

Dr. Tadeusz A. Wysocki – Publications list 2004 to 2014

• Research Monographs

1. L.C.Tran, T.A.Wysocki, A.Mertins, and J.Seberry: “*Complex Orthogonal Space-Time Processing in Wireless Communications*,” Springer Verlag, New York, 2006.

• Book chapters, edited volumes and guest editorials

2. J. Lipman, M. Abolhasan and T. Wysocki: "Broadcasting and its Applications in Ad hoc Networks", To appear in *Handbook on Mobile Ad Hoc and Pervasive Communications*, American Scientific Publishers – accepted (August 2006).
3. M.Abolhasan, T.Wysocki: "Ad Hoc Networks: A Flexible and Robust data Communication," in Jie Wu (ed.): *Theoretical and Algorithmic Aspects of Sensor, Ad Hoc Wireless and Peer-to-Peer Networks*, CRC Press, 2005.
4. T.A.Wysocki, A.Dadej, and B.J.Wysocki: *Advanced Wired and Wireless Networks*, ", Series: Multimedia Systems and Applications , Vol. 26, Springer, New York, 2005.
5. T.A.Wysocki, B.Honary, and B.J.Wysocki: *Signal Processing for Telecommunications and Multimedia*, ", Series : Multimedia Systems and Applications, Vol. 27, Springer, New York, 2005.
6. M.Abolhasan, T.Wysocki: "Highly Scalable Ad-Hoc Routing strategies: Dynamic Zone Topology Routing Strategy" in T.A.Wysocki, A.Dadej, and B.J.Wysocki (eds.): *Advanced Wired and Wireless Networks*, Series : Multimedia Systems and Applications , Vol. 26, Springer, New York, 2005.
7. J.R.Seberry, L. C. Tran, Y.Wang, B.J.Wysocki, T.A.Wysocki, T.Xia, and Y.Zhao: "New Complex Orthogonal Space-Time Block Codes of Order Eight", in T.A.Wysocki, B.Honary, and B.J.Wysocki (eds.): *Signal Processing for Telecommunications and Multimedia*, Series : Multimedia Systems and Applications, Vol. 27, Springer, New York, 2005.
8. P.Conder, and T.A.Wysocki: "Increasing performance of SQRD decoding for LST systems," in T.A.Wysocki, B.Honary, and B.J.Wysocki (eds.): *Signal Processing for Telecommunications and Multimedia*, Series : Multimedia Systems and Applications, Vol. 27, Springer, New York, 2005.

• Peer-reviewed Journal Papers

9. T. M. Martin, B. J. Wysocki, J. P. Beyersdorf, T. A. Wysocki, A. K. Pannier, "Integrating Mitosis, Toxicity, and Transgene Expression in a Telecommunications Packet-Switched Network Model of Lipoplex-Mediated Gene Delivery" – *Biotechnology and Bioengineering* – accepted for publication (January 2014).
*
10. Tran, L.C.; Mertins, A.; Wysocki, T.A., "Unitary Differential Space-Time-Frequency Codes for MB-OFDM UWB Wireless Communications," *Wireless Communications, IEEE Transactions on* , vol.12, no.2, pp.862,876, February 2013.
11. B. J. Wysocki, T. M. Martin, T. A. Wysocki, A. K. Pannier, "Modeling nonviral gene delivery as a macro-to-nano communication system, *Nano Communication Networks*," Volume 4, Issue 1, March 2013, Pages 14-22
*
12. A.T.Sharp, T. A. Wysocki, A. K. Pannier, B. J. Wysocki, "A Novel Telecommunications-based Approach to HIV Modeling and Simulation," *Nano Communication Networks*, 3 (2), 129-137, 2012.
*
13. P. Vial, B. Wysocki, T. Wysocki, M. Ros, D. Stirling, "On the effect of Multiple Access Interference in a Space Time Spreading Time Hopping PPM UWB system," *Computers & Electrical Engineering*, Volume 38, Issue 4, July 2, 2012.
14. Jason Uher, Tadeusz A. Wysocki, and Beata J. Wysocki, "Review of Distributed Beamforming," *Journal of Telecommunications and Information Technology*, No 1, pp. 78-88, 2010.

- 15.S. Spence Adams, N. Karst, M.K. Murugan, and T. A. Wysocki, "On Transceiver Signal Linearization and the Decoding Delay of Maximum Rate Complex Orthogonal Space-Time Block Codes", *IEEE Transactions on Information Theory*, vol. 57, No. 6, June 2011, pp. 3618-3621
- 16.Shang, F., Xiong, A., Abolhasan, M. & Wysocki, T.: "An unequal clustering protocol for wireless sensor networks." *Journal of Computational Information Systems*, 6 (2), pp. 477-485, 2010.
- 17.T. A.Wysocki, B. J.Wysocki, and S. Spence Adams: "Correction to "The Theory of Quaternion Orthogonal Designs," *IEEE Transactions on Signal Processing*, Vol.: 57, No.8, Aug. 2009, pp. 3298 – 3298.
- 18.L.C.Tran, T.A.Wysocki, A.Mertins, J.Seberry and S.Spence-Adams, "Novel Constructions of Improved Square Complex Orthogonal Designs for Eight Transmit Antennas," *IEEE Trans. on Information Theory*, Vol. 55, No:10, pp 4439 – 4448, Oct. 2009.
- 19.K. Popovski, T. A. Wysocki, and B. J. Wysocki: "A Closed-Form Derivation of Self and Multi-User Interference for Time-Reversed UWB Communications", *Computers and Electrical Engineering Journal*, Vol. 36, Issue 4, July 2010, pp. 775-788.
- 20.Huda Al Amri, Mehran Abolhasan, and Tadeusz Wysocki: "Scalability of MANET Routing Protocols for Heterogeneous and Homogenous Networks", *Computers and Electrical Engineering Journal*, Vol. 36, Issue 4, July 2010, pp. 752-765.
- 21.Le Chung Tran, Alfred Mertins, and Tadeusz A. Wysocki: "Quasi-Orthogonal Space-Time-Frequency Codes in MB-OFDMUWB", *Computers and Electrical Engineering Journal*, 2010: pp.766-774.
- 22.Zhao, Y., Seberry, J. R., Xia, T., Wysocki, B. J. & Wysocki, T. A.: "Construction of amicable orthogonal designs of quaternions", *Australasian Journal of Combinatorics*, 44, (June 2009), 19-35.
- 23.CC Chiu, TC Tu, TA Wysocki, BJ Wysocki, HC Lu: "Cubic-spline expansion for electromagnetic imaging of buried multiple conductors," *Electromagnetics* 29 (4), 321-336, 2009.
- 24.F. Shang, M. Abolhasan, T. Wysocki: "An Energy-Efficient adaptive Clustering Algorithm for Wireless Sensor Networks," *International Journal of Information Acquisition*, 06, 117, 2009.
- 25.B. J.Wysocki, T. A.Wysocki, and S. Spence Adams: "On an Orthogonal Space-Time-Polarization Block Code," *Journal of Communications*, vol. 4, No. 1, February 2009, pp. 20-25.
- 26.S. Spence Adams, N. Karst. J. Pollack; J. Seberry; T. Wysocki: "Quaternion Orthogonal Designs from Complex Companion Designs", *Linear Algebra and Its Applications* – Volume 428, Issue 4, February 2008, pp. 1056-1071.
- 27.J. Seberry, Ken Finlayson, S.S. Adams, T. Wysocki, T.Xia and B.Wysocki: "The Theory of Orthogonal Designs over the Quaternion Domain", *IEEE Transactions on Signal Processing*, Vol.56, No 1, January 2008, pp.256-265.
- 28.K.Popovski, B.J. Wysocki, and T.A.Wysocki, "Modelling and Comparative Performance Analysis of a Time Reversed UWB System," *EURASIP Journal on Wireless Communications and Networking*, Special Issue on "Space-Time Channel Modeling for Wireless Communications", Volume 2007, Article ID 71610, 11 pages.
- 29.C.-H. Huang, C.-L. Liu, C.-C. Chiu, Y.-D. Wu, T. Wysocki, B.J. Wysocki: "Electromagnetic Transverse Electric-Wave Inverse Scattering of a Two-dimensional Dielectric Object by Genetic Algorithm," *Electromagnetics*, vol. 27, 5, June 2007, pp. 241-251.
- 30.C. H. Huang, H. C. Lu and C. C. Chiu, T. Wysocki and B. J Wysocki: "Image Reconstruction of Buried Multiple Conductors by Genetic Algorithms," *International Journal of Imaging Systems and Technology* Vol. 18 , pp. 276-281, Oct. 2008.
31. C.L. Liu, C.H. Huang, C.W. Tung, C.C. Chiu, T. Wysocki and B.J. Wysocki,"Frequency offset estimation in OFDM systems by Kalman filter" *International Journal of Modelling and Simulation*, October 2006.
- 32.S.Vafi, and T.A. Wysocki: "Weight distribution of turbo codes with convolutional interleavers," *IET Proceedings on Communications*, Vol.1, Issue 1, February 2007, pp.71-78.

33. M. Abolhasan, and T.A. Wysocki: "Dynamic Zone Topology Routing Protocol for Mobile Ad Hoc Networks, *European Transactions on Telecommunications*, Volume 18, Issue 4, Date: June 2007, pp. 351-368.
34. R. Ang, J. Seberry, and T.A. Wysocki: "Inequivalence of nega-cyclic ± 1 Matrices", *The Journal of Combinatorial Mathematics and Combinatorial Computing*, 56 (2006), 17-32.
35. Y. Zhao, J. Seberry, T. Xia, Y. Wang, B. J. Wysocki, T.A. Wysocki and L.C. Tran, "On amicable orthogonal designs of order 8 for complex space-time block codes," *The Australasian Journal of Combinatorics*, vol. 34, pp.137-144, 2006.
36. L.C. Tran, T.A. Wysocki, A. Mertins, and J. Seberry: "A Generalized Algorithm for the Generation of Correlated Rayleigh Fading Envelopes in Wireless Channels", *EURASIP Journal on Wireless Communications and Networking*, 5, pp. 801-815, 2005.
37. M. Abolhasan, T.A. Wysocki, and J. Lipman: "A New strategy to improve proactive route updates in mobile Ad Hoc networks," *EURASIP Journal on Wireless Communications and Networking*, 5, pp.828-937, 2005.
38. J. Seberry, B.J. Wysocki, and T.A. Wysocki: "On some applications of Hadamard matrices", *Metrika*, vol. 62, pp.221-239, 2005.
39. S. Spence, J. Seberry, T.A. Wysocki: "A construction technique for generalized complex orthogonal designs and applications to wireless communications", *Linear Algebra and Its Applications*, 405, pp.163-176, 2005.
40. Y. Wang, J. Seberry, Beata J. Wysocki, T.A. Wysocki, L.C. Tran, Y. Zhao and T. Xia: "An Exposure Property of Block Designs," *The Australasian Journal of Combinatorics*, vol.33, pp. 147-156, 2005.
41. M. Carroll, T.A. Wysocki: "Characterization of Indoor wireless Channel at 5 GHz U-NII Bands," *Elsevier Computers and Electrical Engineering Journal*, vol.30, pp.331-345, 2004.
42. L.C. Tran, J. Seberry, Y. Wang, B.J. Wysocki, T.A. Wysocki, T. Xia, and Y. Zhao: "Two new complex orthogonal space-time codes for 8 transmit antennas," *IEE Electronics Letters*, vol.40, No 1, pp.55-57, 2004.
43. M. Abolhasan, T. Wysocki, E. Dutkiewicz: "A Review of Routing Protocols for Mobile Ad Hoc Networks," *Elsevier ADHOC Networks Journal*, No 2 (2004), pp.1-22.

- **Peer-reviewed Papers Presented at Conferences and Published in Proceedings**

- * 43. B. J. Wysocki, T. M. Martin, T. A. Wysocki, A. K. Pannier, "Simulation Supported Estimation of End-to-End Transmission Parameters in Non-Viral Gene Delivery," *IEEE ICC 2014* – accepted.
- * 44. Sharp, A.T.; Raja, S.M.; Wysocki, B.J.; Wysocki, T.A., "Layered Communication Protocol for Macro to Nano-Scale Communication Systems," *Communications (ICC), 2010 IEEE International Conference on*, vol., no., pp.1,6, 23-27 May 2010.
45. AlAamri, H.; Abolhasan, M.; Wysocki, T.; Lipman, J., "On Optimising Route Discovery for Multi-interface and Power-Aware Nodes in Heterogeneous MANETs," *Wireless and Mobile Communications (ICWMC), 2010 6th International Conference on*, vol., no., pp.244,249, 20-25 Sept. 2010.
46. Uher, J.; Wysocki, T.A.; Wysocki, T.A., "The application of hybrid space-polarization block coding," *Wireless Telecommunications Symposium (WTS), 2010*, vol., no., pp.1,6, 21-23 April 2010.
47. AlAamri, H.; Abolhasan, M.; Wysocki, T., "Routing metric for multi-interface and power-aware nodes in heterogeneous MANETs," *Communications, 2009. APCC 2009. 15th Asia-Pacific Conference on*, vol., no., pp.372,375, 8-10 Oct. 2009.

48. Vafi, S.; Wysocki, T.; Abolhasan, M., "Serially Concatenated Turbo Codes," *Wireless Communications, Networking and Mobile Computing, 2009. WiCom '09. 5th International Conference on*, vol., no., pp.1,4, 24-26 Sept. 2009.
49. H. Al Amri, M. Abolhasan, T. Wysocki: "On Optimising Route Discovery in Absence of Previous Route Information in MANETs," *IEEE VTC'2009 – Spring*, April 2009, Barcelona, Spain.
50. Mahasukhon, P.; Sharif, H.; Hempel, M.; Ting Zhou; Wei Wang; Wysocki, T., "Performance Analysis of Multi-hop IEEE 802.11 DCF Backhaul Networks," *Networking and Communications, 2008. WIMOB '08. IEEE International Conference on Wireless and Mobile Computing*, , vol., no., pp.69,74, 12-14 Oct. 2008.
51. M. Abolhasan, B. Hagelstein, J. C.-P. Wang, D. Franklin, F. Safaei, and T. A Wysocki: "Development and Performance Evaluation of a Flexible, Low Cost MANET", *ICSPCS'2009*, Gold Coast, December 2008, Australia
52. Tran, L.C. Mertins, A. Wysocki, T.A. "Cooperative Communication in Space-Time-Frequency Coded MB-OFDM UWB", *IEEE VTC'2008-Fall*, 21–24 September 2008, Calgary, Canada.
53. K. Popovski, T. A. Wysocki, B. J. Wysocki: "Truncated Hyperbolic Mapping for Non-binary Turbo Coding in UWB", *IEEE PIMRC'2008*, Cannes, France, 15-18 September 2008.
54. K. Popovski, T. A. Wysocki, B. J. Wysocki: "Combined User Multiplexing and Data Modulation Through Non-Binary Turbo Codes for UWB," *IEEE WCNC'2008*, March 31 2008–April 3 2008 pp. 1038 – 1043.
55. P. Vial, B. Wysocki, T. Wysocki: "Non-optimal receiver for space time spreading across a Time Hopping over Ultra Wideband PPM," 3rd International Symposium on Communications, Control and Signal Processing, *ISCCSP 2008*, 12-14 March 2008 Page(s):990 – 993.
56. B.J.Wysocki, T.A.Wysocki, J.Seberry, S.Spence Adams, and H.Sharif: "A Simple Orthogonal Space-Time-Polarization Block Code," *IEEE VTC'2007-Fall*, 1-3 October 2007, Baltimore, USA.
57. B. Lee, B. Kim, J. Lee, S. Hwang, M. Song, T. Wysocki: "A Small Chip Area 12-B 300MS/s Current Steering CMOS D/A Converter Based on a Laminated-Step Layout Technique", *2007 European Conference on Circuit Theory and Design, ECCTD'2007*, Seville, Spain, 27-29 August 2007.
58. D.Lee, J.Song, J.Shin, S.Hwang, M. Song, T. Wysocki: "Design of a 1.8V 8-Bit 500MSPS Folding-Interpolation CMOS A/D Converter with a Folder Averaging Technique," *2007 European Conference on Circuit Theory and Design, ECCTD'2007*, Seville, Spain, 27-29 August 2007.
59. T.A Wysocki, J. Seberry, and B.J. Wysocki: "Space-Time-Polarization Block Codes from Quaternionic Orthogonal Designs," – invited presentation, *9th International Symposium on Communications Theory and Applications, ISCTA'2007*, Ambleside, UK, 16-20 July 2007.
60. B J Wysocki, T A Wysocki: "Modified CMA Algorithm for WiMax Applications", *12th Microcoll Conference*, Budapest, Hungary, 14-16 May 2007.
61. Y. Zhao, J. Seberry, B.J. Wysocki, and T.A. Wysocki: "Complex Orthogonal Spreading Sequences using Mutually Orthogonal Complementary Sets", *IEEE MIKON'2006*, Krakow, Poland, 22-24 May, 2006, CD-ROM,.
62. M. Pietrzyk, K. Popovski, T.A. Wysocki, B.J. Wysocki, and J. Weber: "Scarcely Populated UWB-IR Systems with Interleaved Coding-Modulation on Multipath Fading Channels", *IEEE International Conference on Ultra-Wideband, ICUB'2006*, Weltham, MA, 24-27 Sept.2006, CD-ROM.
63. M. Pietrzyk, K. Popovski, T.A. Wysocki, B.J. Wysocki, and J. Weber: "On the Performance of Scarcely Populated Coded UWB-IR Systems on Multipath Fading Channels", *27th Symposium on Information Theory in the Benelux*, 8-9 June 2006, Noordwijk, The Netherlands, pp. 235-242.
64. B.J.Wysocki, T.A.Wysocki, and J.Seberry: "Modeling Dual Polarized Wireless Fading Channels using Quaternions", *IEEE SympoTIC'06*, Bratislava, 24-27 June 2006, pp.68-71,.

65. M.M.Pietrzyk, K.Popovski, T.A.Wysocki, B.J.Wysocki, and J.H.Weber: "Multi-user UWB-IR Systems with Interleaved Coding-Modulation on Multipath Fading Channels", *IET Forum on Waveform Diversity and Design in Communications, Radar and Sonar*, 22 Nov. 2006, London, UK, pp.91-98.
66. K.Popovski, B.J.Wysocki, and T.A.Wysocki: "Performance Comparison of UWB Hopping Codes in a Multi-User Rich Scattering Environment", *IEEE VTC'2006 – CD*.
67. L.C.Tran, T.A.Wysocki, A.Mertins, J.Seberry and S.Spence-Adams: "Generalized Williamson and Wallis-Whiteman Constructions for Improved Square Order-8 CO STBCs," *IEEE PIMRC'2005*, Berlin, 11-14 September 2005, CD ROM.
68. M Abolhasan, T Wysocki, and J Lipman, "Performance Investigation on three-classes of MANET Routing Protocols" *IEEE Asia Pacific Communications Conference, APCC'2005*, Perth, WA, October 2005, CD-ROM.
69. S.Vafi, and T.A.Wysocki: "On the performance of turbo codes with convolutional interleavers," *IEEE Asia Pacific Communications Conference, APCC'2005*, Perth, WA, October 2005, CD-ROM.
70. K.Finlayson, J.Seberry, T.Wysocki, and T.Xia: "Orthogonal Designs with Quaternion Elements," *8th ISCTA*, Ambleside, July 2005.
71. J.Seberry, B.J.Wysocki, and T.A.Wysocki: "Performance Comparison of Sequences designed from the Hall Difference Set and Orthogonal Gold Sequences of Length 32", *8th ISCTA*, Ambleside, July 2005.
72. Le Tran Chung, Tadeusz A Wysocki, Alfred Mertins and Jennifer Seberry, "A generalized algorithm for the generation of correlated rayleigh fading envelopes," *IEEE WOWMOM'2005*, June 13-16, 2005, Taormina, Italy.
73. P.Conder, and T.A.Wysocki: "Asterism decoding for Turbo coded MIMO systems," *IEEE VTC'2005 Spring*, Stockholm May 2005 – CD ROM.
74. P.Conder, and T.A.Wysocki: "Combined Asterism and Sphere Decoder for Large Asymmetric MIMO Systems," *IEEE Sarnoff Symposium 2005 – CD ROM*.
75. S.Vafi, and T.A.Wysocki: "Performance of Convolutional Interleavers with Different Spacing Parameters in Turbo Codes," *6th Australian Communications Theory Workshop, AusCTW'2005*, Brisbane, 2-4 February 2005, pp.8-12.
76. L.C.Tran, T.A.Wysocki, A.Mertins, and J.Seberry: "A Generalized Algorithm for the Generation of Correlated Rayleigh Fading Envelopes in Radio Channels," *IEEE WMAN'05*, 2005 - CD ROM.
77. P.Vial, I.Raad, T.A.Wysocki, and B.J.Wysocki: "Space Time Spreading with Modified Walsh-Hadamard Sequences", *IEEE ISSSTA'04*, Sydney, Australia, 30 Aug. – 2 Sept. 2004, CD ROM.
78. L.C.Tran, T.A.Wysocki, J.Seberry, and A.Mertins: "On Multi-modulation Schemes to Increase the Rate of Space-Time Block Codes", *EUSIPCO 2004*, Vienna, Austria, September 6 to 10, 2004, Vol. 3, pp. 1841-1844.
79. S.Vafi, and T.A.Wysocki: "Computation of the free distance and low weight distribution of turbo codes with convolutional interleavers," *The 15th IEEE International Symposium on Personal, Indoor And Mobile Radio Communications, PIMRC'2004*, Barcelona, Spain, 5-8 Sept. 2004, CD ROM.
80. P.Conder, and T.A.Wysocki: "Asterism Decoding for Layered Space-Time Systems using 8PSK," *IEEE Sarnoff Symposium 2004 – CD ROM*.
81. J.Seberry, L.C.Tran, Y.Wang, B.J.Wysocki, T. A.Wysocki, Y.Zhao: "Orthogonal Spreading Sequences Constructed Using Hall's Difference Set," *IEEE SYMPOTIC'04*, Bratislava, Slovakia, 23-26 Oct. 2004, pp.82-85.
82. S.Vafi, T.Wysocki," Modified Convolutional Interleavers and Their Performance in Turbo Codes," *IEEE SYMPOTIC'04*, Bratislava, Slovakia, 23-26 Oct. 2004, pp.54-57.
83. J.Seberry, B.J.Wysocki, T.A.Wysocki, L.C.Tran, Y.Wang, T.Xia, and Y.Zhao: "Complex Orthogonal Sequences from Amicable Hadamard Matrices," *IEEE VTC'2004-Spring*, Milan, Italy, 17-19 May 2004 – CD ROM.

84. L.C.Tran, and T.A.Wysocki: "On Some Antenna Selection Techniques for Wireless Channels Utilizing Differential Space-Time Modulation," *IEEE Wireless Communications and Networking Conference WCNC'2004* – CD ROM.
85. M.Abolhasan, T.Wysocki: "GPS-base Route Discovery Algorithms for On-demand Routing Protocols in MANETs," *Wireless On-demand Network Systems (WONS 2004)*, R.Battiti, M.Conti, and R.L.Cigno (Eds.), L Springer, Lecture Notes in Computer Science, vol.2928, pp.144-157, 2004.