

## Curriculum Vitae

### Mohamed IBNKAHLA, PhD, PEng

Department of Electrical and Computer Engineering,  
Walter Light Hall, Room 408  
Queen's University  
Kingston ON K7L 3N6  
CANADA

Telephone: (613) 533-3074

Fax: (613) 533-6615

Email : [ibnkahla@post.queensu.ca](mailto:ibnkahla@post.queensu.ca)

#### EDUCATION

<b>H.D.R. (Degree of ability to lead and supervise research)</b> <b>Signal Processing and Telecommunications</b> National Polytechnic Institute of Toulouse, France (INPT)	<b>12/1998</b>
<b>Ph.D., First Class Honors</b> <b>Signal Processing and Telecommunications</b> INPT	<b>09/1996</b>
<b>Diplome d'Etudes Approfondies (DEA), First Class Honors</b> <i>Equivalent to M.Sc. Degree</i> <b>Signal Processing and Telecommunications</b> INPT	<b>09/1992</b>
<b>Engineering Degree in Electronics</b> INPT	<b>06/1992</b>
<b>Classes préparatoires</b> (preparation for admission to French Engineering Schools) <b>Mathematiques Speciales</b> Lycee Hoche, Versailles, France	<b>1986-1989</b>

#### WORK EXPERIENCE

<b>Associate Professor (with tenure)</b> Department of Electrical and Computer Engineering Queen's University, Canada	<b>July 2004-</b>
<b>Assistant Professor</b> Department of Electrical and Computer Engineering Queen's University, Canada	<b>2000-2004</b>

<b>Assistant Professor</b> Department of Electronics INPT, France	<b>1996-1999</b>
<b>Project Leader</b> SODIT Inc., France	<b>1998-1999</b>
<b>Project Leader</b> MIDIVALEUR Inc., France	<b>1996-1997</b>

<b>AWARDS</b>
---------------

<b>Favorite Professor Award</b> Department of Electrical and Computer Engineering, Queen's University, Canada	<b>05/2004</b>
<b>Prime Minister's Research Excellence Award (PREA)</b> Ontario, Canada	<b>04/2001</b>
<b>Leopold Escande Medal for excellence in research</b> INPT, France	<b>06/1997</b>
<b>Full scholarship from the French Ministry of Higher Education and Research</b> PhD studies	<b>1992-1996</b>
<b>Full Scholarship from the French Government</b> Undergraduate and MSc studies	<b>1989-1992</b>

<b>TRAINING OF HIGHLY QUALIFIED PERSONNEL</b>
---

**5 Postdoctoral Fellows**  
**5 PhD students + 6 on-going.**  
**18 MSc students + 6 on-going.**  
**46 final year undergraduate projects and summer students + 2 on-going.**

<b>SERVICE TO THE PROFESSION</b>
----------------------------------

- General Chair, Queen's Biennial Symposium on Communications (QBSC), Kingston, May 2012.
- Associate Editor, EURASIP Journal on Applied Signal Processing, 2009-.
- Guest Editor, EURASIP Journal on Applied Signal Processing, Special Issue on Simulation and Testbeds for Wireless Communications, 2009.
- Series Editor, Wireless Communications Series, CRC Press, 2008-.
- Associate Editor, International Journal of Communication Systems, 2007-.
- Co-General Chair, QBSC'2010, Kingston, May 2010.
- Technical Program co-chair, QBSC, Kingston, June 2008.
- Technical Program co-chair, ISSPA'2007 (IEEE International Symposium on Signal Processing and its Applications), Feb. 12-17, 2007, UAE.

- Chair and organizer, Special session, ISSPA'2007, Feb. 12-17, 2007, UAE. Session title: 'Adaptive processing in communications'.
- Co-chair, technical program committee, Queen's Biennial Symposium on Communications, June 2008.
- Chair, technical program subcommittee for 'Wireless communications', Queen's Biennial Symposium on Communications, Queen's University, June 2004.
- Special session organizer and chair, International symposium on signal processing and its applications (SSPA 2003), Paris, France, July 2003. Session title: 'Adaptive signal processing for wireless communications'.
- Session chair, ISSPA 2001, Kuala Lumpur, Malaysia, August 2001). Session title: 'Adaptive signal processing'
- Session chair, IASTED International conference on Wireless and Optical Communications (WOC), 14-16 July 2003, Banff, Alberta. Session title: 'CDMA systems'.
- Session chair, IASTED International conference on Neural Networks and Computational Intelligence, (NCI), May 19-22, 2003, Cancun, Mexico. Session title: 'Neural Networks and Applications'.
- Chair, technical program subcommittee for 'Wireless communications and networking', Queen's Biennial Symposiums on Communications, Queen's University, June 2002.
- Technical program committee member and reviewer in several conferences such as ISSPA, VTC, ICC, ICASSP, CCECE, etc.
- Reviewer in several international journals and conferences, including IEEE Trans. Signal Processing, IEEE Trans. Communications, IEEE Trans. Wireless Communications, ICC, ICASSP, GLOBECOM.

#### External examiner for more than 25 PhD and MSc thesis examinations in Canada and abroad

<b>TUTORIALS, INVITED TALKS AND SEMINARS</b>
--

- **INVITED TUTORIAL PRESENTATIONS IN INTERNATIONAL CONFERENCES**

- Tu1. M. Ibnkahla, "Cognitive wireless sensor networks", International Conference in Telecommunications (ICT 2010), Doha, Qatar, April 2010. **(invited tutorial)**.
- Tu2. M. Ibnkahla, "Wireless Sensor Networks: Principles and Applications", International Summer School on Signal Processing and its Applications (ISSSPA'09), Oran, Algeria, October 2009 **(invited tutorial)**.
- Tu3. M. Ibnkahla, "Adaptation in wireless communications: From adaptive signal processing to cross-layer adaptation", IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Las Vegas, USA, March 2008. **(invited tutorial)**
- Tu4. M. Ibnkahla, "Adaptive Processing and Cross-layer Design in Wireless Networks", IEEE Global Telecommunications Conference (GLOBECOM), Washington, DC, USA, November, 2007. **(invited half-day tutorial)**.
- Tu5. M. Ibnkahla, *Neural Networks for Wireless Communications*, ISSPA, Paris, France, August 2003. **(invited tutorial)**

- **OTHER INVITED TALKS/PRESENTATION:**

- IT1. *Cognitive Wireless Sensor networks for Highway Safety*, NSERC DIVA Network Meeting, Ottawa, 10 September 2011.
- IT2. *Applications of Wireless Sensor Networks in Engineering: Challenges and Future Trends*, American University of Sharjah, November 2010. (invited presentation)
- IT3. *Wireless Sensor Networks for Highway Safety*, Ontario Ministry of Transportation, June 2010. (invited presentation)
- IT4. *Wireless Sensor Networks for Food Safety Risk Monitoring*, Ontario Ministry of Food, Agriculture and Rural Affairs (OMAFRA) Food Safety Research Forum, May 2010. (invited presentation)
- IT5. *Wireless Sensor Networks for Environment Monitoring*, Geopositioning Workshop 2010, Niagara College, Canada, April 2010. (invited talk)
- IT6. *Wireless sensor networks: Principles and Applications*, invited seminar, Institut National des Sciences Appliquées (INSA), Lyon, France, October 2009.
- IT7. *Wireless sensor networks: Technologies and challenges*, full-day seminar, Ecole Nationale Supérieure des Telecommunications (Sup'Com), Tunis, Tunisia, January 2009.
- IT8. *Wireless sensor networks for natural resources monitoring*, University of Calgary, November 12, 2008.
- IT9. *Wireless sensor networks for forest monitoring*, York University, February 2008.
- IT10. *Wireless sensor networks for wild life tracking and forest monitoring*, Ontario Ministry of Natural Resources, October 2007.
- IT11. *Adaptive signal processing and cross-layer design in digital communications*, full-day seminar, Ecole Nationale Supérieure des Telecommunications (Sup'Com), Tunis, Tunisia, February 2007.
- IT12. *Sensor networks: Applications and challenges*, ISSPA2007, UAE, invited talk, 13 Feb. 2007.
- IT13. *Traitement adaptatif du signal en télécommunications numériques*, invited seminar at Ecole Nationale Supérieure des Telecommunications (ENST), Paris, France, June 26, 2006.
- IT14. *Adaptive signal processing and neural networks for wireless communications*, invited seminar, INPG, Grenoble, France, June 22, 2006.
- IT15. *Neural Networks for nonlinear MIMO system identification*, invited seminar, University of Sharjah, UAE, June 1, 2006.
- IT16. *Adaptive Signal Processing for Wireless Communications*, invited seminar, Etisalat University College, UAE, May 22, 2006.
- IT17. *Hardware implementation of wireless MIMO systems on ALTERA Stratix board*, invited seminar at ALTERA Corporation, San Jose, USA, 28 September 2004.
- IT18. *Applications of Neural Networks to Wireless Communications*, International Summer School of Signal Processing in Communications, Alger, Algeria, September 2004.
- IT19. *Adaptive Signal Processing for Digital Communications*, University of Alberta, ECE Department, 20 February, 2003 (invited seminar).
- IT20. *Adaptive Signal Processing for Digital Communications*, School of Information Technology, University of Ottawa, 24 January 2003 (invited seminar).
- IT21. *Recent Advances in Neural Network Applications for Digital Communications*, University of Alberta, ECE Department, 28 June 2002 (invited seminar).
- IT22. *Neural Networks for Signal Processing and Communications*, IEEE Kingston section, Queen's University, April 2000 (invited seminar).
- IT23. *Neural Network Applications to Digital Communications: A Survey*, COST 254 Conference, Toulouse, France, July 1997 (**plenary talk**).
- IT24. *Neural Networks : Theory and Practice*, Ecole Polytechnique de Montréal, October 1998. (invited seminar)
- IT25. *Réseaux de neurones : Théorie et applications*, Département d'Electronique, Faculté de Sciences de Monastir, Tunisie, October 1997 (invited seminar).
- IT26. *Réseaux de neurones : Théorie et applications*, ENIT, Tunis, Tunisie, October 1997 (invited seminar).
- IT27. *Neural Networks For Digital Communications*, Université d'Ottawa, July 1997 (Invited seminar).

- IT28. *Réseaux de Neurones en Télécommunications*, Ecole Nationale d'Aviation Civile (ENAC), Toulouse, France, Decembre 1996 (invited seminar).
- IT29. *Algorithmes biologiques : Fondements théoriques et applications*, INPT, Toulouse, France, Decembre 1994 (invited seminar).
- IT30. *Réseaux de neurones : Développements récents*, INPT, Toulouse, France, March 1994 (invited seminar).
- IT31. *Réseaux de neurones : Architectures, algorithmes et applications*, INPT, Toulouse, France, June 1993 (invited seminar).

## PUBLICATIONS

### • PATENTS

- [Pat1] A. Al-Maaitah, H. Hassanein, and M. Ibnkahla, "Modulation Silencing for UHF passive RFID tags", Invention disclosure, PARTEQ, 2011.
- [Pat2] M. Ibnkahla, P. Hu, G. Vijay, C. Tang, S. Zhao, V. Kan, "Autonomous light-weight GPS-based wireless tracking system", Invention disclosure, PARTEQ Innovations, 2009.
- [Pat3] M. Ibnkahla, A. Almaaitah, A. AbuAlkheir, B. AlNabulsi, Z. Eljabi, F. Alturjeman, "A small light-weight wireless sensor network for environment monitoring", Invention disclosure, PARTEQ Innovations, 2009.

### • BOOKS (AUTHORED)

- B1. M. Ibnkahla, *Wireless Sensor Networks: A Cognitive Approach*, Taylor and Francis Publishers, CRC Press, Boca Raton, FL, USA (expected in 05/2012).

### • BOOKS (EDITED)

- B2. M. Ibnkahla Ed., *Adaptive Signal Processing in Wireless Communications*, CRC Press (*Adaptation in Wireless Networks Series*), Boca Raton, FL, USA, August 2008 (15 chapters, 500 pages).
- B3. M. Ibnkahla Ed., *Adaptation and Cross-Layer Design in Wireless Networks*, CRC Press (*Adaptation in Wireless Networks Series*), Boca Raton, FL, USA, 500 pages, August 2008 (15 chapters, 500 pages).
- B4. M. Ibnkahla Ed., *Signal Processing for Mobile Communications Handbook*, CRC Press, Boca Raton, FL, USA, July 2004 (28 chapters, 840 pages).

### • PEER REVIEWED BOOK CHAPTERS

- BC1. H.S. Hassanein, A. Sulyman and M. Ibnkahla, "Adaptations for optimized performance in WiMAX networks", in Y. Zhang, Ed., *Handbook of WiMAX Networks Planning and Optimization*, Taylor and Francis Publishers, 2009.
- BC2. M. Ibnkahla and A. Al-Hinai, "Adaptive modeling and identification of nonlinear MIMO channels

- using neural networks”, book chapter in M. Ibnkahla Ed., *Adaptive Signal Processing in Wireless Communications*, CRC Press, Boca Raton, FL, USA, August 2008.
- BC3. A. Alemdar and M. Ibnkahla, “A survey of wireless sensor networks technologies, challenges and future trends”, in M. Ibnkahla Ed. *Adaptation and Cross-Layer Design in Wireless Networks*, CRC Press, Boca Raton, FL, USA, August 2008.
- BC4. H. Hassanein, A.I. Sulyman, and M. Ibnkahla “Adaptations for optimized performance in WiMAX Networks,” *WiMax Network Planning and Optimization*, (Ed. Y. Zhang), Auerbach Publications, CRC Press, 2008. **(invited)**
- BC5. M. Ibnkahla, A. Sulyman and Y. Cao, "Adaptive signal processing for wireless communications", book chapter in R. C. Dorf Ed., *The Electrical Engineering Handbook*, 3<sup>rd</sup> Edition, CRC Press, 2006 **(invited)**.
- BC6. Sulyman and M. Ibnkahla, "MIMO transmission over wireless channels", book chapter in *The Wiley Encyclopedia of RF and Microwave Engineering*, 2005 **(invited)**.
- BC7. M. Ibnkahla, "Adaptive and analytical modeling of nonlinear high power amplifiers", book chapter in *The Wiley Encyclopedia of RF and Microwave Engineering*, 2005 **(invited)**.
- BC8. H. Al-Asady, M. Ibnkahla and Q. Rahman, "Signaling constellations for nonlinear channels", in M. Ibnkahla Ed., *Signal Processing for Mobile Communications Handbook*, CRC Press, 2004.
- BC9. M. Ibnkahla and Y. Jun, “Neural networks for transmission over nonlinear channels”, in M. Ibnkahla Ed., *Signal Processing for Mobile Communications Handbook*, CRC Press, 2004.
- BC10. Q. Rahman and M. Ibnkahla, "Wireless communications: Technologies and challenges", in M. Ibnkahla Ed., *Signal Processing for Mobile Communications Handbook*, CRC Press, 2004.
- BC11. M. Ibnkahla, “Nonlinear Channel Identification Using Natural Gradient Descent: Application to Modeling and Tracking”, in L. Wang Ed., *Soft Computing for Communications*, Springer-Verlag, pp. 55-70, 2003 **(invited)**.
- BC12. M. Ibnkahla and F. Castanié, "Neural networks for signal processing and communications: Overview and new results", in E. Biglieri and M. Luise Eds., *Signal Processing in Communications*, Springer-Verlag, London-New York, January 1996 **(invited)**.

- **PEER REVIEWED JOURNAL PAPERS**

- J1. B. Al-Nabulsi and M. Ibnkahla, "Data-aided fast-fading channel estimation using nonuniform Sampling Methods", *IEEE Transactions on Wireless Communications* (under 2<sup>nd</sup> review).
- J2. P. Hu and M. Ibnkahla, "Fairness and consensus protocol for spectrum sharing in cognitive radio ad hoc and sensor networks," *IEEE Transactions on Vehicular Technology*, June 2011, (under review).
- J3. P. Hu and M. Ibnkahla, "A cognitive MAC protocol with mobility support in cognitive radio ad hoc networks: Protocol design and performance analysis" *IEEE Transactions on Vehicular Technology*, November 2011 (under review).
- J4. A. Abu Alkheir and M. Ibnkahla, “Incumbent user protection and spectrum management in ECMA-392 cognitive radio networks”, *IEEE Vehicular Technology Magazine*, May 2011 (under 2<sup>nd</sup> review).
- J5. A. Abu Alkheir and M. Ibnkahla, “Performance analysis of Decode and Forward incremental relaying in a spectrum sharing environment”, *IEEE Transactions on Wireless Communications*, October 2011 (under 2<sup>nd</sup> review).
- J6. A. Abu Alkheir and M. Ibnkahla, “Performance analysis of DF/AF incremental relaying in spectrum sharing environments with arbitrary numbers of interferers”, *IEEE Transactions on Vehicular Technology*, November 2011 (under review).
- J7. F. Al-Turjman, H. Hassanein, and M. Ibnkahla, “Efficient deployment of wireless sensor networks targeting environment monitoring applications”, *Elsevier Computer Communications*

- Journal, 2010. (under review).
- J8. F. Al-Turjman, H. Hassanein, and M. Ibnkahla, "Quantifying connectivity in wireless sensor networks with grid-based deployments", *IEEE Transactions on Wireless Communications Journal*, 2010. (under 2<sup>nd</sup> review).
- J9. F. Al-Turjman, H. Hassanein, and M. Ibnkahla, "Grid-based deployment for WSNs in outdoor environment monitoring", *IEEE Transactions on Distributed and Parallel Systems*, 2011. (under 2<sup>nd</sup> review).
- J10. X. Zhao E. Bdira, and M. Ibnkahla, "Joint adaptive modulation and adaptive MAC protocols for wireless sensor networks," *IEEE Trans. Wireless Communications* (under review).
- J11. A. Alemdar, M. Ibnkahla, and H. Al-Asady, "Link adaptation for energy constrained nodes," *IEEE Trans. Signal Processing* (under review).
- J12. A. Abu Alkheir and M. Ibnkahla, "Performance analysis of cognitive radio relay networks using selection relaying over Rayleigh fading channels", *IEEE Transactions on Wireless Communications*, October 2011 (accepted).
- J13. F. Al-Turjman, H. Hassanein and M. Ibnkahla, "Optimized Relay Placement for Wireless Sensor Networks Federation in Environmental Applications", *Wiley Journal on Wireless Communications and Mobile Computing*, in press
- J14. G. Vijay, E. Bdira and M. Ibnkahla, "Cognitive techniques and architectures in wireless sensor networks," *IEEE Sensors Journal*, vol. 11, No. 3, pp. 582-592, March 2011.
- J15. A. Sulyman and M. Ibnkahla, "Performance of MIMO systems with antenna selection over nonlinear fading channels", *IEEE Journal in Selected Topics in Signal Processing*, Vol. 2, pp.159-170, April 2008.
- J16. H. Al-Asady, M. Ibnkahla, and Q. Rahman , "Symbol error rate calculation and data predistortion for 16-QAM transmission over nonlinear memoryless satellite channels", *Wiley Wireless Communications and Mobile Computing Journal*, Vol. 8, pp. 137-153, 2008.
- J17. A. Sulyman and M. Ibnkahla, "Performance analysis of nonlinearly amplified M-QAM signal in MIMO channels", *European Transactions in Communications*, vol. 19, No. 1, pp. 15-22, January 2008.
- J18. H. Al-Asady, M. Ibnkahla, "Adaptive modulation over nonlinear time-varying channels", *European Transactions on Communications*, vol. 18, pp. 685-692, 2007.
- J19. M. Ibnkahla, Q. Rahman, H. Al-Asady, and Y. Jun, "High speed satellite mobile communications: technologies and challenges", *The Proceedings of The Institute of Electrical and Electronics Engineers (IEEE)*, pp. 312-339, February 2004 (**invited**).
- J20. M. Ibnkahla and J. Yuan, "A Neural Network MLSE Receiver Based on Natural Gradient Descent: Application to Satellite Communications", *EURASIP Journal on Applied Signal Processing*, December 2004.
- J21. M. Ibnkahla, "Nonlinear System Identification Using Neural Networks Trained With Natural Gradient Descent", *EURASIP Journal on Applied Signal Processing*, December 2003.
- J22. M. Ibnkahla, "Natural gradient learning neural networks for adaptive inversion of Hammerstein systems", *IEEE Signal Processing Letters*, pp. 315-317, October 2002.
- J23. M. Ibnkahla, "Statistical analysis of neural network modeling and identification of nonlinear channels with memory", *IEEE Trans. Signal Processing*, Vol. 50, No. 6, pp. 1508-1517, June 2002.
- J24. M. Ibnkahla, "Applications of neural networks to digital communications: A survey", *Signal Processing*, pp. 1185-1215, July 2000 (**invited**).
- J25. N. J. Bershad, M. Ibnkahla, G. Blowens, J. Cools, A. Soubrane, and N. Ponson, "Second order fluctuation analysis of a two-layer neural network used for modeling nonlinear memoryless channels", *IEEE Trans. Signal Processing*, pp. 1297-1303, May 1999.
- J26. M. Ibnkahla, N. J. Bershad, J. Sombrin and F. Castanié, "Neural network modeling and identification of non linear channels with memory: Algorithms, applications and analytic models", *IEEE Trans. on Signal Processing*, Vol. 46, No. 5, May 1998.

- J27. A. Guntsch, M. Ibnkahla, G. Losquadro, M. Mazzella, D. Roviras, A. Timm, "EU's R&D activities on third generation mobile satellite systems (S-UMTS)", IEEE Communications Magazine, February 1998 (**invited**).
- J28. M. Ghogho, M. Ibnkahla, and N. J. Bershad, "Analytic behavior of the LMS adaptive line enhancer for sinusoids corrupted by multiplicative and additive noise", IEEE Trans. on Signal Processing, Vol. 46, No. 9, September 1998.
- J29. M. Ibnkahla, J. Sombrin, F. Castanié, and N. J. Bershad, "Neural networks for modeling non linear memoryless channels", IEEE Trans. on Communications, Vol. 45, No. 7, pp. 768-771, July 1997.
- J30. N. J. Bershad, M. Ibnkahla, and F. Castanié, "Statistical analysis of a two-layer back propagation algorithm used for modeling non linear memoryless channels", IEEE Trans. on Signal Processing, Vol. 45, No. 3, pp. 747-756, March 1997.
- J31. M. Ibnkahla, Z. Faraj, F. Castanié, and J.C. Hoffmann, "Multi-layer adaptive filters trained with back propagation: a statistical approach", Signal Processing, Vol. 40, pp. 65-85, 1994.

- **REFEREED CONFERENCE PAPERS**

- C1. A. Abu Alkheir and M. Ibnkahla, "Performance Analysis of Cognitive Radio Relay Networks Using Decode and Forward Selection Relaying over Rayleigh Fading Channels", proc. IEEE Global Communications Conference, Huston, USA, 5-9 December 2011.
- C2. A. Abu Alkheir and M. Ibnkahla, "Selective Cooperative Spectrum Sensing In Cognitive Radio Networks", proc. IEEE Global Communications Conference, Huston, USA, 5-9 December 2011.
- C3. F. Al-Turjman, H. Hassanein, and M. Ibnkahla, "Optimized Relay Placement to Federate Wireless Sensor Networks in Environmental Applications", *In Proc. of the IEEE International Workshop on Federated Sensor Systems (FedSenS11)*, Istanbul, Turkey, 2011.
- C4. F. Al-Turjman, H. Hassanein, and M. Ibnkahla, "Optimized Relay Repositioning for Wireless Sensor Networks Applied in Environmental Applications", *In Proc. of the IEEE International Wireless Communications and Mobile Computing conf. (IWCMC11)*, Istanbul, Turkey, 2011.
- C5. A. Abu Alkheir, Z. Bouida, K. Karaqe, and M. Ibnkahla, "Outage capacity of bidirectional relaying in cognitive relay networks", International Conference on Communications and Networking (ComNet), Tozeur, Tunisia, November 2010.
- C6. F. Al-Turjman, A. Alfagih, H. Hassanein, and M. Ibnkahla, "Deploying Fault-Tolerant Grid-Based Wireless Sensor Networks for Environmental Applications", *In Proc. of the IEEE International Workshop on Wireless Local Networks (WLN)*, Denver, Colorado, 2010, pp. 731-738.
- C7. F. Al-Turjman, H. Hassanein, and M. Ibnkahla, "Quantifying Connectivity of Grid-based Wireless Sensor Networks under Practical Errors", *In Proc. of the IEEE Local Computer Networks (LCN)*, Denver, Colorado, 2010, pp. 224-227.
- C8. A. El Mougy, Z. El-Jabi, M. Ibnkahla, and E. Bdira, "Cognitive approaches to routing in wireless sensor networks," *IEEE Global Telecommunications Conference (GLOBECOM)*, December 2010.
- C9. A. Almaaitah, K. Ali, H. Hassanein and M. Ibnkahla, "3D passive tag localization for indoor RFID applications", Proc. IEEE ICC 2010, South Africa, May 2010.
- C10. A. El-Mougy, E. Bdira and M. Ibnkahla, "Throughput optimization of a power-aware MAC in correlated shadowing environment," Proc. Biennial Symposium in Communications, Kingston, Canada, May 2010.
- C11. P. Hu and M. Ibnkahla, "A survey of physical layer network coding in wireless networks," Proc. Biennial Symposium in Communications, Kingston, Canada, May 2010.
- C12. G. Vijay, E. Bdira and M. Ibnkahla, "Cognitive approaches in wireless sensor networks," Proc. Biennial Symposium in Communications, Kingston, Canada, May 2010.



- C13. F. Al-turjman, H. Hassanein and M. Ibnkahla, "Quantifying the effects of node placement errors on wireless sensor networks connectivity in grid-based deployments", Proc. Biennial Symposium in Communications, Kingston, Canada, May 2010.
- C14. E. Bdira and M. Ibnkahla, "Performance modeling of cognitive wireless sensor networks applied to environment protection", Proc. IEEE GLOBECOM 2009, Honolulu, Hawaii, December 2009.
- C15. F. Alturjman, H. Hassanein and M. Ibnkahla, "Connectivity optimization with realistic lifetime constraints for node placement in environment monitoring", Proc. IEEE Conference on Local Computer Networks (LCN), Zurich, Switzerland, October 2009.
- C16. F. Alturjman, H. Hassanein and M. Ibnkahla, "Connectivity optimization for wireless sensor networks applied to forest monitoring", Proc. ICC 2009, Germany, June 2009.
- C17. A. Al-Hinai and M. Ibnkahla, "Neural network nonlinear MIMO channel identification and receiver design", Proc. IEEE International Conference in Communications (ICC), Beijing China, May, 2008.
- C18. Y. Cao and M. Ibnkahla, "Pilot-aided neural network for modeling and identification of nonlinear satellite mobile channels", Proc. IEEE Canadian Conference on Electrical and Computer Engineering, Niagara Falls, Canada, May 2008.
- C19. H. Al-Asady and M. Ibnkahla, "Design and hardware implementation of look-up table predistortion on ALTERA Stratix DSP board", Proc. IEEE Canadian Conference on Electrical and Computer Engineering, Niagara Falls, Canada, May 2008.
- C20. A. Akhavan-Astaneh, A. Alemdar, and M. Ibnkahla, "Wireless sensor networks for wildlife monitoring: System architecture design", Proc. International Workshop on Signal Processing and its Applications, Proc. International Workshop on Signal Processing and its Applications, WOSPA, Sharjah, UAE, March 2008. **(invited)**
- C21. F. Al-Turjeman and M. Ibnkahla, "An overview of wireless sensor networks for ecology and forest monitoring", Proc. International Workshop on Signal Processing and its Applications, WOSPA, Sharjah, UAE, March 2008. **(invited)**
- C22. A. Alemdar and M. Ibnkahla, 'Wireless sensor networks: Applications and challenges', International Symposium on Signal Processing and its Applications (ISSPA), Sharjah, UAE, February 2007. **(invited)**
- C23. M. Ibnkahla, 'Neural network modeling and identification of nonlinear MIMO systems', Proc. ISSPA'2007, Sharjah, UAE, February 2007.
- C24. A. Sulyman and M. Ibnkahla, "Performance of MIMO systems with antenna selection over nonlinear fading channels", Proc. SPAWC 2006, Cannes, France, July 2006.
- C25. H. Al-Asady and M. Ibnkahla, "Adaptive modulation over nonlinear time-varying channels", Proc. ICECS conference, Tunis, December 11-14, 2005.
- C26. Q. Rahman, M. Ibnkahla, and M. Bayoumi, "Parameter estimation and performance evaluation of a time-varying multipath satellite channel", Proc. Canadian Conference on Electrical and Computer Engineering, May 1-4, 2005.
- C27. Q. Rahman, M. Ibnkahla, and M. Bayoumi, "Neural network-based channel estimation and performance evaluation of a time-varying multipath satellite channel", 3rd Annual Communication Networks and Services Research Conference (CNSR'05), pp. 74-79, 2005.
- C28. Y. Cao and M. Ibnkahla, 'Exact symbol error rate and total degradation performance of nonlinear M-QAM fading channels', Proc. ICASSP'05, Philadelphia, USA, March 2005.
- C29. A. Sulyman and M. Ibnkahla, 'Space-time coding over MIMO channels equipped with high power amplifiers', Proc. European Wireless Communications Conference, Cyprus, April 2005.
- C30. A. Sulyman and M. Ibnkahla, 'Performance of space time codes over nonlinear MIMO channels', Proc. ISSPA'05, Sydney, Australia, August 2005.
- C31. A. Sulyman and M. Ibnkahla, "Performance analysis of nonlinearly amplified M-QAM signals in MIMO channels", Proceedings of IEEE ICASSP'2004, Montreal, Canada, May 2004.
- C32. A. Sulyman and M. Ibnkahla, "Performance analysis of multi-user diversity in wireless channels", Proc. IEEE CCECE Conference, Niagara Falls, Canada, May 2004.

- C33. H. Al-Asady and M. Ibnkahla, "Performance Evaluation and Total Degradation of Different 16-QAM Constellations over Satellite Channels", Proc. IEEE CCECE Conference, Niagara Falls, Canada, May 2004.
- C34. H. Al-Asady, R. Boutros and M. Ibnkahla, "Analysis and comparison between digital and analog predistortion techniques for satellite communications", Proc. IEEE Canadian Conference on Electrical and Computer Engineering, CCECE 2003, pp. 183-186, Montreal Canada, June 2003.
- C35. J. Yuan and M. Ibnkahla, "Symbol error rate of nonlinear fading satellite communication channels", Proc. IEEE Canadian Conference on Electrical and Computer Engineering, CCECE 2003, pp.1647-1650, Montreal Canada, June 2003.
- C36. Q. Rahman and M. Ibnkahla, "4QAM-CDMA Transmission over Mobile Satellite Fading-Channels in the Presence of Nonlinear Distortions and Rayleigh fading," Proc. IEEE Canadian Conference on Electrical and Computer Engineering, CCECE 2003, pp. 1651-1654, Montreal Canada, June 2003.
- C37. M. Ibnkahla and J. Yuan, "A neural network MLSE receiver for satellite mobile communications", Proc. IEEE ISSPA 2003, Paris, France, July 2003.
- C38. M. Ibnkahla and J. Yuan, "Neural network MLSE receiver for satellite channels in the presence of nonlinear distortions and frequency-selective fading", Proc. IASTED International Conference on Neural Networks and Computational Intelligence, pp. 157162, Cancun, Mexico, May 2003.
- C39. Q.M. Rahman and M. Ibnkahla, "4QAM-CDMA Transmission over Mobile Satellite Fading-Channels in the Presence of Nonlinear Distortions and Ricean fading," Proc. IASTED conference on Wireless and optical communications, pp. 407-412, Banff, Canada, July 2003.
- C40. M. Ibnkahla, "Statistical analysis of neural network inversion of Hammerstein systems with memory", Proc. EUSIPCO 2002, Toulouse, France, September 2002.
- C41. R. Boutros and M. Ibnkahla, "New adaptive polynomial and neural network predistortion techniques for satellite transmissions", Proc. ANTEM Conference, Montreal, Canada, 31 July-2 August, 2002.
- C42. J. Yuan and M. Ibnkahla, "Effect of TWT modeling error on the performance of satellite channels", Proc. ANTEM Conference, Montreal, Canada, 31 July-2 August, 2002.
- C43. H. Al-Asady and M. Ibnkahla, "Analysis Of 16-star (8,8) QAM Modulation Over Nonlinear Channels", Proc. ANTEM Conference, Montreal, Canada, 31 July-2 August, 2002.
- C44. M. Ibnkahla, "Natural Gradient Learning Neural Networks for Digital Satellite Channel Equalization", in Proc. Wireless'2002, Calgary, Canada, July 2002.
- C45. J. Yuan and M. Ibnkahla, "Adaptive neural network MLSE receiver for satellite communications", Proc. 21st Biennial Symposium on Communications, Kingston, Canada, pp. 106-110, June 2002.
- C46. M. Ibnkahla and B. Pochon, "Natural Gradient Learning Neural Networks For Modeling and Identification of Nonlinear Systems With Memory", Proc. IEEE ICASSP'2002, pp. I 1057- I 1060, Orlando, FL, May 2002.
- C47. M. Ibnkahla, "Convergence properties of the LMS adaptive equalizer applied to nonlinear channels", in Proc. Wireless'01, pp. 309-317, Calgary, Canada, July 2001.
- C48. M. Ibnkahla, "Statistical analysis of neural network identification of nonlinear systems with memory", Proc. ISSPA, Malaysia, August 2001.
- C49. M. Ibnkahla, "Convergence Properties and Stationary Points of the Two-layer Backpropagation Algorithm Used for Nonlinear Function Modeling", Proc. IJCNN'2001, Washington D.C., July 2001.
- C50. M. Ibnkahla, "Adaptive predistortion techniques for satellite channel equalization", Proc. IEEE ICASSP, Istanbul, Turkey, June 2000.
- C51. H. Abdulkader and M. Ibnkahla, "Statistical analysis of self-organizing maps: Application to 4-QAM transmissions", Proc. IEEE ICASSP, Istanbul, Turkey, June 2000.
- C52. M. Ibnkahla, "Applications of neural networks to digital communications: A survey", Proc. COST#254 workshop, Toulouse, France, July 1997. **(invited)**

- C53. M. Ibnkahla, F. Castanié and D. Roviras, "Impact of neural networks to UMTS communications", Proc. IEE colloquium on EC R&D activities on UMTS communications, London, UK, May 1997. **(invited)**
- C54. M. Ibnkahla et al., "Neural networks for nonlinear channel identification and equalization", Proc. PIERS 1997, Boston, MA, July 1997. **(invited)**
- C55. M. Ibnkahla and F. Castanié, "Neural networks for adaptive signal processing", IEEE V CONIELECOM'95, Mexico, April 1995. **(invited)**
- C56. N. J. Bershad, M. Ibnkahla, G. Blowens, J. Cools, A. Soubrane, and N. Ponson, "Second order fluctuation analysis of a two-layer neural network used for modeling nonlinear memoryless channels", Proc. 32'nd Asilomar Conf. on Signals, Systems and Computers, Monterey, CA, 1998. **(invited)**
- C57. S. Bouchired, M. Ibnkahla, W. Paquier, "A combined LMS-SOM receiver for rapidly fading nonlinear channels", Proc. EUSIPCO'98, Greece. **(invited)**
- C58. F. Castanié, M. Ibnkahla, S. Bouchired, D. Roviras, "Neural network applications to space communications", ESA workshop, Holland, June 1998. **(invited)**
- C59. S. Bouchired, M. Ibnkahla, D. Roviras and F. Castanié, "Equalization of satellite UMTS channels using RBF networks", Proc. of IEEE workshop on Personal Indoor and Mobile Radio Communications (PIMRC), Boston (USA), September 1998.
- C60. S. Bouchired, M. Ibnkahla, D. Roviras and F. Castanié, "Neural Networks : A New Tool for Satellite UMTS Channel Equalisation", Proc. of DSP'98, European Space Agency (ESA) Conference, Nordwick, The Netherlands, September 1998.
- C61. F. Langlet, M. Ibnkahla, and F. Castanié, "Neural network hardware implementation: Overview and applications to satellite communications", Proc. of DSP'98, European Space Agency (ESA) Conference, Nordwick, The Netherlands, September 1998.
- C62. W. Paquier and M. Ibnkahla, "Self-organizing maps for rapidly fading nonlinear channel equalization", Proc. IEEE World Congress on Computational Intellingence, WCCI'98, Anchorage, Alaska, USA, May, 1998.
- C63. S. Bouchired, M. Ibnkahla, D. Roviras, and F. Castanié, "Equalization of satellite mobile communication channels using combined self-organizing maps and RBF networks", Proc. IEEE ICASSP'98, Seattle, WA, April 1998.
- C64. M. Ibnkahla, "On the influence of the number of layers on the performance and convergence behavior of the back propagation algorithm", Proc. IEEE ICASSP'97, Munchen, Germany, April 1997.
- C65. M. Ibnkahla, J. Sombrin and F. Castanié, "Neural network identification and characterization of digital satellite channels: Application to failure detection", Proc. IEEE International Conference on Communications, ICC'97, Montreal, Canada, June 1997.
- C66. M. Ibnkahla, M. Ghogho, and F. Castanié, "Neural network modeling of rapidly fading nonlinear channels", Proc. COST#254 workshop, Toulouse, France, July 1997.
- C67. S. Bouchired, M. Ibnkahla, D. Roviras, and F. Castanié, "Neural network equalization of satellite mobile communication channels using", Proc. ACTS Mobile Summit, Aalborg, Danmark, October 1997.
- C68. M. Ibnkahla and F. Castanié, "Neural networks for modeling nonlinear memoryless channels", Proc. GRETSI'97, Grenoble, France, September 1997.
- C69. M. Ibnkahla and F. Castanié, "Neural networks applications to digital satellite communications", Proc. JTEA'97, Hammamet, Tunisia, November 1997.
- C70. N. Bershad and M. Ibnkahla, "Statistical analysis of a 2-layer back-propagation algorithm used for modeling digital satellite channels", Proc. IEEE SPAWC workshop, Paris, France, April 1997.
- C71. M. Ibnkahla and F. Castanié, "Neural networks identification of digital satellite channels: The adaptive non linear enhancer", Proceedings of IEEE International Conference on Neural Networks, ICNN'96, Washington, D.C., USA, June 1996.

- C72. S. Puechmorel and M. Ibnkahla, "Manifold Kohonen maps", World Congress on Neural Networks, WCNN'96, San Diego, CA, USA, September, 1996.
- C73. M. Ibnkahla and F. Castanié, "Vector neural networks for digital satellite communications", Proceedings of IEEE International Conference on Communications, ICC'95, Seattle, USA, June 1995.
- C74. S. Puechmorel and M. Ibnkahla, "Operator-valued neural networks", Proceedings of World Congress on Neural Networks, WCNN'95, Washington, D.C., USA, July, 1995.
- C75. M. Ibnkahla and F. Castanié, "Vector neural networks: A new tool for digital satellite communications", Proceedings of the final COST # 229 meeting, Vigo, Spain, pp. 237-241, October 19-21, 1994.
- C76. M. Ibnkahla, S. Puechmorel, and F. Castanié, "A constrained neural network with complex activation function: application to time-frequency analysis", Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'94, Adelaide, Australia, pp. II-545-II-548, April 1994.
- C77. M. Ibnkahla, S. Puechmorel, and F. Castanié, "The vector back propagation algorithm", Proceedings of World Congress on Neural Networks, WCNN'94, San Diego, California, USA, pp. 346-351, June 1994.
- C78. S. Puechmorel, M. Ibnkahla, and F. Castanié, "The manifold back propagation algorithm", Proceedings of IEEE International Conference on Neural Networks, ICNN'94, Orlando, Florida, USA, pp. 395-400, July 1994.
- C79. M. Ibnkahla, Z. Faraj, F. Castanié, and J.C. Hoffmann, "Statistical analysis of a 2-D input multi-layer linear neural network", International Vigo workshop on adaptive methods and emergent techniques for signal processing and communications, Vigo, Spain, June 16-18, 1993.
- C80. M. Ibnkahla, Z. Faraj, and F. Castanié, "Mathematical properties of multi-layer adaptive filters", Proceedings of International Conference on Artificial neural networks, ICANN'93, Amsterdam, Holland, pp. 778, September 1993.
- C81. Z. Faraj, M. Ibnkahla, and F. Castanié, "Multi-layer adaptive filtering", Proc. IEEE Workshop on time-frequency and time-scale analysis, Victoria, B.C, Canada, September 1992.