

LIST OF RESEARCH OUTPUTS OR CREATIVE WORKS

Refereed Publications – Journal Papers (accepted or submitted)

1. Y. Yang, Y. Zeng, **M. Yu**, and Q. Wu, “Synthesis of a New Class of Extracted Pole Filters without the Ideal Phase Shifters,” submitted, *IEEE Transactions on Microwave Theory and Techniques*, ppxxx-yyy, xx 2020

Refereed Publications – Journal Papers (published)

2. Y. Yang, **M. Yu**, Q. Wu, X. Yin and J. Yang, “A Fully Integrated Multiplexer Using Unified Extracted Pole Technique,” **Early Access**, *IEEE Transactions on Microwave Theory and Techniques*, ppxxx-yyy, xx 2020
3. Z. Cai, Y. Zhou, Z. Weng, L. Deng, Y. Luo, **M. Yu** and Y. Qi, “3D Printing Conformal K-band Lens Antenna for a Smart Parking Space Detection System,” **Early Access**, *IEEE Transactions on Instrumentation & Measurement*, xx(y): ppxxx-yyy, April 2020
4. S. Chen, **M. Yu**, D. Ding and Y. Wang “Electro-Thermal Analysis of Microwave Limiter Based on the Time-Domain Impulse Response Technology and Physical-Model-Based Semiconductor Solver,” *IEEE Transactions on Microwave Theory and Techniques*, 68(7) 2579-2589, July 2020
5. X. Chen, Y. He, **M. Yu**, Pommerenke and J. Fan, “Empirical Modelling of Contact Intermodulation Effect on Coaxial Connectors,” *IEEE Transactions on Instrumentation & Measurement*, 69(7): pp5091-5099, July2020
6. X. Chen, **M. Yu**; D. Pommerenke, “Electrical Intermodulation Tuner by Multiple Nonlinearities Superposition using Star Topology,” *IEEE Transactions on Instrumentation & Measurement*, 69(7): pp3951-3953, July 2020
7. C. Ding, X. Zhang and **M. Yu**, “Simple Dual-Polarized Filtering Antenna with Enhanced Bandwidth for Base Station Applications,” *IEEE Transactions on Antennas and Propagation*, 68(6): pp4354-4361, June 2020
8. Z. Cai, Y. Qi, Z. Weng, J. Wu, L. Liu, F. Yu, **M. Yu**, Q. Luo, J. Fan and Y. Zhou, “Small Anechoic Chamber Design Concept for On-line and On-site Passive Intermodulation Measurement,” *IEEE Transactions on Instrumentation & Measurement*, 69(6): 3377-3387, June 2020.
9. G. Pan, **M. Yu**, Yang Wu, L. Fu and H. Li, "Filters Inverse Modelling Using A Regularized Deep Neural Network Approach", *IEEE Microwave and Wireless Components Letters*, 30(5), pp457-460, May 2020.
10. G. Pan, L. Fu, Q. Chen, **M. Yu**, and M. Muresan, “Road safety performance function analysis with visual feature importance of deep neural nets,” *IEEE/CAA Journal of Automatica Sinica*, 7(3), pp735-744, March 2020.
11. **M. Yu** and Y. Yang, “Unified Extracted Pole Filter Synthesis: Bridging the Gap Between EM and Circuit Simulations,” *IEEE Microwave Magazine*, 21(3): pp84-95, Feb. 2020.

12. Z. Li, X. Tang, D. Lu and **M. Yu**, "Tunable Diplexer With Identical Passband and Constant Absolute Bandwidth," *IEEE Transactions on Microwave Theory and Techniques*, 68(2): pp721-731, Feb 2020
13. Y. Yang, **M. Yu**, Q. Wu and Y. Zeng, "Tunable Diplexer Design with Redundant coupling," *IEEE Transactions on Microwave Theory and Techniques*, 67(12): pp4976-4983, Dec 2019
14. L. Zhu, R. Mansour, and **M. Yu**, "Quasi-elliptic Waveguide Dual-band Bandpass Filters," *IEEE Transactions on Microwave Theory and Techniques*, 67(12): pp 5029-5037, Dec 2019
15. X. Chen, S. Yang, D. Pommerenke, Y. He, **M. Yu** and J. Fan, "Compact Intermodulation Modulator for Phase Reference in Passive Intermodulation Measurements," *IEEE Transactions on Instrumentation & Measurement*, 68(12): pp 4612-4614, Dec 2019.
16. Q. Wu, A. Zhang, Y. Yang, **M. Yu**, and X. Shi, "Computer Aided Tuning of Butler Matrices," *IEEE Transactions on Microwave Theory and Techniques*, 67(11): pp 4386-4393, Nov 2019
17. D. Lu, **M. Yu**, S Barker, Z. Li, W. Li and X. Tang, "Advanced Synthesis of Wide-Tuning-Range Frequency-Adaptive Bandpass Filter With Constant Absolute Bandwidth," *IEEE Transactions on Microwave Theory and Techniques*, 67(1): pp 4362-4375, Nov 2019.
18. Y. Wang, S. Li, and **M. Yu**, "Efficient Modelling of Ku-Band High Power Dielectric Resonator Filter with Applications of Neural Networks," *IEEE Transactions on Microwave Theory and Techniques*, 67(8): pp 3427-3425, Aug 2019.
19. P. Shen, Y. Qi, W. Yu, J. Drewniak, **M. Yu** and F. Li, "An RTS Based Near-Field MIMO Measurement Solution – A Step Toward 5G," *IEEE Transactions on Microwave Theory and Techniques*, 67(7): pp 2884 - 2893, July 2019
20. D. Lu, **M. Yu**, S Barker, M. Li and X. Tang, "A Simple and General Method for Filtering Power Divider with Frequency-Fixed and -Tunable Fully Canonical Filtering-Response Demonstrations," *IEEE Transactions on Microwave Theory and Techniques*, 67(5): pp 1812-1825, May 2019.
21. M. Yang, **M. Yu**, X. Yin and Q. Wu, "On the Singly Terminated and Complementary Networks," *IEEE Transactions on Microwave Theory and Techniques*, 67(3): pp 988-996, Feb 2019.
22. Y. Li, D. Wang, **M. Yu**, Y. He and W. Cui, "Experimental Verification of Multipactor Discharge Dynamics between Ferrite Dielectric and Metal," *IEEE Transactions on Electron Devices*, 65(10): pp 4592-4599, Oct 2018.
23. L. Zhu, R. Mansour, and **M. Yu**, "Triple-Band Waveguide and Dielectric Bandpass Filters," *IEEE Transactions on Microwave Theory and Techniques*, 66(9): pp 4057 - 4069, Sept 2018.
24. C. Zhang, J. Jin, W. Na, Q. Zhang and **M. Yu**, "Multivalued Neural Network Inverse Modelling and Applications to Microwave Filters," *IEEE Transactions on Microwave Theory and Techniques*, 66(8): pp3781-3797, Aug 2018
25. P. Laforge, R. Mansour, and **M. Yu**, "Reconfigurable MEMS-Based BPF for Manifold-Coupled-Superconducting Triplexers," *IEEE Transactions on Applied Superconductivity*, 28(6), June 2018,

26. Q. Wu, Y. Yang, Y. Wang, X. Shi and M. Yu, "Characteristic Impedance Control for Branch-Line Coupler Design," *IEEE Microwave and Wireless Components Letters*, 28(2), pp123-125, Jan. 2018.
27. L. Zhu, R. Mansour, and **M. Yu**, "Compact waveguide dual-band filters and diplexers," *IEEE Transactions on Microwave Theory and Techniques*, 65(5): pp1527-1533, May 2017.
28. Y. Yang, **M. Yu**, and Q. Wu, "Advanced synthesis technique for unified extracted pole filters," *IEEE Transactions on Microwave Theory and Techniques*, 64(12): pp4463-4472, Dec. 2016.
29. B. Yassini and **M. Yu**, "Ka-band dual mode super Q filters and multiplexers," *IEEE Transactions on Microwave Theory and Techniques*, 63(10): pp 3391-3397, Oct. 2015.
30. **M. Yu**, B. Yassini, B. Keats, and Y. Yang, "The sound the air makes: High-performance tunable filters based on air-cavity resonators," *IEEE Microwave Magazine*, 15(5): pp83-93, Jul.-Aug. 2014.
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32. Y. Wang, S. Li, and **M. Yu**. "Hybrid models for effective design and optimization of large-Scale multiplexing networks," *IEEE Transactions on Microwave Theory and Techniques*, 61(5): pp1839-1849, 2013.
33. A. Panariello, **M. Yu**, and C. Ernst, "Ku-Band high power dielectric resonator filters. *IEEE Transactions on Microwave Theory and Techniques*, 61(1): pp382-392, 2013.
34. B. Yassini **M. Yu**, and B. Keats, "A Ka-band fully tunable cavity filter". *IEEE Transactions on Microwave Theory and Techniques*, 60(12): pp4002-4012, 2012.
35. Y. Wang, **M. Yu**, H. Kabir, and Q-J Zhang, "Application of neural networks in space-mapping optimization of microwave filters. *International Journal of RF and Microwave Computer-Aided Engineering*, 22(2): pp159-166, 2012.
36. **M. Yu** and Y. Wang, "Synthesis and beyond". *IEEE Microwave Magazine*, 12(6): pp62-76, 2011.
37. M. Fahimnia, M. Mohammad-Taheri, Y. Wang, **M. Yu**, and S. Safavi-Naeini, "A 59-66 GHz highly stable millimeter wave amplifier in 130 nm CMOS Technology," *IEEE Microwave and Wireless Components Letters*, 21(6): pp320-322, 2011
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39. **M. Yu** and Y. Wang, "Enhanced microwave multiplexing network," *IEEE Transactions on Microwave Theory and Techniques*, 59(2): pp270-277, 2011
40. N. Zahirovic, R. Mansour, and **M. Yu**, "Scalar measurement-based algorithm for automated filter tuning of integrated Chebyshev tunable filters," *IEEE Transactions on Microwave Theory and Techniques*, 58(12): pp3749-3759, 2010
41. N. Zahirovic, R. Mansour, and **M. Yu**, "Piezoresistive position sensing for the detection of hysteresis and dielectric charging in CMOS-MEMS variable capacitors," *IEEE Transactions on Microwave Theory and Techniques*, 58(12): pp3961-3970, 2010.

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53. **M. Yu**, A. Panariello, M. Ismail and J. Zheng, (2008) "3-D electromagnetic simulators for passive devices", *IEEE Microwave Magazine*, Vol. 9, No. 6, Dec. 2008. pp51-61
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66. K. Wu, **M. Yu**, and A. Sivadas, "A Noval modal analysis of a circular-to-rectangular waveguide T-junction and Its application to design of circular waveguide dual mode filters," *IEEE Transactions on Microwave Theory and Techniques*, Vol. 50, No.2, Feb 2002, pp 456-473.
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Refereed Publications – Invited Plenary, Keynote and Conference Presentations

1. **M. Yu**, "Singly Terminated Network and New Circuit Approaches for Filters and Multiplexers", *48th European Microwave Conference (EuMC), EuMC2018, Workshop SM-02*, Sept 24, 2018, Madrid, Spain.
2. **M. Yu**, "Autonomous RF filter design will be soon a reality", *48th European Microwave Conference (EuMC), EuMC2018, Workshop WF-05*, Sept 28, 2018, Madrid, Spain.
3. **M. Yu**, "High Performance Microwave Technologies for the 5G and Internet of Space," Keynote at *2017 Workshop on Antenna Technologies Shenzhen University, Shenzhen, China, Dec. 21-23, 2017*
4. **M. Yu**, "Power Handling and Temperature Compensation Design for Passive RF/Microwave Devices," Keynote at *The 5th International Symposium on Electromagnetic Compatibility (EMC' Beijing)*, Oct 2017 Beijing, China
5. **M. Yu** and M. Ismail, "Advanced design of large microwave devices for space applications using space mapping optimization," *IEEE MTT-S International Microwave Symposium (IMS)*, June 2017, Honolulu, Hawaii, United States (to be presented).
6. **M. Yu**, "Advances in Manifold Multiplexer Design," *IEEE MTT-S International Microwave Symposium (IMS), Workshop on: Advances on Resonant and non-Resonant Power Combiners*, May 22, 2015, Phoenix, United States.
7. **M. Yu**, "Power handling and temperature compensation design for passive Microwave devices," *The 2nd IEEE MTT-S International Wireless Symposium (IWS)*, March 23, 2014, Xian, China.
8. **M. Yu**, "New development of Satcom passive hardware - filter and multiplexers," *The Next-Generation Satellite Communications & Applications (NGSCA) workshop*, Oct 17, 2013, Daejeon, Republic of Korea.
9. **M. Yu**, B. Yassin, A. Panariello, and G. Healy, "Latest development of passive components for advanced satellite systems," *International Workshop on Microwave Filters*, Oct 1, 2012, CNES, Toulouse, France.
10. **M. Yu** and Y. Wang, "Overview of the research and applications of the space-spectral domain approach (SSDA)," *IEEE MTT-S International Microwave Symposium (IMS)*, June 17, 2012, Montreal, Canada.
11. **M. Yu**, B. Yassin, A. Panariello, and G. Healy, "Passive components for advanced satellite systems," *IEEE MTT-S International Microwave Symposium (IMS), Focused Session on Space*, June 17, 2012, Montreal, Canada.
12. **M. Yu**, "Latest development of filter technology for space applications," *European Microwave Conference*, Oct 9, 2011, Manchester, United Kingdom.
13. **M. Yu**, "Power handling and temperature compensation design for passive microwave

- devices,” *40th European Microwave Conference (EuMC), Special Session EU-North America Experts Microwave Session-EuMC21*, Sept 28, 2010, Paris.
14. **M. Yu**, “Introduction to high power issues of microwave filter design and realization”, *IEEE MTT-S International Microwave Symposium (IMS)*, Workshop WMH, June 4, 2007, Honolulu, Hawaii, United States.
 15. **M. Yu** (2007), “Practical aspects of microwave filter design and realization,” *International Symposium on Signals, Systems, and Electronics*, Workshop MOWP-IV: Advances in Microwave Filter Technologies, July 30 - August 2, 2007, Montréal, Québec, Canada.
 16. **M. Yu**, "Miniaturization using adaptive pre-distortion and lossy circuit techniques," *IEEE MTT-S International Microwave Symposium (IMS)*, Monday Workshop WMG, June 2008 Atlanta, GA, United States.
 17. **M. Yu** (2005), “Introduction to practical aspects of microwave filter design and realization,” *IEEE MTT-S International Microwave Symposium (IMS)*, Workshop WMB: “Filter II: Practical Aspects of Microwave Filter Design and Realization”, June 2005, Long Beach, CA, United States.
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 19. **M. Yu**, (2003) “High power RF filters: design, analysis, and test,” *IEEE MTT-S International Microwave Symposium (IMS)*, Workshop: Components and Techniques for High Power RF Applications, June 8-13, 2003, Philadelphia, Pennsylvania, United States.
 20. **M. Yu** and W. Tang, "A Fully Automated filter Tuning Robots for Wireless Basestation Diplexers", Workshop: Computer Aided Filter Tuning, *IEEE International Microwave Symposium*, Philadelphia, Pennsylvania, June 8-13, 2003
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 22. **M. Yu** and A. Sivadas, “A simplified analysis for high power microwave bandpass filter structures,” *Workshop on Multipactor, RF and DC Corona and Passive Intermodulation in Space RF Hardware*, 4-5 Sept 2000, ESTEC, Noordwijk, The Netherlands, pp115-119.
 23. **M. Yu**, “Advances in filter synthesis and hardware design for wireless applications”, *Progress in Electromagnetics Research Symposium (PIERS)*, July 5-14, 2000, Boston MA, United States.

Refereed Publications – Conference Presentations

1. Y. Yang, Y. Zeng, **M. Yu** and Q. Wu “Synthesis of Extracted Pole Filters without the Extra Spikes,” *IEEE MTT-S International Microwave Symposium (IMS)*, June 2020, LA, CA, United States
2. L. Zhu, R. Mansour and **M. Yu**, “A Compact Waveguide Quasi-Elliptic Dual-Band Filter,”

- IEEE MTT-S International Microwave Symposium (IMS)*, June 2-7 2019, Boston, MA, United States
3. F. Zhu, Q. Wu, Y. Yang, X. Shi, **M. Yu**, "Spurious Suppression and Dispersion Compensation for Practical Dielectric Resonator Filter", *Radio Science and Wireless Technology Conference (CSQRWC) 2019 Cross Strait Quad-Regional*, pp. 1-3, 2019.
 4. Y. Yang, **M. Yu** and Q. Wu, "A Tunable Diplexer using Filters with Redundant Couplings," *IEEE MTT-S International Microwave Symposium (IMS)*, June 2-7 2019, Boston, MA, United States
 5. Q. Chen*, G. Pan*, J. Qiao and **M. Yu**, "Research on a Continuous Deep Belief Network for Feature Learning of Time Series Prediction," *The Chinese Control and Decision Conference*, Nanchang China, pp. 5977-5983, Sept 2019.
 6. J. Anderson, Y. Wang, W. Abdel-Wahab and **M. Yu**, "Application of Neural Network in the Modelling of Dielectric Resonator Antenna Arrays", *IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization for RF, Microwave, and Terahertz Applications (NEMO 2018)*, Reykjavik, Iceland, in August 8-10, 2018.
 7. S. Li, Y. Wang and **M. Yu**, "Modelling of Dielectric Resonator Filter for Multiplexer Design," *The 18th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM)*, July 2018, Waterloo ON, Canada.
 8. Y. Yang, Q. Wu, X. Shi and **M. Yu**, "Singly terminated network and contiguous multiplexer design," *IEEE MTT-S International Microwave Symposium (IMS)*, June 10-15 2018, Philadelphia, Pennsylvania, United States
 9. Q. Chen, G. PAN, M. Yu³ and J. Wang, "Unsupervised Feature Learning of Continuous DBN Based on Improved Dropout," *The 2nd 2018 Asian Conference on Artificial Intelligence Technology*, Chongqing, China, June 8-10, 2018
 10. Guangyuan Pan, Liping Fu, Lalita Thakali, Matthew Muresan, Ming Yu, "An Improved Deep Belief Network Model for Road Safety Analyses," *Transportation Research Board 97th Annual Meeting*, Washington DC, Jan 2018.
 11. L. Zhu, R. Mansour, and **M. Yu**, "Triple-band dielectric resonator bandpass filters," *IEEE MTT-S International Microwave Symposium (IMS)*, June 2017, Honolulu, Hawaii, United States.
 12. A. Panariello and **M. Yu**, "Fringing field effects for multipactor breakdown," *To appear in 9th International Workshop on Multipactor, Corona and Passive Intermodulation (MULCOPIM'17)*, Noordwijk, The Netherlands, April 2017.
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 14. Q. Wu, Y. Yang, Y. Wang, X. Shi and **M. Yu**, "General model for loaded stub branch line coupler," *IEEE MTT-S International Microwave Symposium (IMS)*, May 2016, San Francisco, United States.
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 16. S. Li, Y. Wang, and **M. Yu**, "Effective modeling of filters in the design and optimization of

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17. S. Li, Y. Wang, and **M. Yu**, "Modeling of waveguide dual-mode bandpass filters over wide frequency range," *IEEE MTT-S International Microwave Symposium (IMS)*, 17 May 2015, Phoenix, United States.
 18. B. Yassini and **M. Yu**, "A novel Ka-band dual mode super Q Cavity Filter," *IEEE MTT-S International Microwave Symposium (IMS)*, 1 Jun. 2014, Tampa, United States, (1–3).
 19. Q. Shi, **M. Yu**, J. Olney, S. Lundquist, and G. Healy G, "New Ka-band output dual multiplexer for multibeam satellite payloads," *The Joint 19th Ka and Broadband Communications, Navigation and Earth Observation Conference and 31st AIAA International Communications Satellite Systems Conference*, 1 Oct. 2013, Salerno, Italy.
 20. Q. Shi and **M. Yu**, "Ka-band dual multiplexer with a connected channel," *IEEE MTT-S International Microwave Symposium (IMS)*, 2 Jun. 2013, Seattle, United States, (1--3).
 21. S. Li, Y. Wang, J.A.S Jesuthasan, and **M. Yu**, "Application of neural networks to spurious mode modeling in the design of multiplexing networks," *IEEE MTT-S International Wireless Symposium (IMS)*, 4 Apr. 2013, Beijing, China.
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 23. M.A. Ismail, Y. Wang, and **M. Yu**, "Advanced design and optimization of large scale microwave devices," *IEEE MTT-S International Microwave Symposium (IMS)*, 17 Jun. 2012, Montreal, Canada.
 24. A. Panariello, **M. Yu**, and C. Ernest, "Ku-band high power dielectric resonator filters," *IEEE MTT-S International Microwave Symposium (IMS)*, 17 Jun. 2012, Montreal, Canada.
 25. B. Yassini, **M. Yu**, and B. Keats, "A Ka-band planar TE₀₁₁ mode cavity tunable filter using a mode splitter ring," *IEEE MTT-S International Microwave Symposium (IMS)*, 17 Jun. 2012, Montreal, Canada, (1--3).
 26. Y. Wang and **M. Yu**, "Performance analysis of the enhanced microwave multiplexing networks for applications in communications satellites," *IEEE MTT-S International Microwave Symposium (IMS)*, 5 Jun. 2011, Baltimore, United States.
 27. **M. Yu**, "Introduction to high power effects on passive microwave components," *IEEE MTT-S International Microwave Symposium, Workshop WMK: High Power Effects on Passive Microwave Components*, 5 Jun. 2011, Baltimore, United States.
 28. M. Fahimnia, M. Mohammad-Taheri, Y. Wang, **M. Yu**, and S. Safavi-Naeini, "An efficient method to design optimum millimeter wave low noise amplifier," *IEEE Antennas and Propagation Society International Symposium*, 11 Jul. 2010, Toronto, Canada.
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31. **M. Yu**, "Advances on lossy and predistorted filter design and applications," *Workshop on Microwave Filters, European Microwave Conference*, 29 Sep. 2009, Rome, Italy.
32. Y. Wang and **M. Yu**, "Inline realization of cascaded trisection and cascaded quadruplet in coaxial cavity filters," *39th European Microwave Conference*, 29 Sep. 2009, Rome, Italy, pp448-451.
33. N. Zahirovic, R.R. Mansour, M. Yu, "A three-step high-q variable mems capacitor with low actuation voltage," *39th European Microwave Conference*, 29 September 2009, Rome, Italy, pp1136-1139.
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