

# TAREQ Y. AL-NAFFOURI

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## EDUCATION

- Ph.D.** Electrical Engineering, *Stanford University, CA* 2005  
Research area: Multiple antenna receiver design for wireless communications
- M.S.** Electrical Engineering, *Georgia Institute of Technology* 1998  
Research area: Signal processing for communications
- M.S.** Electrical Engineering, *King Fahd University of Petroleum and Minerals* 1997  
Research area: Signal processing and electromagnetics
- B.Sc.** Mathematics & Electrical Engineering, *King Fahd University of Petroleum and Minerals* 1994

## EXPERIENCE

**Associate Professor, King Abdullah University of Science and Technology, Saudi Arabia** Feb. 2012-present

- Teaching Adaptive filtering, Digital Communications, Information Theory and Compressed Sensing.
- Carrying out research in adaptive and statistical signal processing, compressed sensing and its applications, wireless sensor networks, heterogeneous wireless networks, and network coding.

**Director of Office of Cooperation with King Abdullah University (KAUST)** Nov. 2008- Jul. 2012

- Established cooperation avenues between King Fahd University of Petroleum and Minerals (KFUPM) and King Abdullah University of Science and Technology (KAUST). Collaboration avenues include joint research projects, Faculty visits and sabbatical leaves, student exchange, joint student supervision, and shared-use of experimental and computational facilities.

**Associate Professor, King Fahd University of Petroleum and Minerals, Saudi Arabia** Oct. 2009-present

**Assistant Professor, King Fahd University of Petroleum and Minerals, Saudi Arabia** Apr. 2005-Oct. 2009

- Teaching Electric Circuit Analysis, Analog and Digital Communications, Probability and Random Variables, Communication Networks, Senior Project Design, Enhancing Study Skills, Digital Communications (graduate), Adaptive Filtering and Applications (graduate), Stochastic Processes (graduate), and Compressed Sensing (graduate).
- Carrying out research in adaptive filtering, channel estimation, iterative receiver design, multiuser communication, compressive sensing, and seismic signal processing.
- Serving on various academic committees.

**Fulbright Scholar, University of Southern California (USC), CA, Prof. Giuseppe Caire** Feb. 2008-Sep. 2008  
*California Institute of Technology, CA, Prof. Babak Hassibi*

- Devised techniques for impulsive noise estimation and cancelation in OFDM using compressive sensing.
- Presented a unified approach for evaluating the distribution of indefinite quadratic forms in Gaussian variables.

- Devised a blind technique for data recovery in OFDM transmission.

**Research Associate, California Institute of Technology, CA, Prof. Babak Hassibi**

Jan - Aug, 2005  
Summer, 2006

- Characterized scaling laws for the capacity of broadcast multi-user wireless channels that employ multiple antennas with spatial correlation.
- Characterized the scaling laws of group broadcast channels in the narrow-band and wideband cases. Scaling was applied to the number of users, antennas, and channels.

## TEACHING

11. EE 341: Information Theory (Spring 2015, 2016, 2018)
10. EE 242: Digital Communications and Coding (Spring 2006, Fall 2007, 2009, 2012-2017)
9. EE 392A: Special Topics in Signal Processing (Compressed Sensing) (Spring 2012-2013)
8. EE 662: Adaptive Filters and Applications (Spring 2006,2010,2012)
7. EE 315: Probability and Random Variables (Spring 2009)
6. EE 201: Electric Circuits (Fall 2005-2009)
5. EE 570: Stochastic Processes (Fall 2008)
4. EE 400: Communications Networks (Fall 2007)
3. PYP 003: Enhancing Study Skills (Fall 2005-2006; Spring 2006)
2. EE 370: Communications Engineering (Fall 2005-2006; Spring 2006)
1. EE 411: Capstone Project Design (Fall 2005; Spring 2005)

## GRADUATE STUDENTS & POSTDOCS

### M.S. Students

31. Lama Niyazi,  
KAUST, Jan 2018 - present,  
Research Topic: RMT-based Analysis of Semi-Supervised Learning.
30. Nojood Almayouf,  
KASUT, Sep 2017 - present,  
Research Topic: Analysis & Design of Molecular Communication Systems.
29. Khlod AlShaikh,  
KAUST, Sep 2016 - present,  
Research topic: Modelling & Analysis of Wireless Networks.
28. Bayan Aloqaybe,  
KAUST, Sept 2016 - present,  
Research Topic: Desing of UAV-based Wireless Networks.
27. Faisal Alhindi,  
KAUST, Aug 2016 - Jan 2018,  
Research Topic: Indoor Localization using Ultrasound,  
Current Position: Energy Analyst at Saudi ARAMCO.

26. Rabe Arshad,  
KFUPM, Jan 2015 - June 2017,  
Research Topic: User Mobility Management in Wireless Network,  
Current Position: PhD candidate at University of British Columbia, Canada.
25. Muzammil Behzad,  
KFUPM, Sep 2014 - Jan 2017,  
Research Topic: Image Denosing Using Collaborative Sparse Recovery,  
Current Position: Research Associate, COMSATS Institute of Information Technology, Pakistan.
24. Abdulrahman Alanazi,  
KAUST, Aug 2014 - Dec 2016,  
Research Topic: Image denosing & Deblurring,  
Current Position 1: Lecturer at King Saud University, Riyadh, Saudi Arabia,  
Current Position 2: PhD candidate at University of Illinois at UrbanaChampaign (UIUC), US.
23. Mohamed Suliman,  
KAUST, Aug 2014 - May 2017,  
Research Topic: Optimal Regularization of Linear Systems,  
Current Position: PhD candidate at Imperial College London, UK.
22. Ayed Alrashdi,  
KAUST, Jan 2015 - Nov 2016,  
Research Topic: Analysis and Optimal Tuning of Regularized Systems,  
Current Position 1: Lecturer at Hail University,  
Current Position 2: PhD candidate at KAUST.
21. Oussama Dhifallah,  
KAUST, Aug 2014 - Aug 2016,  
Research Topic: Beamforming for Band Radion Access Network,  
Current Position: PhD candidate at Harvard University.
20. Syed Awais Wahab Shah,  
KFUPM, Mar 2014 - Dec 2015,  
Research Topic: Blind Deconvolution of MIMO Systems,  
Current Position: Research Assistant, Qatar University.
19. Khalil Elkhilil,  
KAUST, Aug 2013 - Jan 2015,  
Research Topic: Feedback Reduction in Multiuser and Relay Networks,  
Current Position: PhD candidate at KAUST.
18. Shamael Al-Shuhail,  
KAUST, Jan 2014 - May 2015,  
Research Topic: Compressed Sensing for PAPR Reduction and NBI Cancellation,  
Current Position: Systems Analyst, Saudi Aramco.
17. Taha Bouchoucha,  
KAUST, Sep 2013 - Sep 2015,  
Research Topic: Waveform Design for MIMO Radar,  
Current Position: PhD candidate at University for California at Davis, California, US.
16. Ahmed Douik,  
KAUST, Sep 2013 - Dec 2015,  
Research Topic: Design and Optimization of (Distributed) Network Coding,  
Current Position: PhD candidate at California Institute of Technology.
15. Khaled Al Hujaili,  
KFUPM, Sep 2012 - Jan 2014  
Research Topic: Majorization Properties of Adaptive Filters,

Current Position-2: Lecturer, Taibah University, Al-Madinah, Saudi Arabia, Current Position-2: PhD Candidate at the Pennsylvania State University, State College, PA, USA.

14. Majeed Khaqan,  
KFUPM, Feb 2013 – May 2014,  
Research Topic: WiFi-based Indoor Localization with Minimal Fingerprinting,  
Current Position: PhD candidate at McMaster University, Hamilton, Canada.
13. Anum Ali,  
KFUPM, Sep 2012 - Jun 2014,  
Research Topic: Combating Impairments in OFDM Systems,  
Current Position: PhD candidate at University of Texas at Austin TX, USA.
12. Abdallah Moubayed,  
KAUST, Sep 2012 - May 2014,  
Research Topic: Collaborative Multi-Layer Network Coding for Hybrid Cellular Cognitive Radio Networks,  
Current position: PhD student, University of Western Ontario, Canada.
11. Abdullatif Al-Rabah,  
KAUST, May 2012 - May 2013,  
Research Topic: PAPR reduction in OFDM,  
Current Position: Saudi Telecom (STC) R&D, Riyadh, Saudi Arabia.
10. Hussain Shibli,  
KAUST, May 2012 - May 2013  
Research Topic: Compressed Sensing Based Approach to feedback reduction in broadcast and relay channels,  
Current Position: Researcher, King Abdullah City for Atomic and Renewable Energy, Riyadh, Saudi Arabia.
9. Syed Rizwanullah Hussaini,  
KFUPM, Feb 2009 - Jun 2012  
Research Topic: Semi-blind seismic deconvolution using orthogonal clustering,  
Current Position: Research Institute, KFUPM.
8. Damilola Sadiq Owodunni,  
KFUPM, Sep 2010 - Jun 2012,  
Research Topic: Compressed Sensing Based Techniques for Estimation and Cancellation of Transmitter's Nonlinear Distortions in OFDM Systems,  
Current Position: R&D Engineer, Fluor Kuwait, Kuwait.
7. Syed Faraz Ahmed,  
KFUPM, Sep 2008 - Feb 2011,  
Research Topic: Compressive Sensing Techniques for Channel Estimation and Deconvolution in UWB  
Current Position: PhD candidate at Hong Kong University of Science and Technology (HKUST).
6. Ebrahim Al-Safadi, KFUPM, Sep 2008 - May 2010  
Research Topic: Applications of compressive sensing for PAPR reduction in OFDM,  
Current Position: Sr. Data Scientist, Portland, Oregon Area, US.
5. Alaa Dahman,  
KFUPM, Feb 2008 - Jun 2010  
Research Topic: Low complexity blind equalization of SISO systems with general constellations  
Current Position: Project Manager, IBM, Saudi Arabia.
4. Babar Khan,  
KFUPM, Sep 2007 - Dec 2009,  
Research Topic: Application of random matrix theory in wireless communications and seismic signal processing  
Current Position: Saudi Aramco.

3. Mohammed E. Eltayeb,  
KFUPM, Sep 2006 - Dec 2009,  
Research Topic: Feedback Reduction in Multiuser & relay networks, Current Position: Assistant Professor,  
California State University Sacramento.
2. Muhammad Saqib Sohail, KFUPM, Sep 2006 - Jun 2008  
Research Topic: Adaptive Algorithms for Channel Estimation: Using a Priori Information for Optimal  
Design,  
Current Position: PhD candidate at Hong Kong University of Science and Technology (HKUST).
1. Ahmed Abdul Quadeer,  
KFUPM, Sep 2006 - Jun 2008,  
Research Topic: Semi-blind Channel and Data Recovery in OFDM,  
Current Position: PhD candidate at Hong Kong University of Science and Technology (HKUST).

## **Ph.D. Students**

15. Hui Chen,  
KAUST, Aug 2017 - present,  
Research Topic: Ultrasound-based Gesture Recognition.
14. Xing Liu,  
KAUST, Aug 2017 - present,  
Research Topic: Enhanced GPS-based Localization & Attitude Determination.
13. Osama Bushnaq,  
KAUST, Aug 2016 - present,  
Research Topic: Sensor Selection.
12. Yousef Shnaiwer,  
KFUPM, Sep 2015 - present,  
Research Topic: Network Coding for Caching Applications.
11. Ayed Alrashdi,  
KAUST, Jan 2015 – present,  
Research Topic: Performance Analyssi of Massive MIMO Systems,  
Current Position: Lecturer, Hail University.
10. Mohammed H. AlSharif,  
KAUST, Oct 2014 – present,  
Research Topic: Ultrasonic-based Localization.
9. Khalil Elkhailil,  
KAUST, Sep 2013 - present,  
Research Topic: RMT-based Analysis of Supervised Learning Algorithms.
8. Mostafa Mohamed Lotfy Emara,  
KFUPM, Sep 2014 - May 2018,  
Research Topic: Design of Caching Systems using Stochastic Geometry.
7. Hussain Ali,  
KFUPM, Apr 2013 - Mar 2018,  
Research Topic: Research Application of Compressed Sensing to MIMO Radar,  
Current Position: Research Engineer at Dhahran Techno Valley, KFUPM, Dhahran, Saudi Arabia.
6. Mohammad Tamim Alkhodary,  
KFUPM, June 2013 - May 2017,  
Research Topic: Structure-Based Bayesian Compressive Sensing for through the Wall radar imaging.  
Current Position: Postdoctoral Fellow at cole de technologie suprieure, Montreal, Canada.

5. Laila Afify,  
KAUST, Sep 2012 – Sep 2016  
Research Topic: Stochastic Geometry Modeling of the Uplink in Heterogeneous Networks,  
Current Position: Assistant Professor at Nile University, Egypt.
4. Alam Zaib,  
KFUPM, Sep 2011 - Dec 2015,  
Research Topic: Semi-blind Channel Estimation & Equalization in Massive MIMO,  
Current Position: Assistant Professor at COMSATS institute of Information Technology.
3. Furrakh Sana,  
KAUST, Sep 2012 - 2016,  
Research Topic: Tracking of Sparse Signals,  
Current Position: Postdoctoral fellow at Massachusetts General Hospital, Harvard Medical School, Boston, US.
2. Mudassir Masood,  
KAUST, Feb 2012 - Sep 2015,  
Research Topic: Distribution Agnostic Bayesian Estimation of Sparse Signals,  
Current Position: Assistant Professor at King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia.
1. Mohammed Eltayeb (co-advised),  
The University of Akron, Sep 2010 - Oct 2014  
Research Topic: Compressed Sensing for Feedback Reduction in Broadcast and Relay Networks,  
Current Position: Assistant Professor, California State University Sacramento, US.

## Postdocs

7. Tarig Ahmed,(Research Scientist)  
Sep 2012 – present.
6. Nasir Saeed,  
Jul 2017 – present.
5. Mohamed Saadeldin,  
Sep 2015 – present.
4. Sian-Jheng Lin  
Apr 2014 – Apr 2016.
3. Mohammed F. A. Ahmed,  
Apr 2012 – Feb 2014  
Current Position: Postdoctoral Fellow, École de technologie supérieure (ETS) in Montreal, Canada.
2. Hayssam Dahrouj,  
Apr 2014 – 2015.  
Current Position: Assistant professor, Effat University, Saudi Arabia.
1. Sameh Sorour, Sep 2012 – Aug 2013  
Current Position: Assistant Professor, University of Idaho, US.

## Visiting Students

25. Abdallah Moubayed,
24. Xing Liu,
23. Mostafa Mohamed Lotfy Emara,

22. Malik Almunif,  
Jul 2017 – Aug 2017,  
Taibah University, Madinah, Saudi Arabia.
21. Ali O Balubaid.
20. Abdulmajeed Aljaloud,  
May 2016 – Aug 2017.  
University of Illinois at Urbana-Champaign, USA
19. Somayah Shafa-amri,  
Sep 2016 – May 2017,
18. Lama Niyazi,  
Jan 2016 – May 2017,  
Effat University, Jeddah, Saudi Arabia.
17. Ratbek Zhapparov,  
Dec 2016 – Jan 2017.
16. Bayan Al Nahhas,  
Jun 2016 – Nov 2016.  
Effat University, Jeddah, Saudi Arabia.
15. Khalid Alzuhair,  
University of Washington, Seattle, USA,  
Jul 2016 – Sep 2016.
14. Yao GE,  
Apr 2016 – Oct 2016.
13. Faisal Alhindi,  
Jun 2015 – Aug 2015.
12. Khaled Alhujaili,
11. Majeed Khaqan,
10. Anum Ali,
9. Hui Chen,  
Jan 2015 – Nov 2015.  
Shrey Rakesh Maheshwary.
8. Ankit Udai,  
May 2014 – Jul 2014,  
Indian Institute of Technology, India.
7. Oussama Dhifallah,  
Feb 2014 – Jun 2014  
SupCom, Tunis, Tunisia.
6. Mohammad Tamim Alkhodary,  
Jun 2014 – Aug 2014,  
KFUPM, Saudi Arabia.
5. Syed Awais Wahab Shah,  
Jun 2014 – Aug 2014,  
KFUPM, KSA.  
Ankit Udai.

4. Ahmed Douik, SupCom,  
Feb 2013 – Jun 2013,  
Tunis, Tunisia.
3. Taha Bouchoucha,  
Feb 2013 – Jun 2013,  
SupCom, Tunis, Tunisia.
2. Faisal Al-theeb.
1. Nizar Ajeeb,  
Sep 2012 – Dec 2012,  
American University in Beirut, Lebanon.

## SERVICE

- Member of SPCOM TC (Signal Processing for Communications Technical Committee), (Jan 2017-present).
- Associate Editor for IEEE Transactions on Signal Processing (2013 - 2017).
- Executive member of IEEE Education Society, Gulf Section (2007-2012).
- IEEE KFUPM Student Branch Counselor (2007-2012).
- Reviewer for:
  - IEEE Transactions Signal Processing
  - IEEE Transactions on Communications
  - IEEE Transactions on Wireless Communications
  - IEEE Transactions on Selected Areas in Communications
  - IEEE Transactions on Vehicular Technology
  - IEEE Signal Processing Letters
  - IEEE Communication Letters
- TPC Member for the following conferences:
  - SPAWC 2013, 2017, 2018.
  - ICASSP 2015, 2017, 2018.
  - EUSIPCO, 2013, 2017, 2018.
  - WCNC 2013, 2016.
  - Globecom 2014, 2015.
  - ICC 2013, 2015.

## AWARDS

- Innovation Award Awarded by Prince Saud bin Nayef bin Abdulaziz, Governor of Eastern Province for having more than 10 issued patents. Dhahran, Saudi Arabia, 2016.
- Outstanding Research Award, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, 2016.
- Best paper award in SmallNets'2015 workshop organized in conjunction with *IEEE International Conference on Communications (ICC'2015)*, London, UK, 2015.

- Almarai Award for Innovative Research in Communications, 2009.
- IEEE Education Society Chapter Achievement Award (Presented to the Gulf Chapter Officers), 2008.
- Fulbright Scholar, Electrical Engineering Department, University of Southern California (USC), 2008.
- Best student paper award, IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing, 2001.
- Graduated with highest honors in Bachelor's degrees, 1994.

## THESES

2. T. Y. Al-Naffouri, "Adaptive algorithms for wireless channel estimation," Department of Electrical Engineering, Stanford University, Jan. 2005.
1. T. Y. Al-Naffouri, "Adaptive filtering using the least-mean mixed-norms algorithm and its application to echo cancellation," Department of Electrical Engineering, King Fahd University, Jul. 1997.

## BOOK CHAPTERS

3. Ahmed Douik, Hayssam Dahrouj, Oussama Dhifallah, Tareq Y. Al-Naffouri, and Mohamed-Slim Alouini, "Coordinated Scheduling in C-RANs" in *Cloud Radio Access Networks: Principles, Technologies, and Applications*, Cambridge University Press, 2017.
2. T. Y. Al-Naffouri, M. S. Saqib, and A. A. Quadeer, "Iterative forward-backward Kalman filtering for data recovery in (multiuser) OFDM communications," *Applications of Kalman Filters*, Intech, May 2010.
1. A. H. Sayed, T. Y. Al-Naffouri, and Vitor H. Nascimento "Energy conservation in adaptive filtering," *Nonlinear Signal and Image processing: Theory, Methods, and Applications*, CRC Press, 2003.

## JOURNAL PUBLICATIONS

91. O. Dhif-Allah, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Distributed Robust Power Minimization for the Downlink of Multi-Cloud Radio Access Networks", in *IEEE Transactions on Green Communications and Networking*, vol.2, pp.327-335, Jun. 2018.
90. Mohamed A. Suliman, Tarig Ballal, and **T. Y. Al-Naffouri**, "Perturbation-Based Regularization for Signal Estimation in Linear Discrete Ill-Posed Problems", in *Signal Processing*, Feb. 2018.
89. M. E. Eltayeb, **T. Y. Al-Naffouri**, and R. W. Heath, "Compressive Sensing for Millimeter Wave Antenna Array Diagnosis", in *IEEE Transactions on Communications*, pp.1-1, Jan. 2018.
88. M. Emara, H. El Sawy, S. Sorour, S. Al-Ghadhban, M. S. Alouini, and **T. Y. Al-Naffouri**, "Optimal Caching in 5G Networks with Opportunistic Spectrum Access", in *IEEE Transactions on Wireless Communications*, pp.1-1, Jan. 2018.
87. K. Elkhailil, A. Kammoun, **T. Y. Al-Naffouri**, and M. S. Alouini, "Measurement Selection: A Random Matrix Theory Approach", in *IEEE Transactions on Wireless Communications*, pp.1-1, Jan. 2018.
86. A. Douik, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Distributed Hybrid Scheduling in Multi-Cloud Networks Using Conflict Graphs", in *IEEE Transactions on Communications*, vol.66, pp.209-224, Jan. 2018.
85. Nasir Saeed, Abdulkadir Celik, **T. Y. Al-Naffouri**, and Mohamed-Slim Alouini, "Energy Harvesting Hybrid Acoustic-Optical Underwater Wireless Sensor Networks Localization", in *MDPI Sensors Journal*, vol.18, pp.51, Dec. 2017.
84. M. A. Suliman, A. M. Alrashdi, T. Ballal, and **T. Y. Al-Naffouri**, "SNR Estimation in Linear Systems With Gaussian Matrices", in *IEEE Signal Processing Letters*, vol.24, pp.1867-1871, Dec. 2017.

83. R. Arshad, H. Elsawy, S. Sorour, M. S. Alouini, and **T. Y. Al-Naffouri**, "Mobility-Aware User Association in Uplink Cellular Networks", in *IEEE Communications Letters*, vol.21, pp.2452-2455, Nov. 2017.
82. A. Douik, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Low-Complexity Scheduling and Power Adaptation for Coordinated Cloud-Radio Access Networks", in *IEEE Communications Letters*, vol.21, pp.2298-2301, Oct. 2017.
81. A. Douik, H. Dahrouj, **T. Y. Al-Naffouri**, and M.-S. Alouini, "Distributed Scheduling/Signal-Level Coordination in Multi-Cloud Radio-Access Networks", in *IEEE Transactions on Communications*, Sep. 2017.
80. M. E. Eltayeb, J. Choi, **T. Y. Al-Naffouri**, and R. W. Heath, "Enhancing Secrecy With Multiantenna Transmission in Millimeter Wave Vehicular Communication Systems", in *IEEE Transactions on Vehicular Technology*, vol.66, pp.8139-8151, Sep. 2017.
79. K. Elkhilil, A. Kammoun, **T. Y. Al-Naffouri**, and M. S. Alouini, "Numerically Stable Evaluation of Moments of Random Gram Matrices With Applications", in *IEEE Signal Processing Letters*, vol.24, pp.1353-1357, Sep. 2017.
78. A. Douik, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "Instantly Decodable Network Coding: From Centralized to Device-to-Device Communications", in *IEEE Communications Surveys Tutorials*, vol.19, pp.1201-1224, Sep. 2017.
77. A. Chaaban, O. M. S. Al-Ebraheemy, **T. Y. Al-Naffouri**, and M. S. Alouini, "Capacity Bounds for the Gaussian IM-DD Optical Multiple-Access Channel", in *IEEE Transactions on Wireless Communications*, vol.16, pp.3328-3340, May. 2017.
76. O. Dhifallah, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Decentralized SINR Balancing in Cognitive Radio Networks", in *IEEE Transactions on Vehicular Technology*, vol.66, pp.3491-3496, Apr. 2017.
75. A. Douik, S. Sorour, H. Tembine, **T. Y. Al-Naffouri**, and M. S. Alouini, "A Game-Theoretic Framework for Network Coding Based Device-to-Device Communications", in *IEEE Transactions on Mobile Computing*, vol.16, pp.901-917, Apr. 2017.
74. T. Bouchoucha, S. Ahmed, **T. Y. Al-Naffouri**, and M. S. Alouini, "DFT-Based Closed-Form Covariance Matrix and Direct Waveforms Design for MIMO Radar to Achieve Desired Beampatterns", in *IEEE Transactions on Signal Processing*, vol.65, pp.2104-2113, Apr. 2017.
73. R. Arshad, H. ElSawy, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "Velocity-Aware Handover Management in Two-Tier Cellular Networks", in *IEEE Transactions on Wireless Communications*, vol.16, pp.1851-1867, Mar. 2017.
72. A. Douik, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "Decoding-Delay-Controlled Completion Time Reduction in Instantly Decodable Network Coding", in *IEEE Transactions on Vehicular Technology*, vol.66, pp.2756-2770, Mar. 2017.
71. Shnaiwer, Y, Sorour, S, Sadeghi, P, Aboutorab, N, and **T. Y. Al-Naffouri**, "Network-Coded Macrocell Offloading in Femtocaching-Assisted Cellular Networks", in *IEEE Transactions on Vehicular Technology*, pp.1, Feb. 2017.
70. Khalil Elkhilil, Abla Kammoun, **T. Y. Al-Naffouri**, and Mohamed-Slim Alouini, "Fluctuations of the SNR at the output of the MVDR with regularized Tyler estimators", in *Signal Processing*, vol.135, pp.1 - 8, Feb. 2017.
69. A. Douik, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "Rate Aware Instantly Decodable Network Codes", in *IEEE Transactions on Wireless Communications*, vol.16, pp.998-1011, Feb. 2017.
68. S. A. W. Shah, K. Abed-Meraim, and **T. Y. Al-Naffouri**, "Blind Source Separation Algorithms Using Hyperbolic and Givens Rotations for High-Order QAM Constellations", in *IEEE Transactions on Signal Processing*, pp.1-1, Jan. 2017.

67. T. Ballal, M. A. Suliman, and **T. Y. Al-Naffouri**, “Bounded Perturbation Regularization for Linear Least Squares Estimation”, in *IEEE Access*, vol.5, pp.27551-27562, Jan. 2017.
66. A. K. Hassan, M. Moinuddin, U. M. Al-Saggaf, and **T. Y. Al-Naffouri**, “Performance Analysis of Beamforming in MU-MIMO Systems for Rayleigh Fading Channels”, in *IEEE Access*, vol.5, pp.3709-3720, Jan. 2017.
65. H. Ghazzai, T. Bouchoucha, A. Alsharoa, E. Yaacoub, M. S. Alouini, and **T. Y. Al-Naffouri**, “Transmit Power Minimization and Base Station Planning for High-Speed Trains With Multiple Moving Relays in OFDMA Systems”, in *IEEE Transactions on Vehicular Technology*, vol.66, pp.175-187, Jan. 2017.
64. Douik, Ahmed, Sorour, Sameh, **T. Y. Al-Naffouri**, and Alouini, Mohamed-Slim, “Instantly decodable network coding for real-time device-to-device communications”, in *EURASIP Journal on Advances in Signal Processing*, vol.2016, pp.1, Dec. 2016.
63. M. Suliman, T. Ballal, A. Kammoun, and **T. Y. Al-Naffouri**, “Constrained Perturbation Regularization Approach for Signal Estimation Using Random Matrix Theory”, in *IEEE Signal Processing Letters*, vol.23, pp.1727-1731, Dec. 2016.
62. A. Ali, M. Masood, M. S. Sohail, S. N. Al-Ghadhban, and **T. Y. Al-Naffouri**, “Narrowband Interference Mitigation in SC-FDMA Using Bayesian Sparse Recovery”, in *IEEE Transactions on Signal Processing*, vol.64, pp.6471-6484, Dec. 2016.
61. L. H. Afify, H. ElSawy, **T. Y. Al-Naffouri**, and M. S. Alouini, “A Unified Stochastic Geometry Model for MIMO Cellular Networks With Retransmissions”, in *IEEE Transactions on Wireless Communications*, vol.15, pp.8595-8609, Dec. 2016.
60. A. Zaib, M. Masood, A. Ali, W. Xu, and **T. Y. Al-Naffouri**, “Distributed Channel Estimation and Pilot Contamination Analysis for Massive MIMO-OFDM Systems”, in *IEEE Transactions on Communications*, vol.64, pp.4607-4621, Nov. 2016.
59. S. J. Lin, **T. Y. Al-Naffouri**, Y. S. Han, and W. H. Chung, “Novel Polynomial Basis With Fast Fourier Transform and Its Application to Reed-Solomon Erasure Codes”, in *IEEE Transactions on Information Theory*, vol.62, pp.6284-6299, Nov. 2016.
58. K. Majeed, S. Sorour, **T. Y. Al-Naffouri**, and S. Valaee, “Indoor Localization and Radio Map Estimation Using Unsupervised Manifold Alignment with Geometry Perturbation”, in *IEEE Transactions on Mobile Computing*, vol.15, pp.2794-2808, Nov. 2016.
57. I. B. Atitallah, A. Kammoun, M. S. Alouini, and **T. Y. Al-Naffouri**, “Optimal Design of Large Dimensional Adaptive Subspace Detectors”, in *IEEE Transactions on Signal Processing*, vol.64, pp.4922-4935, Oct. 2016.
56. S. J. Lin, **T. Y. Al-Naffouri**, and Y. S. Han, “FFT Algorithm for Binary Extension Finite Fields and Its Application to Reed-Solomon Codes”, in *IEEE Transactions on Information Theory*, vol.62, pp.5343-5358, Oct. 2016.
55. F. Sana, F. Ravanelli, **T. Y. Al-Naffouri**, and I. Hoteit, “A Sparse Bayesian Imaging Technique for Efficient Recovery of Reservoir Channels With Time-Lapse Seismic Measurements”, in *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol.9, pp.2242-2254, Jun. 2016.
54. A. Douik, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, “Hybrid Radio/Free-Space Optical Design for Next Generation Backhaul Systems”, in *IEEE Transactions on Communications*, vol.64, pp.2563-2577, Jun. 2016.
53. K. Elkhailil, A. Kammoun, **T. Y. Al-Naffouri**, and M. S. Alouini, “Analytical Derivation of the Inverse Moments of One-Sided Correlated Gram Matrices With Applications”, in *IEEE Transactions on Signal Processing*, vol.64, pp.2624-2635, May. 2016.
52. F. Sana, K. Katterbauer, **T. Y. Al-Naffouri**, and I. Hoteit, “Orthogonal Matching Pursuit for Enhanced Recovery of Sparse Geological Structures With the Ensemble Kalman Filter”, in *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol.9, pp.1710-1724, Apr. 2016.

51. A. Douik, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Coordinated Scheduling and Power Control in Cloud-Radio Access Networks", in *IEEE Transactions on Wireless Communications*, vol.15, pp.2523-2536, Apr. 2016.
50. K. Elkhailil, M. E. Eltayeb, A. Kammoun, **T. Y. Al-Naffouri**, and H. R. Bahrami, "On the Feedback Reduction of Multiuser Relay Networks Using Compressive Sensing", in *IEEE Transactions on Communications*, vol.64, pp.1437-1450, Apr. 2016.
49. Mohamed Suliman, Tarig Ballal, and **T. Y. Al-Naffouri**, "Perturbation-Based Regularization for Signal Estimation in Linear Discrete Ill-posed Problems", in *CoRR*, vol.abs/1611.09742, Feb. 2016.
48. R. Arshad, H. Elsayy, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "Handover Management in 5G and Beyond: A Topology Aware Skipping Approach", in *IEEE Access*, vol.4, pp.9073-9081, Jan. 2016.
47. **T. Y. Al-Naffouri**, M. Moinuddin, N. Ajeeb, B. Hassibi, and A. L. Moustakas, "On the Distribution of Indefinite Quadratic Forms in Gaussian Random Variables", in *IEEE Transactions on Communications*, vol.64, pp.153-165, Jan. 2016.
46. L. H. Afify, H. ElSawy, **T. Y. Al-Naffouri**, and M. S. Alouini, "The Influence of Gaussian Signaling Approximation on Error Performance in Cellular Networks", in *IEEE Communications Letters*, vol.19, pp.2202-2205, Dec. 2015.
45. A. Douik, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "Delay Reduction for Instantly Decodable Network Coding in Persistent Channels With Feedback Imperfections", in *IEEE Transactions on Wireless Communications*, vol.14, pp.5956-5970, Nov. 2015.
44. T. Ballal, **T. Y. Al-Naffouri**, and S. F. Ahmed, "Low-Complexity Bayesian Estimation of Cluster-Sparse Channels", in *IEEE Transactions on Communications*, vol.63, pp.4159-4173, Nov. 2015.
43. T. Bouchoucha, M. F. A. Ahmed, **T. Y. Al-Naffouri**, and M. S. Alouini, "Distributed Estimation Based on Observations Prediction in Wireless Sensor Networks", in *IEEE Signal Processing Letters*, vol.22, pp.1530-1533, Oct. 2015.
42. H. Dahrouj, A. Douik, F. Rayal, **T. Y. Al-Naffouri**, and M. S. Alouini, "Cost-effective hybrid RF/FSO backhaul solution for next generation wireless systems", in *IEEE Wireless Communications*, vol.22, pp.98-104, Oct. 2015.
41. M. E. Eltayeb, K. Elkhailil, H. R. Bahrami, and **T. Y. Al-Naffouri**, "Opportunistic Relay Selection With Limited Feedback", in *IEEE Transactions on Communications*, vol.63, pp.2885-2898, Aug. 2015.
40. H. Elsayy, H. Dahrouj, **T. Y. Al-Naffouri**, and M. s. Alouini, "Virtualized cognitive network architecture for 5G cellular networks", in *IEEE Communications Magazine*, vol.53, pp.78-85, Jul. 2015.
39. H. Dahrouj, A. Douik, O. Dhifallah, **T. Y. Al-Naffouri**, and M. S. Alouini, "Resource allocation in heterogeneous cloud radio access networks: advances and challenges", in *IEEE Wireless Communications*, vol.22, pp.66-73, Jun. 2015.
38. S. J. Lin, W. H. Chung, Y. S. Han, and **T. Y. Al-Naffouri**, "A Unified Form of Exact-MSR Codes via Product-Matrix Frameworks", in *IEEE Transactions on Information Theory*, vol.61, pp.873-886, Feb. 2015.
37. M. Masood, L. H. Afify, and **T. Y. Al-Naffouri**, "Efficient Coordinated Recovery of Sparse Channels in Massive MIMO", in *IEEE Transactions on Signal Processing*, vol.63, pp.104-118, Jan. 2015.
36. S. Sorour, A. Douik, S. Valaee, **T. Y. Al-Naffouri**, and M. S. Alouini, "Partially Blind Instantly Decodable Network Codes for Lossy Feedback Environment", in *IEEE Transactions on Wireless Communications*, vol.13, pp.4871-4883, Sep. 2014.
35. T. Ballal, and **T. Y. Al-Naffouri**, "Low-Sampling-Rate Ultra-Wideband Channel Estimation Using Equivalent-Time Sampling", in *IEEE Transactions on Signal Processing*, vol.62, pp.4882-4895, Sep. 2014.

34. M. E. Eltayeb, **T. Y. Al-Naffouri**, and H. R. Bahrami, "Compressive Sensing for Feedback Reduction in MIMO Broadcast Channels", in *IEEE Transactions on Communications*, vol.62, pp.3209-3222, Sep. 2014.
33. Zaib, Alam, and **T. Y. Al-Naffouri**, "Blind and semi-blind ML detection for space-time block-coded OFDM wireless systems", in *EURASIP Journal on Advances in Signal Processing*, vol.2014, pp.131, Aug. 2014.
32. Omer, Muhammad, Quadeer, Ahmed A, Sharawi, Mohammad S, and **T. Y. Al-Naffouri**, "Sub-sampling-based 2D localization of an impulsive acoustic source in reverberant environments", in *EURASIP Journal on Advances in Signal Processing*, vol.2014, pp.116, Jul. 2014.
31. A. Douik, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "A Lossy Graph Model for Delay Reduction in Generalized Instantly Decodable Network Coding", in *IEEE Wireless Communications Letters*, vol.3, pp.281-284, Jun. 2014.
30. F. Sana, T. Ballal, **T. Y. Al-Naffouri**, and I. Hoteit, "Low Complexity Wireless Monitoring of Respiratory Movements using UWB Impulse Response Estimation", in *Biomedical Signal Processing and Control*, vol.10, pp.192-200, Mar. 2014.
29. **T. Y. Al-Naffouri**, A. A. Quadeer, and G. Caire, "Impulse Noise Estimation and Removal for OFDM Systems", in *IEEE Transactions on Communications*, vol.62, pp.976-989, Mar. 2014.
28. Sana, Furrukh, Ballal, Tarig, **T. Y. Al-Naffouri**, and Hoteit, Ibrahim, "Low-complexity wireless monitoring of respiratory movements using ultra-wideband impulse response estimation", in *Biomedical Signal Processing and Control*, vol.10, pp.192-200, Feb. 2014.
27. Owodunni, Damilola S, Ali, Anum, Quadeer, Ahmed A, Al-Safadi, Ebrahim B, Hammi, Oualid, and **T. Y. Al-Naffouri**, "Compressed sensing techniques for receiver based post-compensation of transmitter's nonlinear distortions in OFDM systems", in *Signal Processing*, vol.97, pp.282-293, Feb. 2014.
26. A. Ali, A. Al-Rabah, M. Masood, and **T. Y. Al-Naffouri**, "Receiver-Based Recovery of Clipped OFDM Signals for PAPR Reduction: A Bayesian Approach", in *IEEE Access*, vol.2, pp.1213-1224, Jan. 2014.
25. M. F. A. Ahmed, **T. Y. Al-Naffouri**, M. S. Alouini, and G. Turkiyyah, "The Effect of Correlated Observations on the Performance of Distributed Estimation", in *IEEE Transactions on Signal Processing*, vol.61, pp.6264-6275, Dec. 2013.
24. A. Ali, O. Hammi, and **T. Y. Al-Naffouri**, "Compressed Sensing Based Joint-Compensation of Power Amplifier's Distortions in OFDMA Cognitive Radio Systems", in *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, vol.3, pp.508-520, Dec. 2013.
23. M. Masood, and **T. Y. Al-Naffouri**, "Sparse Reconstruction Using Distribution Agnostic Bayesian Matching Pursuit", in *IEEE Transactions on Signal Processing*, vol.61, pp.5298-5309, Nov. 2013.
22. **T. Y. Al-Naffouri**, A. A. Dahman, M. S. Sohail, W. Xu, and B. Hassibi, "Low-Complexity Blind Equalization for OFDM Systems With General Constellations", in *IEEE Transactions on Signal Processing*, vol.60, pp.6395-6407, Dec. 2012.
21. A. A. Quadeer, and **T. Y. Al-Naffouri**, "Structure-Based Bayesian Sparse Reconstruction", in *IEEE Transactions on Signal Processing*, vol.60, pp.6354-6367, Dec. 2012.
20. Farhan Abdul Ghaffar, **T. Y. Al-Naffouri**, M Kashan Mobeen, Kaled N Salama, and Atif Shamim, "A Compact QPSK Modulator with Low Amplitude and Phase Imbalance for Remote Sensing Applications", in *Canadian Journal on Electrical and Electronics Engineering*, Sep. 2012.
19. E. B. Al-Safadi, and **T. Y. Al-Naffouri**, "Peak Reduction and Clipping Mitigation in OFDM by Augmented Compressive Sensing", in *IEEE Transactions on Signal Processing*, vol.60, pp.3834-3839, Jul. 2012.
18. K. M. Z. Islam, **T. Y. Al-Naffouri**, and N. Al-Dhahir, "On Optimum Pilot Design for Comb-Type OFDM Transmission over Doubly-Selective Channels", in *IEEE Transactions on Communications*, vol.59, pp.930-935, Apr. 2011.

17. **T. Y. Al-Naffouri**, M. Moinuddin, and M. S. Sohail, "Mean Weight Behavior of the NLMS Algorithm for Correlated Gaussian Inputs", in *IEEE Signal Processing Letters*, vol.18, pp.7-10, Jan. 2011.
16. **T. Y. Al-Naffouri**, "Opportunistic Random Beamforming with Optimal Precoding for Spatially Correlated Channels", in *IEEE Communications Letters*, vol.14, pp.1041-1043, Nov. 2010.
15. **T. Y. Al-Naffouri**, and M. Moinuddin, "Exact Performance Analysis of the  $\epsilon$ -NLMS Algorithm for Colored Circular Gaussian Inputs", in *IEEE Transactions on Signal Processing*, vol.58, pp.5080-5090, Oct. 2010.
14. **T. Y. Al-Naffouri**, and A. A. Quadeer, "Cyclic Prefix Based Enhanced Data Recovery in OFDM", in *IEEE Transactions on Signal Processing*, vol.58, pp.3406-3410, Jun. 2010.
13. **T. Y. Al-Naffouri**, K. M. Zahidul Islam, N. Al-Dhahir, and S. Lu, "A Model Reduction Approach for OFDM Channel Estimation Under High Mobility Conditions", in *IEEE Transactions on Signal Processing*, vol.58, pp.2181-2193, Apr. 2010.
12. M. S. Sohail, and **T. Y. Al-Naffouri**, "An EM based frequency domain channel estimation algorithm for multi-access OFDM systems", in *Signal Processing*, vol.90, pp.1562-1572, Feb. 2010.
11. **T. Y. Al-Naffouri**, and A. A. Quadeer, "A Forward-Backward Kalman Filter-based Receiver", in *EURASIP Journal on Advances in Signal Processing*, vol.2008, pp.158037, Dec. 2009.
10. **T. Y. Al-Naffouri**, and Quadeer, A. A., "A Forward-Backward Kalman Filter-based Receiver", in *EURASIP Journal on Advances in Signal Processing*, vol.2008, pp.158037, Dec. 2009.
9. Azzedine Zerguine, Mun K. Chan, **T. Y. Al-Naffouri**, Muhammad Moinuddin, and Colin F.N. Cowan, "Convergence and tracking analysis of a variable normalised LMF (XE-NLMF) algorithm", in *Signal Processing*, vol.89, pp.778 - 790, Feb. 2009.
8. **T. Y. Al-Naffouri**, "Scaling of the minimum of iid random variables", in *Signal Processing*, vol.89, pp.1830 - 1834, Feb. 2009.
7. **T. Y. Al-Naffouri**, M. Sharif, and B. Hassibi, "How much does transmit correlation affect the sum-rate scaling of MIMO gaussian broadcast channels?", in *IEEE Transactions on Communications*, vol.57, pp.562-572, Feb. 2009.
6. **T. Y. Al-Naffouri**, A. F. Dana, and B. Hassibi, "Scaling laws of multiple antenna group-broadcast channels", in *IEEE Transactions on Wireless Communications*, vol.7, pp.5030-5038, Dec. 2008.
5. **T. Y. Al-Naffouri**, "An EM-Based Forward-Backward Kalman Filter for the Estimation of Time-Variant Channels in OFDM", in *IEEE Transactions on Signal Processing*, vol.55, pp.3924-3930, Jul. 2007.
4. G. A. Al-Rawi, **T. Y. Al-Naffouri**, A. Bahai, and J. Cioffi, "Exploiting error-control coding and cyclic-prefix in channel estimation for coded OFDM systems", in *IEEE Communications Letters*, vol.7, pp.388-390, Aug. 2003.
3. **T. Y. Al-Naffouri**, and A. H. Sayed, "Transient analysis of data-normalized adaptive filters", in *IEEE Transactions on Signal Processing*, vol.51, pp.639-652, Mar. 2003.
2. **T. Y. Al-Naffouri**, and A. H. Sayed, "Transient analysis of adaptive filters with error nonlinearities", in *IEEE Transactions on Signal Processing*, vol.51, pp.653-663, Mar. 2003.
1. **T. Y. Al-Naffouri**, and Sayed, Ali H, "Adaptive Filters with Error Nonlinearities: Mean-square Analysis and Optimum Design", in *EURASIP J. Appl. Signal Process.*, vol.2001, pp.192-205, Jan. 2001.

## CONFERENCE PUBLICATIONS

154. Ayed M. Alrashdi, Abla Kammoun, Ismail Ben Atitallah, Tarig Ballal, Christos Thrampoulidis, Anas Chaaban, and **T. Y. Al-Naffouri**, "Optimum Training for Massive MIMO BPSK Transmission", *19th IEEE SPAWC international workshop on signal processing advances in wireless communications*, Jun. 2018.
153. **T. Y. Al-Naffouri**, and Mohamed-Slim Alouini, "Robust 3D Underwater Optical Wireless Sensor Networks Localization via Low Rank Matrix Completion", *19th IEEE SPAWC international workshop on signal processing advances in wireless communications*, pp.1-5, Jun. 2018.
152. N. Saeed, A. Celik, **T. Y. Al-Naffouri**, and M. S. Alouini, "Connectivity Analysis of Underwater Optical Wireless Sensor Networks: A Graph Theoretic Approach", *2018 IEEE International Conference on Communications Workshops (ICC Workshops)*, pp.1-6, May. 2018.
151. Y. N. Shnaiwer, Sameh Sorour, **T. Y. Al-Naffouri**, and S. ALGhadhban, "Cross-Layer Cloud Offloading using Fog Radio Access Networks and Network Coding", *IEEE ICC Workshops 2018*, May. 2018.
150. Mohamed A. Suliman, Houssein Sifaou, Tarig Ballal, Mohamed-Slim Alouini, and **T. Y. Al-Naffouri**, "Robust Estimation in Linear Ill-Posed Problems with Adaptive Regularization Scheme", *ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings*, pp.4504–4508, Apr. 2018.
149. A. Celik, N. Saeed, **T. Y. Al-Naffouri**, and M. S. Alouini, "Modeling and performance analysis of multihop underwater optical wireless sensor networks", *2018 IEEE Wireless Communications and Networking Conference (WCNC)*, pp.1-6, Apr. 2018.
148. Mohammed H. Alsharif, Mohamed Saad, Mohamed Siala, Hatem Boujemaa, Tarig Ballal, and **T. Y. Al-Naffouri**, "High Accuracy Acoustic Estimation of Multiple Targets", *ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings*, pp.3534–3538, Apr. 2018.
147. Muhammad Moinuddin, **T. Y. Al-Naffouri**, and Khaled A. Al-Hujaili, "Improved Steady State Analysis Of The Recursive Least Squares Algorithm", *ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings*, pp.4139–4143, Apr. 2018.
146. Nasir Saeed, Abdulkadir Celik, **T. Y. Al-Naffouri**, and Mohamed-Slim Alouini, "Underwater Optical Sensor Networks Localization With Limited Connectivity", *ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings*, pp.3804–3808, Apr. 2018.
145. Mostafa Emara, Hesham Elsayy, Sameh Sorour, Samir Al-Ghadhban, Mohamed-Slim Alouini, and **T. Y. Al-Naffouri**, "Optimal Caching in Multicast 5G Networks with Opportunistic Spectrum Access", *IEEE Global Communications Conference GLOBECOM 2017*, Dec. 2017.
144. K. Elkhilil, A. Kammoun, R. Couillet, **T. Y. Al-Naffouri**, and M. S. Alouini, "Asymptotic performance of regularized quadratic discriminant analysis based classifiers", *2017 IEEE 27th International Workshop on Machine Learning for Signal Processing (MLSP)*, pp.1-6, Sep. 2017.
143. Y. Shnaiwer, S. Sorour, P. Sadeghi, and **T. Y. Al-Naffouri**, "Online Cloud Offloading using Heterogenous Enhanced Remote Radio Heads", *IEEE Vehicular Technology Conference (VTC17-Fall)*, Sep. 2017.
142. H. Chen, T. Ballal, M. Saad, and **T. Y. Al-Naffouri**, "Angle-of-arrival-based gesture recognition using ultrasonic multi-frequency signals", *2017 25th European Signal Processing Conference (EUSIPCO)*, pp.16-20, Aug. 2017.
141. O. M. Bushnaq, **T. Y. Al-Naffouri**, S. P. Chepuri, and G. Leus, "Joint sensor placement and power rating selection in energy harvesting wireless sensor networks", *2017 25th European Signal Processing Conference (EUSIPCO)*, pp.2423-2427, Aug. 2017.
140. M. H. AlSharif, M. Saad, M. Siala, T. Ballal, H. Boujemaa, and **T. Y. Al-Naffouri**, "Zadoff-Chu coded ultrasonic signal for accurate range estimation", *2017 25th European Signal Processing Conference (EUSIPCO)*, pp.1250-1254, Aug. 2017.

139. A. M. Alanazi, T. Ballal, M. Masood, and **T. Y. Al-Naffouri**, “Image deblurring using a perturbation-based regularization approach”, *2017 25th European Signal Processing Conference (EUSIPCO)*, pp.2383-2387, Aug. 2017.
138. Ayed Alrashdi, Ismail Ben AtitallahIsmail, **T. Y. Al-Naffouri**, and Mohamed-Slim Alouini, “Precise Performance analysis of the LASSO under Matrix Uncertainty”, *5th IEEE Global Conference on Signal and Information Processing (GlobalSip 2017)*, Jul. 2017.
137. Tarig Ballal, Mohamed Suliman, and **T. Y. Al-Naffouri**, “Near-optimal parameter selection methods for L2 regularization”, *5th IEEE Global Conference on Signal and Information Processing (GlobalSip 2017)*, Jul. 2017.
136. S. J. Lin, A. Alloum, and **T. Y. Al-Naffouri**, “Principal pivot transforms on radix-2 DFT-type matrices”, *2017 IEEE International Symposium on Information Theory (ISIT)*, pp.2358-2362, Jun. 2017.
135. I. Ben Atitallah, C. Thrampoulidis, A. Kammoun, **T. Y. Al-Naffouri**, M. S. Alouini, and B. Hassibi, “The BOX-LASSO with application to GSSK modulation in massive MIMO systems”, *2017 IEEE International Symposium on Information Theory (ISIT)*, pp.1082-1086, Jun. 2017.
134. M. Emara, H. ElSawy, S. Sorour, S. Al-Ghadhban, M. S. Alouini, and **T. Y. Al-Naffouri**, “Stochastic geometry model for multi-channel fog radio access networks”, *2017 15th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt)*, pp.1-6, May. 2017.
133. M. Behzad, M. Masood, T. Ballal, M. Shadaydeh, and **T. Y. Al-Naffouri**, “Image denoising via collaborative support-agnostic recovery”, *2017 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.1343-1347, Mar. 2017.
132. I. Ben Atitallah, C. Thrampoulidis, A. Kammoun, **T. Y. Al-Naffouri**, B. Hassibi, and M. S. Alouini, “BER analysis of regularized least squares for BPSK recovery”, *2017 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.4262-4266, Mar. 2017.
131. Mohammed Eltayeb, **T. Y. Al-Naffouri**, and Robert Heath, “Compressive Sensing for Vehicular Millimeter Wave Antenna Array Diagnosis”, *IEEE Global Communications Conference (GLOBECOM)*, Dec. 2016.
130. K. Elkhilil, A. Kammoun, **T. Y. Al-Naffouri**, and M. S. Alouini, “A Blind Antenna Selection Scheme for Single-Cell Uplink Massive MIMO”, *2016 IEEE Globecom Workshops (GC Wkshps)*, pp.1-6, Dec. 2016.
129. M. Suliman, T. Ballal, and **T. Y. Al-Naffouri**, “Robust regularized least-squares beamforming approach to signal estimation”, *2016 IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, pp.75-79, Dec. 2016.
128. R. Arshad, H. ElSawy, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, “Cooperative Handover Management in Dense Cellular Networks”, *2016 IEEE Global Communications Conference (GLOBECOM)*, pp.1-6, Dec. 2016.
127. O. Dhifallah, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, “Distributed Robust Power Minimization for the Downlink of Multi-Cloud Radio Access Networks”, *2016 IEEE Global Communications Conference (GLOBECOM)*, pp.1-6, Dec. 2016.
126. M. E. Eltayeb, **T. Y. Al-Naffouri**, and R. W. Heath, “Compressive Sensing for Blockage Detection in Vehicular Millimeter Wave Antenna Arrays”, *2016 IEEE Global Communications Conference (GLOBECOM)*, pp.1-6, Dec. 2016.
125. M. E. Eltayeb, J. Choi, **T. Y. Al-Naffouri**, and R. W. Heath, “On the Security of Millimeter Wave Vehicular Communication Systems Using Random Antenna Subsets”, *2016 IEEE 84th Vehicular Technology Conference (VTC-Fall)*, pp.1-5, Sep. 2016.
124. S. J. Lin, A. Alloum, and **T. Y. Al-Naffouri**, “RAID-6 reed-solomon codes with asymptotically optimal arithmetic complexities”, *2016 IEEE 27th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC)*, pp.1-5, Sep. 2016.

123. B. Al-Oquibi, O. Amin, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Energy efficiency for cloud-radio access networks with imperfect channel state information", *2016 IEEE 27th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC)*, pp.1-5, Sep. 2016.
122. M. Suliman, T. Ballal, A. Kammoun, and **T. Y. Al-Naffouri**, "Penalized linear regression for discrete ill-posed problems: A hybrid least-squares and mean-squared error approach", *2016 24th European Signal Processing Conference (EUSIPCO)*, pp.403-407, Aug. 2016.
121. K. Elkhailil, A. Kammoun, **T. Y. Al-Naffouri**, and M. S. Alouini, "Exact closed-form expression for the inverse moments of one-sided correlated Gram matrices", *2016 IEEE International Symposium on Information Theory (ISIT)*, pp.2174-2178, Jul. 2016.
120. K. Elkhailil, M. Eltayeb, A. Kammoun, **T. Y. Al-Naffouri**, and H. R. Bahrami, "Block compressed sensing for feedback reduction in relay-aided multiuser full duplex networks", *2016 IEEE 17th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, pp.1-6, Jul. 2016.
119. A. Alloum, S. J. Lin, and **T. Y. Al-Naffouri**, "On locality of Generalized Reed-Muller codes over the broadcast erasure channel", *2016 IEEE International Symposium on Broadband Multimedia Systems and Broadcasting (BMSB)*, pp.1-4, Jun. 2016.
118. I. Ben Atitallah, A. Kammoun, M. S. Alouini, and **T. Y. Al-Naffouri**, "Robust adaptive subspace detection in impulsive noise", *2016 IEEE Statistical Signal Processing Workshop (SSP)*, pp.1-5, Jun. 2016.
117. R. Arshad, H. ElSawy, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "Handover management in dense cellular networks: A stochastic geometry approach", *2016 IEEE International Conference on Communications (ICC)*, pp.1-7, May. 2016.
116. A. Douik, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Resilient backhaul network design using hybrid radio/free-space optical technology", *2016 IEEE International Conference on Communications (ICC)*, pp.1-7, May. 2016.
115. O. M. S. Al-Ebraheemy, A. Chaaban, **T. Y. Al-Naffouri**, and M. S. Alouini, "Capacity bounds for the 2-user Gaussian IM-DD optical multiple-access channel", *2016 IEEE International Symposium on Circuits and Systems (ISCAS)*, pp.2823-2826, May. 2016.
114. L. H. Afify, H. ElSawy, **T. Y. Al-Naffouri**, and M. S. Alouini, "Unified tractable model for downlink MIMO cellular networks using stochastic geometry", *2016 IEEE International Conference on Communications (ICC)*, pp.1-7, May. 2016.
113. H. Ali, S. Ahmed, **T. Y. Al-Naffouri**, and M. S. Alouini, "Reduced complexity FFT-based DOA and DOD estimation for moving target in bistatic MIMO radar", *2016 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.3021-3025, Mar. 2016.
112. K. A. Al-Hujaili, **T. Y. Al-Naffouri**, and M. Moinuddin, "The steady-state of the (Normalized) LMS is schur convex", *2016 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.4900-4904, Mar. 2016.
111. S. Al-Shuhail, A. Ali, and **T. Y. Al-Naffouri**, "Peak-to-average power ratio reduction in interleaved OFDMA systems", *2015 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)*, pp.658-662, Dec. 2015.
110. O. Hammi, A. Abdelhafiz, F. M. Ghannouchi, and **T. Y. Al-Naffouri**, "On the use of compressed sampling algorithms for impairments compensation in dynamic nonlinear transmitters", *2015 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)*, pp.641-645, Dec. 2015.
109. M. E. Eltayeb, A. Alkhateeb, R. W. Heath, and **T. Y. Al-Naffouri**, "Opportunistic beam training with hybrid analog/digital codebooks for mmWave systems", *2015 IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, pp.315-319, Dec. 2015.

108. A. Douik, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "Rate Aware Instantly Decodable Network Codes", *2015 IEEE Globecom Workshops (GC Wkshps)*, pp.1-6, Dec. 2015.
107. O. Dhifallah, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Decentralized Group Sparse Beamforming for Multi-Cloud Radio Access Networks", *2015 IEEE Global Communications Conference (GLOBECOM)*, pp.1-6, Dec. 2015.
106. Y. N. Shnaiwer, S. Sorour, N. Aboutorab, P. Sadeghi, and **T. Y. Al-Naffouri**, "Network-Coded Content Delivery in Femtocaching-Assisted Cellular Networks", *2015 IEEE Global Communications Conference (GLOBECOM)*, pp.1-6, Dec. 2015.
105. A. Douik, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Hybrid Scheduling/Signal-Level Coordination in the Downlink of Multi-Cloud Radio-Access Networks", *2015 IEEE Global Communications Conference (GLOBECOM)*, pp.1-6, Dec. 2015.
104. **T. Y. Al-Naffouri**, "Efficient channel estimation in massive MIMO systems - a distributed approach", *2015 IEEE 6th International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, pp.401-404, Dec. 2015.
103. M. E. Eltayeb, K. Elkhailil, A. A. Mas'ud, and **T. Y. Al-Naffouri**, "Relay Selection with Limited and Noisy Feedback", *2015 IEEE 82nd Vehicular Technology Conference (VTC2015-Fall)*, pp.1-5, Sep. 2015.
102. O. Dhifallah, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Joint Hybrid Backhaul and Access Links Design in Cloud-Radio Access Networks", *2015 IEEE 82nd Vehicular Technology Conference (VTC2015-Fall)*, pp.1-5, Sep. 2015.
101. K. Elkhailil, M. E. Eltayeb, H. Dahrouj, and **T. Y. Al-Naffouri**, "Distributed User Selection in Network MIMO Systems with Limited Feedback", *2015 IEEE 82nd Vehicular Technology Conference (VTC2015-Fall)*, pp.1-5, Sep. 2015.
100. M. T. Alkhodary, T. Ballal, T. Y. Al-Najfour, and A. H. Muqaibel, "Low-sampling-rate M-ary multiple access UWB communications in multipath channels", *2015 23rd European Signal Processing Conference (EUSIPCO)*, pp.374-378, Aug. 2015.
99. H. A. J. Alshamary, **T. Y. Al-Naffouri**, A. Zaib, and W. Xu, "Optimal non-coherent data detection for massive SIMO wireless systems: A polynomial complexity solution", *2015 IEEE Signal Processing and Signal Processing Education Workshop (SP/SPE)*, pp.172-177, Aug. 2015.
98. A. Zaib, M. Masood, M. Ghogho, and **T. Y. Al-Naffouri**, "Distributive estimation of frequency selective channels for massive MIMO systems", *2015 23rd European Signal Processing Conference (EUSIPCO)*, pp.889-893, Aug. 2015.
97. F. Sana, K. Katterbauer, **T. Y. Al-Naffouri**, and I. Hoteit, "Enhanced recovery of subsurface geological structures using compressed sensing and the Ensemble Kalman filter", *2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, pp.3107-3110, Jul. 2015.
96. A. Douik, S. Sorour, **T. Y. Al-Naffouri**, H.C. Yang, and M.S. Alouini, "Delay Reduction with Interference-less Cooperation Between Users Using Network Coding", *IEEE International Symposium on Network Coding (NetCod'15)*, Jun. 2015.
95. A. Douik, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Cost-effective backhaul design using hybrid radio/free-space optical technology", *2015 IEEE International Conference on Communication Workshop (ICCW)*, pp.7-12, Jun. 2015.
94. A. Douik, H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Coordinated scheduling for the downlink of cloud radio-access networks", *2015 IEEE International Conference on Communications (ICC)*, pp.2906-2911, Jun. 2015.
93. S. Sorour, N. Aboutoraby, **T. Y. Al-Naffouri**, and M. S. Alouini, "A graph model for opportunistic network coding", *2015 International Symposium on Network Coding (NetCod)*, pp.26-30, Jun. 2015.

92. L. H. Afify, H. ElSawy, **T. Y. Al-Naffouri**, and M. S. Alouini, "Error performance analysis in K-tier uplink cellular networks using a stochastic geometric approach", *2015 IEEE International Conference on Communication Workshop (ICCW)*, pp.87-93, Jun. 2015.
91. A. Ali, H. ElSawy, **T. Y. Al-Naffouri**, and M. S. Alouini, "Narrowband interference parameterization for sparse Bayesian recovery", *2015 IEEE International Conference on Communications (ICC)*, pp.4530-4535, Jun. 2015.
90. A. Douik, S. Sorour, **T. Y. Al-Naffouri**, H. C. Yang, and M. S. Alouini, "Delay reduction in multi-hop device-to-device communication using network coding", *2015 International Symposium on Network Coding (NetCod)*, pp.6-10, Jun. 2015.
89. L. H. Afify, H. ElSawy, **T. Y. Al-Naffouri**, and M. S. Alouini, "Error performance analysis in downlink cellular networks with interference management", *2015 13th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt)*, pp.591-596, May. 2015.
88. A. Moubayed, S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "Collaborative Multi-Layer Network Coding in Hybrid Cellular Cognitive Radio Networks", *2015 IEEE 81st Vehicular Technology Conference (VTC Spring)*, pp.1-6, May. 2015.
87. G. Kaddoum, M. F. A. Ahmed, and **T. Y. Al-Naffouri**, "Differential on-on keying: A robust non-coherent digital modulation scheme", *2015 International Conference on Information and Communication Technology Research (ICTRC)*, pp.20-23, May. 2015.
86. S. A. W. Shah, K. Abed-Meraim, and **T. Y. Al-Naffouri**, "Multi-Modulus algorithms using hyperbolic and givens rotations for blind deconvolution of mimo systems", *2015 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.2155-2159, Apr. 2015.
85. M. Masood, L. H. Afify, and **T. Y. Al-Naffouri**, "Efficient collaborative sparse channel estimation in massive MIMO", *2015 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.2924-2928, Apr. 2015.
84. T. Ballal, and **T. Y. Al-Naffouri**, "Improved linear least squares estimation using bounded data uncertainty", *2015 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.3427-3431, Apr. 2015.
83. A. Ali, M. Masood, S. Al-Ghadhban, and **T. Y. Al-Naffouri**, "Bayesian narrowband interference mitigation in SC-FDMA", *2015 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.2979-2983, Apr. 2015.
82. T. Bouchoucha, S. Ahmed, **T. Y. Al-Naffouri**, and M. S. Alouini, "Closed-form solution to directly design face waveforms for beam patterns using planar array", *2015 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.2359-2363, Apr. 2015.
81. H. Dahrouj, **T. Y. Al-Naffouri**, and M. S. Alouini, "Distributed cloud association in downlink multicloud radio access networks", *2015 49th Annual Conference on Information Sciences and Systems (CISS)*, pp.1-3, Mar. 2015.
80. A. Douik, S. Sorour, H. Tembine, M. S. Alouini, and **T. Y. Al-Naffouri**, "A game theoretic approach to minimize the completion time of network coded cooperative data exchange", *2014 IEEE Global Communications Conference*, pp.1583-1589, Dec. 2014.
79. K. Elkhilil, M. E. Eltayeb, H. Shibli, H. R. Bahrami, and **T. Y. Al-Naffouri**, "Opportunistic relay selection in multicast relay networks using compressive sensing", *2014 IEEE Global Communications Conference*, pp.3126-3131, Dec. 2014.
78. A. Douik, S. Sorour, M. S. Alouini, and **T. Y. Al-Naffouri**, "Completion time reduction in instantly decodable network coding through decoding delay control", *2014 IEEE Global Communications Conference*, pp.5008-5013, Dec. 2014.

77. H. Ali, S. Ahmed, **T. Y. Al-Naffouri**, and S. Alouini, "Reduction of snapshots for MIMO radar detection by block/group orthogonal matching pursuit", *2014 International Radar Conference*, pp.1-4, Oct. 2014.
76. A. Douik, S. Sorour, M. S. Alouini, and **T. Y. Al-Naffouri**, "On Minimizing the Maximum Broadcast Decoding Delay for Instantly Decodable Network Coding", *2014 IEEE 80th Vehicular Technology Conference (VTC2014-Fall)*, pp.1-5, Sep. 2014.
75. M. Masood, and **T. Y. Al-Naffouri**, "Support agnostic Bayesian recovery of jointly sparse signals", *2014 22nd European Signal Processing Conference (EUSIPCO)*, pp.1741-1745, Sep. 2014.
74. T. Ballal, and **T. Y. Al-Naffouri**, "Low-sampling-rate ultra-wideband digital receiver using equivalent-time sampling", *2014 IEEE International Conference on Ultra-WideBand (ICUWB)*, pp.321-326, Sep. 2014.
73. T. Ballal, and **T. Y. Al-Naffouri**, "Low-sampling-rate ultra-wideband channel estimation using a bounded-data-uncertainty approach", *2014 IEEE 15th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, pp.484-488, Jun. 2014.
72. A. Ali, A. Al-Zahrani, **T. Y. Al-Naffouri**, and A. Naguib, "Receiver based PAPR reduction in OFDMA", *2014 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.8087-8091, May. 2014.
71. M. E. Eltayeb, **T. Y. Al-Naffouri**, and H. R. Bahrami, "Downlink scheduling using non-orthogonal uplink beams", *2014 IEEE Wireless Communications and Networking Conference (WCNC)*, pp.1426-1431, Apr. 2014.
70. K. Majeed, S. Sorour, **T. Y. Al-Naffouri**, and S. Valaee, "Indoor localization using unsupervised manifold alignment with geometry perturbation", *2014 IEEE Wireless Communications and Networking Conference (WCNC)*, pp.2952-2957, Apr. 2014.
69. A. Douik, S. Sorour, M. S. Alouini, and **T. Y. Al-Naffouri**, "Delay reduction in lossy intermittent feedback for generalized instantly decodable network coding", *2013 IEEE 9th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob)*, pp.388-393, Oct. 2013.
68. **T. Y. Al-Naffouri**, and M. Moinuddin, "Exact tracking analysis of the NLMS algorithm for correlated Gaussian inputs", *21st European Signal Processing Conference (EUSIPCO 2013)*, pp.1-5, Sep. 2013.
67. A. Al-Rabah, M. Masood, A. Ali, and **T. Y. Al-Naffouri**, "Receiver-based Bayesian PAPR reduction in OFDM", *21st European Signal Processing Conference (EUSIPCO 2013)*, pp.1-5, Sep. 2013.
66. S. Sorour, N. Aboutorab, P. Sadeghi, M. S. Karim, **T. Y. Al-Naffouri**, and M. S. Alouini, "Delay Reduction in Persistent Erasure Channels for Generalized Instantly Decodable Network Coding", *2013 IEEE 77th Vehicular Technology Conference (VTC Spring)*, pp.1-5, Jun. 2013.
65. S. Sorour, **T. Y. Al-Naffouri**, and M. S. Alouini, "Collaborative multi-layer network coding for cellular cognitive radio networks", *2013 IEEE International Conference on Communications (ICC)*, pp.5986-5990, Jun. 2013.
64. M. F. A. Ahmed, **T. Y. Al-Naffouri**, and M. S. Alouini, "On the effect of correlated measurements on the performance of distributed estimation", *2013 IEEE International Conference on Communications (ICC)*, pp.4740-4744, Jun. 2013.
63. H. J. Shibli, M. E. Eltayeb, and **T. Y. Al-Naffouri**, "A Bayesian matching pursuit based scheduling algorithm for feedback reduction in MIMO broadcast channels", *2013 Third International Conference on Communications and Information Technology (ICCIT)*, pp.361-365, Jun. 2013.
62. A. A. Quadeer, M. S. Sohail, and **T. Y. Al-Naffouri**, "A compressed sensing based method with support refinement for impulse noise cancelation in DSL", *2013 IEEE 14th Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, pp.255-259, Jun. 2013.
61. M. Masood, and **T. Y. Al-Naffouri**, "Support agnostic Bayesian matching pursuit for block sparse signals", *2013 IEEE International Conference on Acoustics, Speech and Signal Processing*, pp.4643-4647, May. 2013.

60. M. E. Eltayeb, H. R. Bahrami, and **T. Y. Al-Naffouri**, "On the efficiency and privacy of smart grids neighborhood area networks", *2013 IEEE Energytech*, pp.1-5, May. 2013.
59. **T. Y. Al-Naffouri**, and M. Masood, "Distribution agnostic structured sparsity recovery algorithms", *2013 8th International Workshop on Systems, Signal Processing and their Applications (WoSSPA)*, pp.283-290, May. 2013.
58. S. O. Al-Jazzar, and **T. Y. Al-Naffouri**, "Relay self interference minimisation using tapped filter", *2013 8th International Workshop on Systems, Signal Processing and their Applications (WoSSPA)*, pp.316-319, May. 2013.
57. M. Omer, A. A. Quadeer, **T. Y. Al-Naffouri**, and M. S. Sharawi, "An L-shaped microphone array configuration for impulsive acoustic source localization in 2-D using orthogonal clustering based time delay estimation", *2013 1st International Conference on Communications, Signal Processing, and their Applications (ICCSPA)*, pp.1-6, Feb. 2013.
56. H. Ali, A. A. Quadeer, M. S. Sharawi, and **T. Y. Al-Naffouri**, "Investigating the effects of tuning parameters on the orthogonal clustering algorithm in time delay estimation", *2013 1st International Conference on Communications, Signal Processing, and their Applications (ICCSPA)*, pp.1-5, Feb. 2013.
55. Mudassar Masood, and **T. Y. Al-Naffouri**, "Non-Gaussian prior Fast Bayesian Matching Pursuit", *15th. Saudi Technical Exchange Meeting (STEM)*, Dec. 2012.
54. Z. Saleem, S. Al-Ghadhban, and **T. Y. Al-Naffouri**, "On the use of blind source separation for peak detection in spectrum sensing", *2012 IEEE International Conference on Control System, Computing and Engineering*, pp.66-71, Nov. 2012.
53. O. Rauf, A. A. Quadeer, M. S. Sharawi, and **T. Y. Al-Naffouri**, "RIR estimation using impulsive sources with sub-Nyquist sampling", *Int. Conf. on Inform. Science, Signal Process. and their applications (ISSPA)*, Jul. 2012.
52. M. Omer, A. A. Quadeer, M. S. Sharawi, and **T. Y. Al-Naffouri**, "Time delay estimation in a reverberant environment by low rate sampling of impulsive acoustic sources", *2012 11th International Conference on Information Science, Signal Processing and their Applications (ISSPA)*, pp.1050-1055, Jul. 2012.
51. M. S. Sohail, **T. Y. Al-Naffouri**, and S. N. Al-Ghadhban, "Narrow band interference cancelation in OFDM: A structured maximum likelihood approach", *2012 IEEE 13th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, pp.45-49, Jun. 2012.
50. E. B. Al-Safadi, and **T. Y. Al-Naffouri**, "Pilotless recovery of clipped OFDM signals by compressive sensing over reliable data carriers", *2012 IEEE 13th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, pp.580-584, Jun. 2012.
49. H. Ali, M. S. Sharawi, and **T. Y. Al-Naffouri**, "Error sources in COTS WSN platforms for impulsive signal acquisition applications", *2012 19th International Conference on Telecommunications (ICT)*, pp.1-6, Apr. 2012.
48. S. F. Ahmed, **T. Y. Al-Naffouri**, and A. H. Muqaibel, "Low-complexity MAP based channel support estimation for Impulse Radio Ultra-Wideband (IR-UWB) communications", *2011 IEEE International Conference on Ultra-Wideband (ICUWB)*, pp.370-374, Sep. 2011.
47. A. A. Quadeer, S. F. Ahmed, and **T. Y. Al-Naffouri**, "Structure based Bayesian sparse reconstruction using non-Gaussian prior", *2011 49th Annual Allerton Conference on Communication, Control, and Computing (Allerton)*, pp.277-283, Sep. 2011.
46. **T. Y. Al-Naffouri**, A. A. Quadeer, and G. Caire, "Impulsive noise estimation and cancellation in DSL using orthogonal clustering", *2011 IEEE International Symposium on Information Theory Proceedings*, pp.2841-2845, Jul. 2011.
45. **T. Y. Al-Naffouri**, F. F. Al-Shaalan, A. A. Quadeer, and H. Hmida, "Impulsive noise estimation and cancellation in DSL using compressive sampling", *2011 IEEE International Symposium of Circuits and Systems (ISCAS)*, pp.2133-2136, May. 2011.

44. K. M. Z. Islam, **T. Y. Al-Naffouri**, and N. Al-Dhahir, "Asymptotically MMSE-optimum pilot design for comb-type OFDM channel estimation in high-mobility scenarios", *2011 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp.3776-3779, May. 2011.
43. M. Moinuddin, **T. Y. Al-Naffouri**, and M. S. Sohail, "Exact Tracking Analysis of the -NLMS algorithm for circular complex correlated Gaussian input", *The 10th IEEE International Symposium on Signal Processing and Information Technology*, pp.225-230, Dec. 2010.
42. H. Abeida, and T. Y. Al-Nafouri, "Data-aided DOA estimation of single source with time-variant Rayleigh amplitudes", *2010 18th European Signal Processing Conference*, pp.1359-1363, Aug. 2010.
41. H. Abeida, T. Y. Al-Nafouri, and S. Al-Ghadhban, "Data-aided SNR estimation in time-variant Rayleigh fading channels", *2010 IEEE 11th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, pp.1-5, Jun. 2010.
40. A. A. Quadeer, and **T. Y. Al-Naffouri**, "ML blind channel estimation in OFDM using cyclostationarity and spectral factorization", *2010 IEEE 11th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, pp.1-5, Jun. 2010.
39. S. T. Qaseem, and **T. Y. Al-Naffouri**, "Compressive Sensing for Reducing Feedback in MIMO Broadcast Channels", *2010 IEEE International Conference on Communications*, pp.1-5, May. 2010.
38. S. T. Qaseem, **T. Y. Al-Naffouri**, and S. Alghadhban, "Compressive sensing for feedback reduction in MIMO broadcast channels", *2010 17th International Conference on Telecommunications*, pp.356-361, Apr. 2010.
37. **T. Y. Al-Naffouri**, and A. A. Quadeer, "Blind channel estimation in OFDM systems by relying on the Gaussian assumption of the input", *2009 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)*, pp.201-206, Dec. 2009.
36. E. B. Al-Safadi, and **T. Y. Al-Naffouri**, "On Reducing the Complexity of Tone-Reservation Based PAPR Reduction Schemes by Compressive Sensing", *GLOBECOM 2009 - 2009 IEEE Global Telecommunications Conference*, pp.1-6, Nov. 2009.
35. S. T. Qaseem, **T. Y. Al-Naffouri**, and T. M. Al-Murad, "Compressive sensing based opportunistic protocol for exploiting multiuser diversity in wireless networks", *2009 IEEE 20th International Symposium on Personal, Indoor and Mobile Radio Communications*, pp.1447-1451, Sep. 2009.
34. **T. Y. Al-Naffouri**, "Frequency domain estimation of time varying channels in OFDMA systems: An EM approach", *2009 16th International Conference on Digital Signal Processing*, pp.1-6, Jul. 2009.
33. B. H. Khan, M. Debbah, O. Ryan, and **T. Y. Al-Naffouri**, "Estimation of the distribution of randomly deployed wireless sensors", *2009 IEEE International Symposium on Information Theory*, pp.2413-2417, Jun. 2009.
32. **T. Y. Al-Naffouri**, and B. Hassibi, "On the distribution of indefinite quadratic forms in Gaussian random variables", *2009 IEEE International Symposium on Information Theory*, pp.1744-1748, Jun. 2009.
31. **T. Y. Al-Naffouri**, and M. E. El-Tayeb, "Opportunistic beamforming with precoding for spatially correlated channels", *2009 11th Canadian Workshop on Information Theory*, pp.63-66, May. 2009.
30. A. A. Quadeer, **T. Y. Al-Naffouri**, and M. Shadaydeh, "Iterative blind data detection in constant modulus OFDM systems", *2008 16th European Signal Processing Conference*, pp.1-5, Aug. 2008.
29. G. Caire, **T. Y. Al-Naffouri**, and A. K. Narayanan, "Impulse noise cancellation in OFDM: an application of compressed sensing", *2008 IEEE International Symposium on Information Theory*, pp.1293-1297, Jul. 2008.
28. **T. Y. Al-Naffouri**, and A. A. Quadeer, "Blind maximum-likelihood data recovery in OFDM", *2008 IEEE International Conference on Acoustics, Speech and Signal Processing*, pp.2829-2832, Mar. 2008.

27. **T. Y. Al-Naffouri**, and A. A. Mukaddam, "Frequency Domain Estimation of Multiple Access OFDM Channels", *2007 IEEE International Conference on Signal Processing and Communications*, pp.1047-1050, Nov. 2007.
26. **T. Y. Al-Naffouri**, "Receiver design for MIMO OFDM transmission over time variant channels", *2007 IEEE 8th Workshop on Signal Processing Advances in Wireless Communications*, pp.1-6, Jun. 2007.
25. A. F. Dana, **T. Y. Al-Naffouri**, and B. Hassibi, "On the Capacity Scalings of the Multiple Antenna Group-Broadcast Systems", *2007 IEEE International Symposium on Information Theory*, pp.771-775, Jun. 2007.
24. **T. Y. Al-Naffouri**, A. Dana, and B. Hassibi, "Scaling Laws of Multiple Antenna Group-Broadcast Channels", *2007 5th International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks and Workshops*, pp.1-6, Apr. 2007.
23. **T. Y. Al-Naffouri**, M. Sharif, and B. Hassibi, "How Much Does Transmit Correlation Affect the Sum-Rate of MIMO Downlink Channels?", *2006 IEEE International Symposium on Information Theory*, pp.1574-1578, Jul. 2006.
22. **T. Y. Al-Naffouri**, "Blurring the academic boundaries: Producing sustainable competitive advantage", *4th Int. Forum of Engineering Education (IFEE)*, Apr. 2006.
21. **T. Y. Al-Naffouri**, and A. Paulraj, "A forward-backward Kalman for the estimation of time-variant channels in OFDM", *IEEE 6th Workshop on Signal Processing Advances in Wireless Communications, 2005.*, pp.670-674, Jun. 2005.
20. **T. Y. Al-Naffouri**, O. Awoniyi, O. Oteri, and A. Paulraj, "Receiver design for MIMO-OFDM transmission over time variant channels", *Global Telecommunications Conference, 2004. GLOBECOM '04. IEEE*, vol.4, pp.2487-2492 Vol.4, Nov. 2004.
19. G. A. Al-Rawi, **T. Y. Al-Naffouri**, A. Bahai, and J. Cioffi, "An iterative receiver for coded OFDM systems over time-varying wireless channels", *Communications, 2003. ICC '03. IEEE International Conference on*, vol.5, pp.3371-3376 vol.5, May. 2003.
18. O. Oteri, **T. Y. Al-Naffouri**, O. Awoniyi, and A. Paulraj, "Joint channel/data recovery in STBC MIMO-OFDM", *Wireless Networking Symp*, Jan. 2003.
17. G. Al-Rawi, **T. Y. Al-Naffouri**, A. Bahai, and J. Cioffi, "Exploiting error-control coding and cyclic-prefix in channel estimation for coded OFDM systems", *Global Telecommunications Conference, 2002. GLOBECOM '02. IEEE*, vol.2, pp.1152-1156 vol.2, Nov. 2002.
16. **T. Y. Al-Naffouri**, A. Bahai, and A. Paulraj, "An EM-based OFDM receiver for time-variant channels", *Global Telecommunications Conference, 2002. GLOBECOM '02. IEEE*, vol.1, pp.589-593 vol.1, Nov. 2002.
15. **T. Y. Al-Naffouri**, G. Al-Rawi, A. Bahai, and A. Paulra, "A least-/ mean-squares approach to channel identification and equalization in OFDM", *2002 IEEE International Conference on Acoustics, Speech, and Signal Processing*, vol.3, pp.III-2577-III-2580, May. 2002.
14. **T. Y. Al-Naffouri**, and A. H. Sayed, "Optimum error nonlinearities for long adaptive filters", *2002 IEEE International Conference on Acoustics, Speech, and Signal Processing*, vol.2, pp.II-1373-II-1376, May. 2002.
13. **T. Y. Al-Naffouri**, A. Bahai, and A. Paulraj, "Semi-blind channel identification and equalization in OFDM: an expectation-maximization approach", *Proceedings IEEE 56th Vehicular Technology Conference*, vol.1, pp.13-17 vol.1, Jan. 2002.
12. **T. Y. Al-Naffouri**, D. Toumpakaris, A. Bahai, and A. Paulraj, "An adaptive semi-blind algorithm for channel identification in OFDM", *Conference Record of Thirty-Fifth Asilomar Conference on Signals, Systems and Computers (Cat.No.01CH37256)*, vol.2, pp.921-925 vol.2, Nov. 2001.

11. A. H. Sayed, and **T. Y. Al-Naffouri**, “Mean-square analysis of adaptive filters Part II: The error nonlinearity case”, *IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing*, Jun. 2001.
10. **T. Y. Al-Naffouri**, and A. H. Sayed, “Mean-square analysis of adaptive filters? Part I: The Data nonlinearity case”, *IEEE-EURASIP Workshop on Nonlinear Signal and Image Process*, Jun. 2001.
9. **T. Y. Al-Naffouri**, and A. H. Sayed, “Transient analysis of adaptive filters”, *2001 IEEE International Conference on Acoustics, Speech, and Signal Processing. Proceedings (Cat. No.01CH37221)*, vol.6, pp.3869-3872 vol.6, Jan. 2001.
8. A. H. Sayed, and **T. Y. Al-Naffouri**, “Mean-square analysis of normalized leaky adaptive filters”, *2001 IEEE International Conference on Acoustics, Speech, and Signal Processing. Proceedings (Cat. No.01CH37221)*, vol.6, pp.3873-3876 vol.6, Jan. 2001.
7. **T. Y. Al-Naffouri**, and Ali H. Sayed, “An adaptive filter robust to data uncertainties”, *Proceedings of the Allerton Conference on Communication, Control and Computing*, vol.2, pp.1175–1183, Oct. 2000.
6. **T. Y. Al-Naffouri**, A. Zerguine, and M. Bettayeb, “The optimum error nonlinearity in LMS adaptation with an independent and identically distributed input”, *2000 10th European Signal Processing Conference*, pp.1-4, Sep. 2000.
5. **T. Y. Al-Naffouri**, and T. Kailath, “Robust Estimation for Uncertain Models in a Data Fusion Scenario”, *IFAC Proceedings Volumes*, vol.33, pp.899–904, Jun. 2000.
4. **T. Y. Al-Naffouri**, A. H. Sayed, and T. Kailath, “On the selection of optimal nonlinearities for stochastic gradient adaptive algorithms”, *2000 IEEE International Conference on Acoustics, Speech, and Signal Processing. Proceedings (Cat. No.00CH37100)*, vol.1, pp.464-467 vol.1, Jan. 2000.
3. **T. Y. Al-Naffouri**, A. Zerguine, and M. Bettayeb, “Convergence properties of mixed-norm algorithms under general error criteria”, *Circuits and Systems, 1999. ISCAS '99. Proceedings of the 1999 IEEE International Symposium on*, vol.3, pp.211-214 vol.3, Jul. 1999.
2. **T. Y. Al-Naffouri**, A. Zerguine, and M. Bettayeb, “Convergence analysis of the LMS algorithm with a general error nonlinearity and an IID input”, *Conference Record of Thirty-Second Asilomar Conference on Signals, Systems and Computers (Cat. No.98CH36284)*, vol.1, pp.556-559 vol.1, Nov. 1998.
1. **T. Y. Al-Naffouri**, A. Zerguine, and M. Bettayeb, “A unifying view of error nonlinearities in LMS adaptation”, *Acoustics, Speech and Signal Processing, 1998. Proceedings of the 1998 IEEE International Conference on*, vol.3, pp.1697-1700 vol.3, May. 1998.

## PATENTS

22. K. Majeed, S. Sorour, **T. Y. Al-Naffouri**, and S. Valaee, *RSS-Based Indoor Localization with No Deployment nor Update Efforts*, US patent submitted.
21. Tarig Ballal Khidir Ahmed, **T. Y. Al-Naffouri**, Hui Chen, and Mohamed Saadeldin, *A Gesture Recognition System Using Ultrasonic Angle-of-Arrival Information*, US patent submitted.
20. Tarig Ballal Khidir Ahmed, **T. Y. Al-Naffouri**, and Hui Chen, *An Ultrasound Based Air-Writing System* US patent submitted.
19. Sajid Ahmed, **T. Y. Al-Naffouri**, Mohamed-Slim Alouini, and Taha Bouchoucha, *Direct Closed-Form Finite Alphabet Constant-Envelope Waveform Design for Planar Array Beampatterns*, Pending US patent, PCT no.IB2016/052870.
18. Salah A. Aly, **T. Y. Al-Naffouri**, Mohamed-Slim Alouini, and Ahmed Douik, *A New Method For Robust Node Estimation and Topology Discovery Algorithm in Large-Scale Wireless Sensor Networks*, Pending US patent, no. 15/747,554.
17. **T. Y. Al-Naffouri**, and Mohamed Saadeldin, *Smart Parking System*, Pending US patent, PCT no. IB2017/052540.

16. **T. Y. Al-Naffouri**, and Mohamed-Slim Alouini, Rabe Arshad, Hesham ElSawy, Sameh Sorour *An apparatus reduce handover signaling in dense cellular networks through base station skipping*, Pending US patent, no. PCT/IB2017/051714.
15. Tarig Ballal Khidir Ahmed, **T. Y. Al-Naffouri**, Ibrahim Hoteit, and Furrukh Sana, *Non-Invasive Fetal Electrocardiogram Extraction from Abdominal Electrocardiogram Signals of Pregnant Women Exploiting joint Sparse Supports in a Dual Dictionary Framework*, Pending US patent, PCT no. PCT/IB2017/057853.
14. Rabe Arshad, Hesham ElSawy, Sameh Sorour, **T. Y. Al-Naffouri**, and Mohamed-Slim Alouini, *Reducing Handover Signaling in Dense Cellular Networks through Base Station Skipping*, Pending US patent, PCT no. IB2017/051714, March 2016.
13. Furrukh Sana, Tarig Ballal, **T. Y. Al-Naffouri**, and Ibrahim Hoteit, *Apparatus and Method for Wireless Monitoring Using Ultra-Wideband Frequencies*, U.S. Patent 9532735, Jan 3, 2017.
12. Ahmed Syed Faraz, and **T. Y. Al-Naffouri** *Low-Complexity Method for Estimating Impulse-Radio UWB Wireless Channels*, US patent no. 9450786, Sep 20, 2016.
11. Anum Ali, Damilola S. Owodunni, Oualid Hammi, **T. Y. Al-Naffouri**, *System and Method for Joint Compensation of Power Amplifier's Distortion*, US patent no. 9137082, Sep 15, 2015.
10. Zahid Saleem, Samir Alghadhban, and **T. Y. Al-Naffouri** *Peak Detection Method Using Blind Source Separation*, US patent no. 8958750, Feb 17, 2015.
9. **T. Y. Al-Naffouri** and A. A. Quadeer, *Method of performing structure-based Bayesian sparse signal reconstruction*, US patent no, 8861655, Oct 14, 2014.
8. **T. Y. Al-Naffouri**, N. Al-Dhahir, and M. S. Sohail, *Method for mitigating interference in OFDM communications systems*, US patent no. 8705642, Apr 22, 2014.
7. Ebrahim A-Safadi and **T. Y. Al-Naffouri**, *Method of Performing Peak Reduction and Clipping Mitigation*, US patent no. 8804862 Aug 12, 2014.
6. **T. Y. Al-Naffouri**, E. B. Al-Safadi, and M. E. Eltayeb, *OFDM Peak-to-Average Power Ratio Reduction Method*, US patent no. 8483296, Jul 9, 2013, B2.
5. Tarig Ballal Khidir Ahmed, **T. Y. Al-Naffouri**, Ibrahim Hoteit, Furrukh Sana, *Apparatus and method for wireless monitoring using ultra-wideband frequencies*, US patent no. 9532735, 2013.
4. **T. Y. Al-Naffouri**, N. Al-Dhahir, and M. S. Sohail, *OFDM inter-carrier interference cancelation method*, US patent no. 8223862, Jul 17, 2012.
3. **T. Y. Al-Naffouri** and A. A. Quadeer, *Cyclic Prefix Based Enhanced Data Recovery Method*, US patent no. 8194799, Jun 5, 2012.
2. G. Caire, **T. Y. Al-Naffouri**, and A. A. Quadeer, *Method of estimating and removing noise in OFDM systems*, US patent no. 8213525, Jul 3, 2012.
1. G. Alrawi, A. Bahai, **T. Y. Al-Naffouri**, and J. Cioffi, *Coded OFDM system using error control coding and cyclic prefix for channel estimation*, US patent no. 7633849, Dec 15, 2009.

## PROJECTS

### KFUPM Funded

18. Convergence and Steady-State Analysis of the Leaky Least Mean Fourth Algorithm: Applications to Mobile Communications, *funded by DSR, King Fahd University of Petroleum & Minerals*, May. 2013 – May 2015. (Principal Investigator)
17. Signal Strength based Indoor Localization with No Deployment Effort, *funded by DSR, King Fahd University of Petroleum and Minerals*, Dec 2013 – May 2015.

16. Seismic Deconvolution of Sparse Reflectivity using Compressive Sensing Techniques, *funded by DSR, King Fahd University of Petroleum and Minerals*, May 2013 – May 2015. (Principal Investigator)
15. Channel Estimation for Massive MIMO Communication Systems, *funded by DSR, King Fahd University of Petroleum & Minerals*, May. 2012 – May 2013. (Principal Investigator)
14. Statistical Characterization of Indefinite Quadratic Forms and their Applications, *funded by Deanship of Scientific Research, King Fahd University of Petroleum & Minerals*, Dec 2011 – Nov. 2012. (Principal Investigator)
13. Low Complexity Blind Equalization for SISO Systems with General Constellations, *funded by Deanship of Scientific Research, King Fahd University of Petroleum & Minerals*, Jan. 2011 – Jul. 2012. (Principal Investigator)
12. A structured Bayesian approach for block sparsity recovery, *funded by Deanship of Scientific Research, King Fahd University of Petroleum & Minerals*, Sep. 2010 – Jan. 2012. (Principal Investigator)
11. Blind channel estimation of OFDM system by relying on the Gaussian assumption of the input, *funded by Deanship of Scientific Research, King Fahd University of Petroleum & Minerals*, Sep. 2009 – Oct 2011. (Principal Investigator)
10. PAPR Reduction of OFDM Signals by Compressed Estimation, *funded by Deanship of Scientific Research, King Fahd University of Petroleum & Minerals*, Sep. 2010 – Aug. 2011. (Principal Investigator)
9. DOA and SNR estimation in time-variant Rayleigh fading channels, *funded by Deanship of Scientific Research, King Fahd University of Petroleum & Minerals*, Mar. 2009 – Mar. 2010. (Principal Investigator)
8. Using the Cyclic Prefix for Blind Equalization in OFDM, *funded by Deanship of Scientific Research, King Fahd University of Petroleum & Minerals*, Sep. 2008 – Oct. 2009. (Principal Investigator)
7. Broadcasting Data to Multiple User Groups: Information Theoretic Investigation of the Wide Band Case, *funded by Deanship of Scientific Research, King Fahd University of Petroleum & Minerals*, Jul. 2007 – Mar. 2009. (Principal Investigator)
6. Free Deconvolution for Seismic Applications, *Jointly Funded Project by L'Ecole Supérieure d'électricité (Supélec), Paris, France and King Fahd University of Petroleum & Minerals*, Jun. 2008 – Dec. 2008. (Co-Investigator)
5. Enhancing Student Participation in Extra Curricular Activities and Interaction with the Faculty, *A Project of KFUPM's Strategic Plan*, Mar. 2007 – Jun. 2008. (Co-investigator)
4. The Effect of Spatial Correlation on the Capacity of Multi-Input Multi-Output Broadcast Channels with Partial Side Information, *funded by Deanship of Scientific Research, King Fahd University of Petroleum & Minerals*, Mar. 2007 – Feb. 2008.
3. Frequency Domain Estimation of Time Variant Channels in OFDM, *Junior Faculty Project, funded by Deanship of Scientific Research, King Fahd University of Petroleum & Minerals*, Jun. 2006 – May. 2007. (Principal Investigator)
2. Establishing Entrepreneurial and Value-added Programs, *A Project of KFUPM's Strategic Plan*, Mar. 2006 – Jun. 2007. (Co-investigator)
1. Online Development of the Undergraduate Communication Engineering Course, *funded by Deanship of Academic Development, King Fahd University of Petroleum & Minerals*, May 2006 – Jun. 2007. (Co-investigator)

## **Annual King Abdul-Aziz City of Science and Technology (KACST) and National Science, Technology, and Innovation Plan (NSTIP) funded projects**

9. Improving the performance of an Ultrasonic/Passive Infrared-based Urban Flood Sensor Network, *submitted to National Science, Technology, and Innovation Plan (NSTIP)*, proposed budget: \$310,200.00.
8. Performance of Distributed Estimation of Unknown Parameters in WSNs with Practical Wireless Channel and Observation Models, *funded by National Science, Technology, and Innovation Plan (NSTIP)*, total fund: \$132,712.00; Principal Investigator, Sep 2014 - Oct 2016 .
7. Compressive Sensing for Feedback Reduction in MIMO Broadcast Channels, *funded by National Science, Technology, and Innovation Plan (NSTIP)*, Co-Investigator, Jun 2010 - Jun 2012. (Co-investigator)
6. Distributed localization of impulsive acoustical sources algorithms and prototype implementation, *funded by National Science, Technology, and Innovation Plan (NSTIP)*, total fund: \$222,930.92; Co-Investigator, Jun 2010 - Jun 2012.
5. Narrow Band Interference Cancellation in MIMO-OFDM systems using Compressed Sensing, *funded by National Science, Technology, and Innovation Plan (NSTIP)*, total fund: \$205,708.56; Co-Investigator, June 2010 - May 2012.
4. Wireless Network Optimization and Planning for WiMAX, *funded by King Abdul-Aziz City of Science and Technology*, total fund: \$356,017.64; Co-Investigator, Jun 2009 - Jun 2011.
3. Estimation of Time-Variant Channels and ICI Cancellation in OFDM, *funded by King Abdul-Aziz City of Science and Technology*, Dec 2007 – Oct 2009.
2. Physically Motivated Wide Band Wireless Channel Characterization, *funded by National Science, Technology, and Innovation Plan (NSTIP)*, total fund: \$255,483.85; Co-Investigator, Sep 2009 - Aug 2011.
1. Postcompensation of Transmitters Nonlinear Distortions at the Receiver Using Compressive Sensing Techniques for OFDM Applications, *funded by National Science, Technology, and Innovation Plan (NSTIP)*, total fund: \$200,323.24; Co-Investigator, Mar 2012 - Feb 2014.

## **Industrial Projects**

2. Estimation and cancellation of impulsive noise in DSL lines, *funded by Saudi Telecom Company (STC)*, Sep. 2009 May 2010. (Principal Investigator)
1. The Near-Surface Seismic Investigation Consortium, *A Consortium Funded by Saudi Aramco and Schlumberger*, Jan. 2007 - Jan. 2008. (Co-investigator)

## **KAUST Funded**

3. Achieving Full Potentials of Massive MIMO Systems: Theories and Algorithms, March 2015-Feb. 2016, (US\$ 1,079,500).
2. Advanced Public Safety Communication Infrastructure for the Middle East, Sep 2012– Sep 2014 (US\$ 592,650). (Co-investigator)
1. Energy and Spectrum Efficient Passive Radar for Detection and Imaging, Jan 2014 – Jan 2017 (US\$ 541,531). (Co-investigator)

## **TALKS**

74. “Detection and Estimation Using Regularized Least Squares: Performance Analysis and Optimal Tuning Under Uncertainty”, *Signals, Information, and Algorithms Lab, MIT*, Feb. 8, 2018.

73. "Detection and Estimation Using Regularized Least Squares: Performance Analysis and Optimal Tuning Under Uncertainty" *Mathematical and Algorithmic Sciences Lab, Huawei Technologies Paris, France*, Jan 19, 2018.
72. "On The Use Of Structure In Signal Processing Analysis And Design," EE Program Seminar, *King Abdullah University of Science and Technology KAUST*, Oct. 22, 2017.
71. "Distribution Agnostic Structured Sparsity Recovery: Algorithms and Applications," *Univ. de Nice Sophia-Antipolis, Nice*, Apr. 21, 2016.
70. "Ultra-wideband Communications and Localization: Challenges and Solutions," *KAUST-NSF Conference, KAUST*, Mar. 16, 2016.
69. "Bounded Perturbation Regularization for Linear Least Squares Inverse Problems," *Earth Sciences Seminar, KAUST*, Feb. 24, 2016.
68. "Bounded perturbation regularization for linear least squares inverse problems," *Information Theory and Applications Symposium, San Diego*, Feb. 4, 2016.
67. "Distribution Agnostic Structured Sparsity Recovery: Algorithms and Applications," *Department of Computer Science Colloquium Western Michigan University*, Jan. 26, 2016.
66. "Distribution Agnostic Structured Sparsity Recovery: Algorithms and Applications," *Technische Universität, Darmstadt, Germany*, Oct 15, 2014.
65. "Distribution Agnostic Structured Sparsity Recovery: Algorithms and Applications," *Hungarian Academy of Sciences, Institute for Computer Science and Control, Budapest, Hungary*, July 23, 2014.
64. "Distribution Agnostic Structured Sparsity Recovery: Algorithms and Applications," *Alcatel-Lucent Bell Labs, Paris, France*, Jun 19, 2014.
63. "Distribution Agnostic Structured Sparsity Recovery: Algorithms and Applications," *Technische Universität, München, Germany*, Jun 11, 2014.
62. "An Introduction to (Bayesian) Compressed Sensing with Applications in Communication, Signal and Image Processing," *Université Paris-Est Marne-La-Vallée, Paris, France*, May 31, 2014.
61. "Bayesian Sparse Recovery: A Distribution Agnostic Approach with Applications," *VCC Summit, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*, Apr 14, 2014.
60. "An Introduction to (Bayesian) Compressed Sensing with Applications in Communication and Signal Processing," *TexasA&M University, Qatar*, Mar 31, 2014.
59. "Bayesian Sparse Recovery: A Distribution Agnostic Approach with Applications to PAPR Reduction in OFDM and Massive MIMO," *INPT, Rabat, Morocco*, Mar 20, 2014.
58. "An Introduction to (Bayesian) Compressed Sensing with Applications in Communication and Signal Processing," *SS5G 2014, SupCom, Tunisia*, Mar 17, 2014.
57. "Bayesian Sparse Recovery: Distribution Agnostic Approach with Applications to PAPR Reduction in OFDM and Massive MIMO," *King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*, Feb 8, 2014.
56. "Impulse Noise Estimation and Cancellation in OFDM Systems," *ASSIA, Santa Clara, CA*, Apr. 4, 2013.
55. "Receiver-Based Bayesian PAPR Reduction in OFDM," *Qualcomm, Santa Clara, CA*, Apr. 5, 2013.
54. "Structured Sparsity: Bayesian Recovery Algorithms and Applications," *Keynote speech, WOSSPA, Algeria, Algeria*, May 2013.
53. "Distribution Agnostic Structured Sparsity Recovery Algorithms and Applications," *SupCom, Tunisia*, May 17, 2013.

52. "Structured Sparsity: Bayesian Recovery Algorithms and Applications," *University of Toronto*, June 6, 2013.
51. "Structured Sparsity: Bayesian Recovery Algorithms and Applications," *University of Ontario Institute of Technology*, June 12, 2013.
50. "Structured Sparsity: Bayesian Recovery Algorithms and Applications," *École Polytechnique de Montréal*, Montreal, June 13, 2013.
49. "Structured Sparsity: Bayesian Recovery Algorithms and Applications," *Georgia Institute of Technology*, June 17, 2013.
48. "Structured Sparsity: Bayesian Recovery Algorithms and Applications," *The University of Akron*, Akron, Ohio, June 20, 2013.
47. "Bayesian Estimation of Sparse Signals with Applications in Signal Processing and Communications," *A tutorial at EUSIPCO*, Marrakesh, Sep. 9, 2013.
46. "A Bayesian Approach to multi-channel (Blind) Deconvolution," *KFUPM-GA Tech workshop, King Fahd University of Petroleum and Minerals (KFUPM)*, Dhahran, Saudi Arabia, Dec. 17, 2012.
45. "Compressed Sensing: An overview and an application to Seismic Deconvolution," *Earth Sciences Seminar, King Abdullah University of Science and Technology (KAUST)*, Thuwal, Saudi Arabia, Nov. 6, 2012.
44. "Structure Based Bayesian Sparse Reconstruction," *Electrical Engineering Department, University of Akron*, Akron, Ohio August 24, 2012.
43. "Structure Based Bayesian Sparse Reconstruction," *Electrical Engineering Department Northwestern University*, Evanston, IL, July 11, 2012.
42. "Structure Based Bayesian Sparse Reconstruction," *Electrical Engineering Department American University of Beirut*, Lebanon, May 11, 2012.
41. "Combating Impairments of OFDM Systems: A Model Reduction Approach," *Electrical Engineering Department King Abdullah University of Science and Technology (KAUST)*, Thuwal, Saudi Arabia, Jan. 4, 2012.
40. "Combating Impairments of OFDM Systems Electrical Engineering Department," *Masdar Institute*, Abu Dhabi, United Arab Emirates, Oct. 13, 2011.
39. "Progress in Collaboration between KFUPM & KAUST," *KFUPM's International Advisory Board at KAUST*, Thuwal, Saudi Arabia, Jan. 12, 2010.
38. "A Model Reduction Approach for OFDM Channel Estimation Under High Mobility Conditions" *Electrical Engineering Department, King Fahd University of Petroleum and Minerals* Mar. 1, 2011
37. "An Overview of KFUPM" *King Abdullah University of Science & Technology* Dec. 1, 2010
36. "Combating Some Impairments of OFDM Systems: A Model Reduction Approach" *Electrical Engineering Department, Stanford University* Aug. 30, 2010
35. "The Potential of Compressive Sensing in (Seismic) Signal Processing" *Workshop on KFUPM-GA Tech Joint Research Program, King Fahd University of Petroleum and Minerals* Jun. 21, 2010 [Abstract]
34. "Indefinite quadratic forms in Gaussian random variables: Distribution, scaling, and applications," *Electrical Engineering Department, Texas A & M Qatar*, Jun. 3rd, 2009.
33. "Writing with two languages: Symbols & Words" *Electrical Engineering Department, King Fahd University of Petroleum and Minerals*, Apr. 7, 2009.
32. "Indefinite quadratic forms in Gaussian random variables: Distribution, scaling, and applications," *Electrical Engineering Department, American University of Beirut*, Feb. 19, 2009.

31. "An Overview of Research Interests and Contributions," *KFUPM's International Advisory Board, SABIC Head Quarters*, Riyadh, Saudi Arabia Jan. 12, 2009.
30. "Indefinite quadratic forms in Gaussian random variables: Distribution, scaling, and application to the broadcast channel," *Electrical Engineering Department, University of Texas at Dallas, TX*, Sep. 4, 2008.
29. "Indefinite quadratic forms in Gaussian random variables: Distribution, scaling, and application to the broadcast channel," *Electrical Engineering Department, Smart Antenna Research Group, Stanford University, CA*, Aug. 22, 2008.
28. "Scaling laws of multiple antenna (group) broadcast channels," *Electrical Engineering Department, University of California at Irvine, CA*, Jun. 18, 2008.
27. "Scaling laws of multiple antenna (group) broadcast channels," *Electrical Engineering Department, University of Southern California, CA*, Feb. 20, 2008.
26. "(Semi) blind channel identification and equalization in OFDM," *Babak Hassibi's Research Group, Electrical Engineering Department, California Institute of Technology, Pasadena, CA*, Feb. 15, 2008.
25. "Scaling laws of multiple antenna group-broadcast channels," *Ecole Supérieure d'Electricité (Supélec)*, Paris, France, Jul. 6, 2007.
24. "How much does correlation affect the sum-rate of MIMO downlink channels?" *Institute Eurcom, Sophia-Antipolis, France*, Jun. 21, 2007.
23. "The potential of adaptive filtering for seismic signal processing," *Research Institute, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia*, May 15, 2007.
22. "Broadcasting data to multiple user groups: Information theoretic investigation of the wide band case," *Electrical Engineering Department, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia*, May 1st, 2007.
21. "Opportunistic scheduling in wireless networks: An overview of issues and design considerations," (jointly with Dr. Yahya Al-Harhi (KFUPM) and Dr. Mohamed-Slim Alouini (Texas A & M Qatar), Tutorial at the *International Symposium on Signal Processing and its Applications (ISSPA 2007)*, Sharjah, UAE, Feb. 11, 2007.
20. "Employing undergraduates as teaching assistants at KFUPM," *Deanship of Academic Development, Center of Teaching and Learning, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia*, Jan. 16, 2007.
19. "The effect of spatial correlation on the capacity of MIMO broadcast channels with partial side information," *Electrical Engineering Department, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia*, Jan. 13, 2007.
18. "How much does correlation affect the sum-rate of MIMO downlink channels?" *Electrical Engineering Department, Imperial College, London, UK*, Nov. 23, 2006.
17. "A unified approach to mean-square analysis of adaptive filters," *Electrical Engineering Department, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia*, Nov. 20, 2006.
16. "How much does correlation affect the sum-rate of MIMO downlink channels?" *Research Department, Intel Corporation, Santa Clara, CA*, Aug. 22, 2006.
15. "Broadcasting data to multiple user groups: An information theoretic investigation," *Babak Hassibi's Research Group, Electrical Engineering Department, California Institute of Technology, Pasadena, CA*, Jul. 29, 2006.
14. "A framework for the estimation of time-variant channels in OFDM," *Delft Technical University, Delft, the Netherlands*, Jun. 9th, 2006.

13. "A forward backward Kalman for the estimation of time-variant channels in OFDM," *Electrical Engineering Department, King Fahd University of Petroleum and Minerals*, Dhahran, Saudi Arabia, Nov. 16, 2005.
12. "A framework for the estimation of time-variant channels in OFDM," *the University of New Louvain*, Belgium, Nov. 2nd, 2005.
11. "A unified approach to mean-square analysis of adaptive filters," *the University of New Louvain*, Belgium, Nov. 2nd, 2005.
10. "A framework for the estimation of time-variant channels in OFDM," *Telecommunications Research Center*, Vienna, Austria, Oct. 28, 2005.
9. "Wireless broadband networks–WIMAX: A contrast and a complement to WiFi," (jointly with Dr. Salam Zummo) *Internet and Communications Engineering Technical Exchange Meeting (e-CETEM)*, Saudi Aramco, Dhahran, Saudi Arabia, Sep. 19, 2005.
8. "A unified approach for transient analysis of adaptive filters," *Babak Hassibi's Research Group, Electrical Engineering Department, California Institute of Technology*, Pasadena, Mar. 25th, 2005.
7. "Receiver design for MIMO-OFDM transmission over time-variant frequency selective channels," Standards Group, *Qualcomm Corporation*, San Diego, Jun. 18th, 2004.
6. "Receiver design for MIMO-OFDM transmission over time-variant frequency selective channels," Communications Systems Lab., *Texas Instruments*, Dallas, TX, Feb. 23, 2004.
5. "Adaptive semi-blind receiver for MIMO-OFDM transmission," *ATHEROS Communications*, Sunnyvale, CA, Dec. 23, 2003.
4. "Receiver design for MIMO OFDM transmission over time-variant channels," *TZero Technologies Inc.*, Sunnyvale, CA, Jan. 27, 2004.
3. "An OFDM receiver for MIMO OFDM transmission over wireless channels," *Intel Corporation*, Sunnyvale, CA, Dec. 19, 2003.
2. "A semi-blind algorithm for OFDM transmission over wireless channels," *Stanford Networking Research Group*, Stanford University, Apr. 10, 2003.
1. "Adaptive algorithms for wireless channel estimation" Qualcomm Technology Ventures," *Qualcomm Corporation*, San Diego, Apr. 3, 2003.