Feb. 2012.
- [40] **R. H. Gohary** and T. J. Willink, "On LLR clipping in BICM-IDD non-coherent MIMO communications," *IEEE Commun. Lett.*, vol. 15, pp. 650–652, June 2011.
- [41] **R. H. Gohary** and T. N. Davidson, "An explicit expression for the Newton direction on the complex Grassmann manifold," *IEEE Trans. Signal Processing*, vol. 59, pp. 1303–1309, Mar. 2011.
- [42] G. W. Colman, **R. H. Gohary**, M. A. El-Azizy, T. N. Davidson, and T. J. Willink, "Quasi-Gray labelling for Grassmannian constellations," *IEEE Trans. Wireless Commun.*, vol. 10, pp. 626–636, Feb. 2011.
- [43] **R. H. Gohary** and T. J. Willink, "Joint routing and resource allocation via superposition coding for wireless data networks," *IEEE Trans. Signal Processing*, vol. 58, pp. 6387–6399, Dec. 2010.
- [44] P. A. W. Basl, **R. H. Gohary**, M. H. Bakr, and R. Mansour, "Modeling of electromagnetic responses using a robust multidimensional Cauchy interpolation technique," *IET Micr. Ant. Propagation*, vol. 4, pp. 1955–1964, Nov. 2010.
- [45] **R. H. Gohary** and T. J. Willink, "Robust IWFA for open-spectrum communications," *IEEE Trans. Signal Processing*, vol. 57, pp. 4964–4970, Dec. 2009.
- [46] **R. H. Gohary**, W. Mesbah, and T. N. Davidson, "Rate-optimal MIMO transmission with mean and covariance feedback at low SNR," *IEEE Trans. Veh. Technol.*, vol. 58, pp. 3802–3807, Sept. 2009.
- [47] **R. H. Gohary** and T. N. Davidson, "On power allocation for parallel Gaussian broadcast channels with common information," *EURASIP Wireless Commun. Netw.*, vol. 2009, Apr. 2009. Special issue on: Optimization techniques in wireless communications. Article ID 482520. doi:10.1155/2009/482520.
- [48] M. A. Swillam, **R. H. Gohary**, M. H. Bakr, and X. Li, "Efficient approach for sensitivity analysis of lossy and leaky structures using FDTD," *Electromagn. Waves Appl. Prog. Electromagn. Res. (PIER and JEMWA)*, vol. 94, pp. 197–212, 2009.
- [49] **R. H. Gohary**, Y. Huang, Z.-Q. Luo, and J.-S. Pang, "A generalized iterative water-filling algorithm for distributed power control in the presence of a jammer," *IEEE Trans. Signal Processing*, vol. 57, pp. 2660–2674, July 2009.
- [50] **R. H. Gohary** and T. N. Davidson, "Non-coherent MIMO communication: Grassmannian constellations and efficient detection," *IEEE Trans. Inf. Theory*, vol. 55, pp. 1176–1205, Mar. 2009.
- [51] **R. H. Gohary** and T. N. Davidson, "On rate-optimal signalling with mean and covariance feedback," *IEEE Trans. Wireless Commun.*, vol. 8, pp. 912–921, Feb. 2009.

- [52] M. A. El-Azizy, **R. H. Gohary**, and T. N. Davidson, “A BICM-IDD scheme for non-coherent MIMO communication,” *IEEE Trans. Wireless Commun.*, vol. 8, pp. 541–546, Feb. 2009.
- [53] **R. H. Gohary** and T. N. Davidson, “Design of linear dispersion codes: Some asymptotic guidelines and their implementation,” *IEEE Trans. Wireless Commun.*, vol. 4, pp. 2892–2906, Nov. 2005.
- [54] E. K. Al-Hussaini, H. M. Mourad, and **R. H. Gohary**, “Parallel interference cancellation employing RAKE receiver with selection diversity for multiuser asynchronous DS/CDMA detectors in multipath Rayleigh fading channels,” *Wireless Commun. Mobile Comp.*, vol. 4, pp. 405–420, Mar. 2002.

#### SUBMITTED JOURNAL PAPERS

- [55] K. Almahrog and **R. H. Gohary**, “Maximum likelihood detection in single-input double-output non-Gaussian barrage-jammed systems,” *IEEE Trans. Signal Processing*, Mar. 2022. Submitted. 30 pages. Manuscript ID: T-SP-29084-2022.
- [56] S. Elkamhawy, **R. H. Gohary**, I. Lambadaris, and A. R. Elahi, “On the optimization of reactively-loaded passive dipoles for beam steering for future wireless applications,” *IEEE Trans. Antennas. Propag.*, Jan. 2021. Submitted. 30 pages. Manuscript ID: AP2101-0161.

#### CONFERENCE PAPERS

- [57] S. Bameri and **R. H. Gohary**, “A novel differential decode and forward scheme for channel-unaware two-way relay networks,” in *Proc. IEEE Canadian. Wkshp. Inform. Theory (CWIT)*, (Ottawa), June 2022.
- [58] K. Almahrog and **R. H. Gohary**, “Optimal detection in the presence of Non-Gaussian jamming,” in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, (Toronto), June 2021. Fully Virtual.
- [59] A. Alhosainy, K. M. Attiah, **R. H. Gohary**, and I. Lambadaris, “Statistical evaluation of the behavior of 5 GHz radio LAN devices,” in *Proc. IEEE Int. Inst. Measure. Tech. Conf. (I2MTC)*, (Dubrovnik), May 2020. Presented online due to lockdown.
- [60] M. Vameghestahbanati, I. Marsland, **R. H. Gohary**, and H. Yanikomeroglu, “Hypercube-based multidimensional constellation design for uplink SCMA systems?,” in *Proc. IEEE Int. Conf. Commun. (ICC) Wkshp. Non-Orthogonal Multiple Access (NOMA) G*, (Ireland), June 2020. Presented online due to lockdown.
- [61] M. Vameghestahbanati, I. Marsland, **R. H. Gohary**, and H. Yanikomeroglu, “How does channel coding affect the design of uplink SCMA multidimensional constellations?,” in *Proc. IEEE Wireless Commun. Net. Conf. (WCNC)*, (Seoul), Apr. 2020. Presented online due to lockdown.
- [62] S. Bameri and **R. H. Gohary**, “Perfect SI cancellation based on mode-switching for differential channel-unaware TWRNs,” in *Proc. IEEE Wkshp. Signal Process. Adv. Wireless Commun. (SPAWC)*, (Cannes), July 2019.

- [63] A. Alhosainy, K. Attiah, **R. H. Gohary**, and I. Lambadaris, "Compliance evaluation of Wi-Fi devices," in *Proc. IEEE Wkshp. Signal Process. Adv. Wireless Commun. (SPAWC)*, (Cannes), July 2019.
- [64] S. Bameri and **R. H. Gohary**, "Performance analysis of a perfect SI cancellation scheme for differential channel-unaware TWRNs," in *Proc. IEEE Canadian. Wkshp. Inform. Theory (CWIT)*, (Hamilton, ON), June 2019.
- [65] A. Alhosainy, **R. H. Gohary**, and I. Lambadaris, "A soft metric for assessing the compliance of WLAN devices," in *Proc. IEEE Canadian. Wkshp. Inform. Theory (CWIT)*, (Hamilton, ON), June 2019.
- [66] M. Vameghestahbanati, I. Marsland, **R. H. Gohary**, and H. Yanikomeroglu, "Key performance indicators in multidimensional constellations for uplink SCMA systems," in *Proc. IEEE Canadian. Wkshp. Inform. Theory (CWIT)*, (Hamilton, ON), June 2019.
- [67] S. Bameri, **R. H. Gohary**, S. Talebi, and I. Lambadaris, "On the tradeoff between rate and pairwise error performance of Alamouti and  $SP(2)$  space-time block codes," in *Proc. IEEE Wkshp. Signal Process. Adv. Wireless Commun. (SPAWC)*, (Kalamata), June 2018.
- [68] H. Sokun, E. Bedeer, **R. H. Gohary**, and H. Yanikomeroglu, "Fairness-oriented resource allocation for energy efficiency optimization in uplink OFDMA networks," in *Proc. IEEE Wireless Commun. Net. Conf. (WCNC)*, (Barcelona), Apr. 2018.
- [69] K. M. Attiah, K. G. Seddik, and **R. H. Gohary**, "Hierarchical coherent and noncoherent communication," in *Asilomar Conf. Signals, Systems & Computers*, (Pacific Grove, California), Oct. 2017. Invited Paper.
- [70] M. Vameghestahbanati, I. Marsland, **R. H. Gohary**, and H. Yanikomeroglu, "Polar codes for SCMA systems," in *Proc. IEEE Vehic. Technol. Conf. (VTC)*, (Toronto), Sept. 2017.
- [71] S. Bameri, S. Talebi, **R. H. Gohary**, and H. Yanikomeroglu, "Self-interference cancellation for channel-unaware differential space-time two-way relay networks," in *Proc. IEEE Wkshp. Signal Process. Adv. Wireless Commun. (SPAWC)*, (Sapporo, Japan), July 2017.
- [72] K. M. Attiah, K. G. Seddik, **R. H. Gohary**, and H. Yanikomeroglu, "Non-coherent multi-layer constellations for unequal error protection," in *Proc. IEEE Int. Conf. Commun. (ICC)*, (Paris), May 2017.
- [73] A. Mamdouh, A. El-Keyi, M. Nafie, and **R. H. Gohary**, "Proactive location-based scheduling of delay-constrained traffic over fading channels," in *Proc. IEEE Vehic. Technol. Conf. (VTC)*, (Montréal), Sept. 2016.
- [74] K. M. Attiah, K. G. Seddik, **R. H. Gohary**, and H. Yanikomeroglu, "A systematic design approach for non-coherent Grassmannian constellations," in *Proc. IEEE Int. Symp. Inf. Theory (ISIT)*, (Barcelona), July 2016.
- [75] P. R. Balogun, I. Marsland, **R. H. Gohary**, and H. Yanikomeroglu, "Polar codes for noncoherent MIMO signalling," in *Proc. IEEE Int. Conf. Commun. (ICC)*, (Kuala Lumpur), May 2016.

- [76] M. T. Hussien, K. G. Seddik, **R. H. Gohary**, M. Shaqfeh, H. Alnuweiri, and H. Yanikomeroglu, "Space-time block codes over the Stiefel manifold," in *Proc. IEEE Glob. Commun. (GLOBECOM) Wkshp. Wireless Commun (WCS)*, (San Diego), Dec. 2015.
- [77] **R. H. Gohary** and H. Yanikomeroglu, "The ergodic high SNR capacity of the spatially-correlated non-coherent MIMO channel within an SNR-independent gap," in *Proc. IEEE Inf. Theory Wkshp (ITW)*, (Jeju Island), Oct. 2015.
- [78] K. Luo, **R. H. Gohary**, and H. Yanikomeroglu, "The capacity of a broadcast channel with Gaussian jamming and a friendly eavesdropper," in *Proc. IEEE Inf. Theory Wkshp (ITW)*, (Jeju Island), Oct. 2015.
- [79] H. Sokun, **R. H. Gohary**, and H. Yanikomeroglu, "QoS-guaranteed user association in HetNets via semidefinite relaxation," in *Proc. IEEE Vehic. Technol. Conf. (VTC)*, (Boston), Sept. 2015.
- [80] **R. H. Gohary**, R. Rashtchi, and H. Yanikomeroglu, "Optimal design and power allocation for multicarrier decode and forward relays," in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, (Brisbane, Australia), Apr. 2015.
- [81] D. Calabuig, **R. H. Gohary**, and H. Yanikomeroglu, "Optimization of a class of non-convex objectives on the Gaussian MIMO multiple access channel: Algorithm development and convergence analysis," in *Proc. IEEE Wkshp. Signal Process. Adv. Wireless Commun. (SPAWC)*, (Toronto), June 2014.
- [82] R. Rashtchi, **R. H. Gohary**, and H. Yanikomeroglu, "A cross-layer design for generic interference-limited multicarrier networks," in *Proc. IEEE Wkshp. Signal Process. Adv. Wireless Commun. (SPAWC)*, (Toronto), June 2014.
- [83] Y. M. M. Fouad, **R. H. Gohary**, and H. Yanikomeroglu, "An efficient greedy-based autonomous resource block assignment scheme for 5G cellular networks with self-organizing relaying terminals," in *Proc. IEEE Wkshp. Signal Process. Adv. Wireless Commun. (SPAWC)*, (Toronto), June 2014.
- [84] M. T. Hussien, K. G. Seddik, **R. H. Gohary**, M. Shaqfeh, H. Alnuweiri, and H. Yanikomeroglu, "Multi-resolution broadcasting over the Grassmann and Stiefel manifolds," in *Proc. IEEE Int. Symp. Inf. Theory (ISIT)*, (Honolulu), June 2014.
- [85] **R. H. Gohary** and H. Yanikomeroglu, "On the accuracy of the high SNR approximation of the differential entropy of signals in additive Gaussian noise," in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, (Florence), May 2014.
- [86] R. Rashtchi, **R. H. Gohary**, and H. Yanikomeroglu, "An efficient cross layer design in OFDMA-based wireless networks with channel reuse," in *Proc. IEEE Glob. Commun. Conf. (GLOBECOM)*, (Atlanta), Dec. 2013.
- [87] G. Bulu, T. Ahmad, **R. H. Gohary**, H. Yanikomeroglu, and C. Toker, "Generalized coordinated port selection in a multi-cell distributed antenna system using semidefinite relaxation," in *Proc. IEEE Int. Symp. Personal, Indoor and Mobile Radio Commun. (PIMRC)*, (London), Sept. 2013.

- [88] D. Calabuig, **R. H. Gohary**, and H. Yanikomeroglu, "Optimum transmission through the Gaussian multiple access channel," in *Proc. IEEE Int. Symp. Inf. Theory (ISIT)*, (Istanbul), July 2013.
- [89] R. Rashtchi, **R. H. Gohary**, and H. Yanikomeroglu, "Efficiently computable bounds on the rates achieved by an optimal cross layer design with binary scheduling in generic ad hoc OFDMA-based wireless networks," in *Proc. IEEE Glob. Commun. (GLOBECOM) Wkshp. Broadband Wireless Access (BWA)*, (California), Dec. 2012.
- [90] K. Luo, **R. H. Gohary**, and H. Yanikomeroglu, "A decoding procedure for compress-and-forward and quantize-and-forward relaying," in *Proc. Allerton Conf. Commun., Control, Comput.*, Oct. 2012.
- [91] **R. H. Gohary** and H. Yanikomeroglu, "Grassmannian signalling achieves the ergodic high SNR capacity of the non-coherent MIMO relay channel within an SNR-independent gap," in *Proc. IEEE Inf. Theory Wkshp (ITW)*, (Lauzanne), Sept. 2012.
- [92] A. B. Sediq, **R. H. Gohary**, and H. Yanikomeroglu, "Optimal tradeoff between efficiency and Jain's fairness index in resource allocation," in *Proc. IEEE Int. Symp. Personal, Indoor and Mobile Radio Commun. (PIMRC)*, (Sydney), pp. 577–583, Sept. 2012.
- [93] **R. H. Gohary** and H. Yanikomeroglu, "Joint optimization of the transmit covariance and the relay precoder in general Gaussian amplify-and-forward relay channels," in *Proc. IEEE Int. Symp. Inf. Theory (ISIT)*, (Cambridge, MA), pp. 418–422, July 2012.
- [94] **R. H. Gohary** and H. Yanikomeroglu, "A sufficient convergence condition for the quantized iterative water-filling algorithm," in *Proc. IEEE Wkshp. Signal Process. Adv. Wireless Commun. (SPAWC)*, (Çeşme, Turkey), pp. 224–228, June 2012.
- [95] T. Ahmad, **R. H. Gohary**, H. Yanikomeroglu, S. Al-Ahmadi, and G. Boudreau, "Coordinated max-min fair port selection in a multi-cell distributed antenna system using semidefinite relaxation," in *Proc. IEEE Int. Conf. Commun. (ICC)*, (Ottawa), pp. 3616–3620, June 2012.
- [96] R. Rashtchi, **R. H. Gohary**, and H. Yanikomeroglu, "Joint routing, scheduling and power allocation in OFDMA wireless ad hoc networks," in *Proc. IEEE Int. Conf. Commun. (ICC)*, (Ottawa), pp. 5483–5487, June 2012.
- [97] K. Luo, **R. H. Gohary**, and H. Yanikomeroglu, "On the generalization of decode-and-forward and compress-and-forward for Gaussian relay channels," in *Proc. IEEE Inf. Theory Wkshp (ITW)*, (Paraty, Brazil), pp. 623–627, Oct. 2011.
- [98] **R. H. Gohary** and H. Yanikomeroglu, "An emerging concept for 4G+ wireless cellular networks: Terminal relaying," in *Proc. IEEE Saudi Int. Elect., Commun. Photonics Conf.*, (Riyadh), Apr. 2011. Invited Paper.
- [99] Y. M. M. Fouad, **R. H. Gohary**, and H. Yanikomeroglu, "A resource block assignment scheme for OFDMA-based cellular networks with self-organizing terminal relays," in *Proc. IEEE Vehic. Technol. Conf. (VTC)*, (Budapest), May 2011.



- [100] **R. H. Gohary** and T. N. Davidson, "The capacity region of a product of two unmatched Gaussian broadcast channels with three particular messages and a common message," in *Proc. IEEE Int. Symp. Inf. Theory (ISIT)*, (Austin, Texas), pp. 560–564, June 2010.
- [101] M. A. Swillam, **R. H. Gohary**, M. H. Bakr, and X. Li, "Efficient modelling and sensitivity analysis of lossy structures using FDTD," in *Proc. IEEE Int. Symp. on Antenn. Propag. (AP-S)*, (Toronto), July 2010.
- [102] Y. Huang, **R. H. Gohary**, and Z.-Q. Luo, "Approaching user capacity in a multiuser communication system via harmonic mean-rate maximization," in *Proc. Int. Symp. Math. Program. (ISMP)*, (Chicago), Aug. 2009.
- [103] **R. H. Gohary**, G. K. Colman, M. A. El-Azizy, T. J. Willink, and T. N. Davidson, "Quasi-Gray labelling for Grassmannian constellations," in *Proc. IEEE Canadian. Wkshp. Inform. Theory (CWIT)*, (Ottawa), pp. 122–125, May 2009.
- [104] **R. H. Gohary** and T. N. Davidson, "On rate-optimal signalling for MIMO systems with mean and covariance feedback," in *Proc. IEEE Canadian. Wkshp. Inform. Theory (CWIT)*, (Ottawa), pp. 46–50, May 2009.
- [105] **R. H. Gohary**, Y. Huang, Z.-Q. Luo, and J.-S. Pang, "A generalized iterative water-filling algorithm for distributed power control in the presence of a jammer," in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, (Taipei), pp. 2373–2376, Apr. 2009.
- [106] Y. Huang, **R. H. Gohary**, and Z.-Q. Luo, "Approaching user capacity in a DSL system via harmonic mean-rate optimization," in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, (Taipei), pp. 2365–2368, Apr. 2009.
- [107] Y. Huang, **R. H. Gohary**, and Z.-Q. Luo, "Structured spectrum balancing in DSL multiuser communications," in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, (Taipei), pp. 2369–2372, Apr. 2009.
- [108] **R. H. Gohary**, W. Mesbah, and T. N. Davidson, "Rate-optimal MIMO transmission with mean and covariance feedback at low SNR," in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, (Las Vegas), Mar. 2008.
- [109] **R. H. Gohary**, M. A. El-Azizy, and T. N. Davidson, "A BICM-IDD scheme for non-coherent MIMO communication," in *Proc. IEEE Radio Wireless Symp. (RWS)*, 2008. Invited Paper.
- [110] **R. H. Gohary** and T. N. Davidson, "On the capacity region of parallel Gaussian broadcast channels with common information," in *Proc. IEEE Int. Symp. Inf. Theory (ISIT)*, (Nice, Fr), June 2007.
- [111] **R. H. Gohary** and T. N. Davidson, "On the design of Grassmannian constellations for non-coherent MIMO communication systems," in *Proc. IEEE Canadian. Wkshp. Inform. Theory (CWIT)*, (Edmonton, Alberta), pp. 114–117, June 2007.

- [112] M. A. El-Azizy, **R. H. Gohary**, and T. N. Davidson, “A BICM scheme with iterative demapping and decoding for non-coherent MIMO communication,” in *Proc. IEEE Int. Conf. Commun. (ICC)*, (Istanbul), pp. 4107–4112, June 2006.
- [113] **R. H. Gohary** and T. N. Davidson, “On efficient non-coherent detection of Grassmannian constellations,” in *Proc. IEEE Int. Symp. Inf. Theory (ISIT)*, (Adelaide), pp. 1676 – 1680, Sept. 2005.
- [114] **R. H. Gohary** and T. N. Davidson, “Non-coherent MIMO communication: Grassmannian constellations and efficient detection,” in *Proc. IEEE Int. Symp. Inf. Theory (ISIT)*, (Chicago), p. 65, June 2004.
- [115] **R. H. Gohary**, T. N. Davidson, and Z. Q. Luo, “An efficient design method for vector broadcast systems with common information,” in *Proc. IEEE Glob. Commun. Conf. (GLOBECOM)*, vol. 4, (San Fransisco), pp. 2010–2014, Dec. 2003.
- [116] **R. H. Gohary** and T. N. Davidson, “Design of linear dispersion codes: Some asymptotic guidelines and their implementation,” in *Proc. IEEE Wkshp. Signal Process. Adv. Wireless Commun. (SPAWC)*, (Rome), pp. 274–278, June 2003.
- [117] **R. H. Gohary**, H. M. Mourad, and E. K. Al-Hussaini, “An adaptive parallel interference cancellation system employing soft decisions for asynchronous DS/CDMA multipath fading channels,” in *Proc. IEEE Glob. Commun. Conf. (GLOBECOM)*, vol. 5, (San Antonio, Texas), pp. 3145–3147, Nov. 2001.
- [118] M. F. Fahmy, G. M. A. El-Raheem, **R. H. Gohary**, and A. A. Somayia, “A fast on-line signal separation algorithm,” in *IEEE Proc. Nat. Radio Sci. Conf.*, vol. 2, (Mansoura, Egypt), pp. 459–466, Mar. 2001.

## PATENTS

- [119] S. Bameri, K. Almahrog, A. El-Keyi, Y. Ahmed, and **R. H. Gohary**, Mar. 2022. Submitted. Assignee: Ericsson Canada Inc.
- [120] **R. H. Gohary** and M. S. Hosny, “Methods and systems for beamforming in wireless sensor networks,” Oct. 2021. Granted. Assignee: Maple Microsystems Inc.
- [121] S. Bameri, K. Almahrog, A. El-Keyi, **R. H. Gohary**, and I. Lambadaris, Jan. 2021. Submitted. Assignee: Ericsson Canada Inc.
- [122] I. Marsland, R. Balogun, **R. H. Gohary**, H. Yanikomeroğlu, and G. S. Ngoc Dao, “Multilevel polar code design for MIMO signalling,” Apr. 2020. Granted. Assignee: Huawei Technologies Canada Co., Ltd.
- [123] E. Skevakis, I. Lambadaris, H. Ahmad, A. Elahi, and **R. H. Gohary**, “Optimal design of a distributed MIMO network,” May 2018. Submitted. Assignee: Ericsson Canada Inc.
- [124] E. Skevakis, I. Lambadaris, H. Ahmad, A. Elahi, and **R. H. Gohary**, “Performance simulation of a distributed MIMO antenna system,” May 2018. Submitted. Assignee: Ericsson Canada Inc.

- [125] Y. M. M. Fouad, **R. H. Gohary**, H. Yanikomeroglu, and G. Senarath, "System and method for Grassmannian signaling in a broadband network," May 2017. Granted. Assignee: Huawei Technologies Canada Co., Ltd.
- [126] **R. H. Gohary**, H. Yanikomeroglu, and H. Nikopour, "System and method for multiple-input multiple-output communication," Aug. 2016. Granted. Assignee: Huawei Technologies Canada Co., Ltd.
- [127] A. B. Sediq, **R. H. Gohary**, H. Yanikomeroglu, G. Senarath, and H.-T. Cheng, "System and method for Jain scheduling in wireless networks," June 2016. Granted. Assignee: Huawei Technologies Canada Co., Ltd.
- [128] Y. M. M. Fouad, **R. H. Gohary**, H. Yanikomeroglu, and G. Senarath, "Systems and method for greedy-based autonomous resource block assignment scheme for cellular networks with self-organizing relaying terminals," Mar. 2016. Granted. Assignee: Huawei Technologies Canada Co., Ltd.