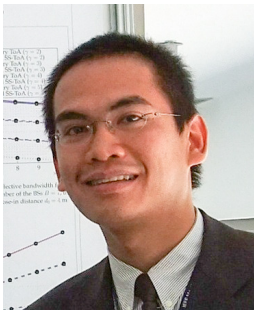


Bamrung Tausiesakul

July 26, 2024

Current Residence	46/441, Paholyothin 52 Alley, Lane 43 (Tanawan Housing Estate) Klongtanon, Saimai Bangkok, Thailand Tel.: +66 9247 55503 Email: bamrung.tau@mahidol.edu	
Personal Information	Birth Detail	August 16, 1979, Lopburi, Thailand
	First Name	Bamrung
	Family Name	Tausiesakul (Tau Siesakul, in certain publication)
	Gender	male
	Citizenship	thai

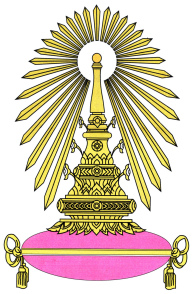
Education

Certificate in Technical Education

College of Industrial Technology, King Mongkut's Institute of Technology North Bangkok (currently, King Mongkut's University of Technology North Bangkok), Bangkok, Thailand, March 31, 1998.

- Title: Pre-Mechanical Technician.

Bachelor of Engineering (B.Eng.) in Electrical Engineering



Department of Electrical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand, May 25, 2002.

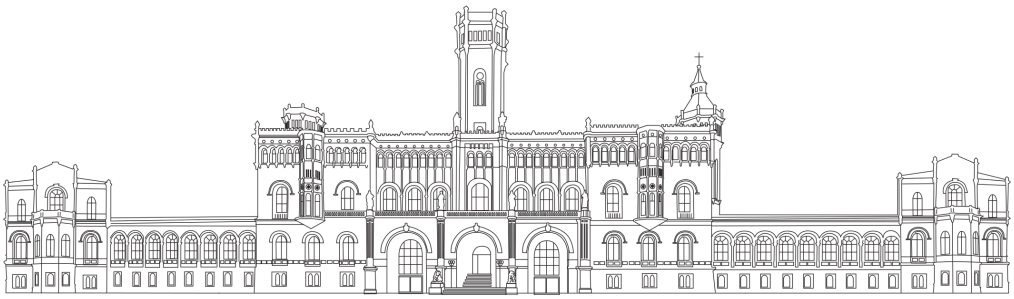
- Bachelor Degree Mentor: Assist. Prof. D.Eng. Tuptim Angkaew.
- Senior Project Report (Bachelor Thesis): A Study of Smart Antenna System for Wireless Communication in Third Generation.
- Advisor: Assoc. Prof. Dr.Ing. Somchai Jitapunkul.

Master of Engineering (M.Eng.) in Electrical Engineering

Division of Communication Engineering, Department of Electrical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand, November 2, 2004.

- Master Thesis: Source Direction Estimation Based on Separable Parameterization.
- Research Field: Signal Processing for Wireless Communications.
- Advisor: Assoc. Prof. Dr.Ing. Somchai Jitapunkul.

Doktor der Ingenieurwissenschaften or Doktor-Ingenieur (Dr.-Ing.)



Institute of Communications Technology (Institut für Kommunikationstechnik), Faculty of Electrical Engineering and Computer Science (Fakultät für Elektrotechnik und Informatik), Leibniz University of Hanover (Gottfried Wilhelm Leibniz Universität Hannover), Hanover (Hannover), Germany, May 20, 2010.

- Doctoral Thesis: NLoS Localization and UWB Channel Capacity Analysis.
- Research Field: Signal Processing for Wireless Communications.
- Advisor: Prof. Dr.-Ing. Thomas Kaiser.

INTERNSHIP

Student Intern April 2001 to May 2001

IBM Thailand Co., Ltd., Bangkok, Thailand.

Research Experience

Research Assistant October 2002 to October 2004

Division of Communication Engineering, Department of Electrical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand

Advisor: Assoc. Prof. Dr.Ing. Somchai Jitapunkul.

- Perform the scientific research, especially for signal processing in wireless communications.
- Supervise a student for her bachelor thesis in the related research area. The thesis is titled *Ricean Fading Channel Parameter Estimation in MIMO System*, which is under the formal supervision by Assoc. Prof. Dr.Ing. Somchai Jitapunkul (advisor).

Scientific Assistant (Wissenschaftliche Hilfskraft) September 2005 to September 2006

Department of Communication Systems (Fachgebiet Nachrichtentechnische Systeme), Faculty of Engineering (Fakultät für Ingenieurwissenschaften), University of Duisburg-Essen (Universität Duisburg-Essen), Duisburg, Germany

Advisor: Prof. Dr.-Ing. Thomas Kaiser.

- Perform the scientific research, especially in UWB communication and localization.

Scientific Staff (Wissenschaftlicher Mitarbeiter) Oktober 2006 to June 2010

Institute of Communications Technology (Institut für Kommunikationstechnik), Faculty of Electrical Engineering and Computer Science (Fakultät für Elektrotechnik und Informatik), Leibniz University of Hanover (Gottfried Wilhelm Leibniz Universität Hannover), Hanover (Hannover), Germany

Advisor: Prof. Dr.-Ing. Thomas Kaiser.

- Perform the scientific research, especially in UWB communication and localization.
- Serve as a staff of the 2008 IEEE International Conference on Ultra-Wideband (ICUWB 2008), Hannover.
- Contribute a channel capacity analysis and a bit error rate analysis in UWB systems to a military project supported by Heckler & Koch, 2007.
- Participate in channel modeling, channel measurement, and channel capacity for the multiantenna ultrawideband system in the European project of coExisting short range radio by advanced Ultra-WideBand radio technology (EUWB).

- Manipulate visa and house for new colleagues and guest student.
- Café and Beverage: Purchase, money collection from colleagues, refrigerator manipulation, café machine maintenance (from August 2007 to August 2008).
- Supervise a student for her final degree project in the responsible area. The thesis is titled *A Hybrid SS-ToA Wireless Geolocation Based on Path Attenuation: Robustness Investigation under Imperfect Path Loss Exponent*, which is under the formal supervision by Prof. Dr.-Ing. Thomas Kaiser (Betreuer).

Postdoctoral Researcher (Investigador Postdoctoral) May 2011 to June 2013

Signal-Processing-in-Communications Group (Grupo de Procesado de Señal en Comunicaciones), Department of Signal Theory and Communications (Departamento de Teoría de la Señal y Comunicaciones), Telecommunication Engineering School (Escola de Enxeñaría de Telecomunicación), University of Vigo (Universidad de Vigo), Vigo, Spain

Advisor: Assoc. Prof. Roberto López Valcarce and Assoc. Prof. Nuria González Prelcic.

- Perform the scientific research in signal processing for wireless sensor network localization in acoustic-channel underwater environments using semidefinite relaxation and expectation-maximization algorithm, under the financial support by the research project "Foundations and Methodologies for Future Communication and Sensor Networks (COMONSENS)" in CONSOLIDER-INGENIO 2010 Program, supported by the "Ministerio de Ciencia e Innovación" (Ministry of Science and Innovation) of Spanish Government.

- Perform the scientific research in compressive sensing for power spectrum blind sampling in cognitive radio.

Research Fellow in Compressive Sensing February 2014 to March 2015

Department of Civil Engineering, School of Mathematics, Computer Science & Engineering, City University London, London, United Kingdom

Advisor: Dr. Agathoklis Giaralis.

- Perform the scientific research in power spectrum estimation using power spectrum blind sampling techniques for modal analysis of structural vibration with applications in structual health monitoring, which is funded by Engineering and Physical Sciences Research Council (EPSRC).

Lecturer January 2016 to December 2023

Department of Electrical Engineering, Faculty of Engineering, Srinakharinwirot University, Bangkok & Nakhon Nayok, Thailand

- Perform the scientific research in signal processing for wireless communications.
- General secretariat of 2018 International Electrical Engineering Congress (iEECON2018).

Lecturer January 2024 to today

Mahidol University

Department of Electrical Engineering, Faculty of Engineering, Mahidol University, Bangkok & Nakhon Pathom, Thailand

- Perform the scientific research in signal processing for wireless communications and power systems.

STATEMENT OF PURPOSE

My intention in conducting the research is to apply fundamental theory, e.g., algebra, probability, optimization, etc. for algorithm design or for performance analysis based on statistical signal processing.

STATEMENT OF PURPOSE

The research areas in the past were focused on

- sensor array processing, especially for spatially distributed sources and multiple antenna at both sides,

- channel capacity analysis, such as upper bounds and approximations, for multiantenna systems,
- time-of-arrival estimation for localization systems, mobile position estima- tion for cellular wireless communication systems,
- ultrawideband communications, especially in modulation schemes, multiple antenna, channel modeling, and channel capacity,
- localization using wireless sensor network in underwater environments based on expectation-maximization algorithm and semidefinite relaxation,
- power-spectrum blind sampling based on compressive sensing for cognitive radio, and
- power-spectrum blind sampling techniques based on compressive sensing for power spectrum estimation in structural vibration modal analysis with applications in civil engineering structures.

The research interests include general area in signal processing for various applications.

Scholarship

1. Scholarship in the frame of the Wolfgang Paul prize of Mr. Prof. Gershman (Stipendium im Rahmen des Wolfgang-Paul-Preises von Herrn Prof. Gershman), Fachgebiet Nachrichtentechnische Systeme, Universität Duisburg-Essen, Duisburg, 13.05.2005.
2. .com scholarship from the Institute of Communications Technology (.comstipendium des Instituts für Kommunikationstechnik), Institut für Kommunikationstechnik, Gottfried Wilhelm Leibniz Universität Hannover, Hannover, 10.11.2006.

Peer-reviewed Conference Articles

1. B. Tau Sieskul, J. Pattanavichate, and S. Jitapunkul, "Coherent source localization via a spatial smoothing with temporal correlation," in Proc. *Annual Conference on Electrical Engineering/Electronics, Computer, Telecommunications, and Information Technology*, Pattaya, Thailand, May 13-14, 2004, pp. 173-176.
2. B. Tau Sieskul and S. Jitapunkul, "Towards Laplacian angle deviation model for spatially distributed source localization," in Proc. *International Symposium on Communications and Information Technologies (ISCIT)*, Sapporo, Japan, vol. 1, October 26-29, 2004, pp. 242-247.
3. B. Tau Sieskul, K. Maichalernnukul, and S. Jitapunkul, "On Toeplitz-constrained weights for spatially distributed source localization," in Proc. *International Symposium on Communications and Information Technologies (ISCIT)*, Sapporo, Japan, vol. 1, October 26-29, 2004, pp. 248-253.
4. B. Tau Sieskul and S. Jitapunkul, "Towards incorporation of Toeplitz constraint into asymptotic maximum likelihood for estimating nominal direction of spatially distributed source," in Proc. *27th Electrical Engineering*, Khon Kaen, Thailand, November 11-12, 2004.
5. B. Tau Sieskul and S. Jitapunkul, "Parameter estimations of MIMO channel with Ricean fading and uncorrelated signals," in Proc. *International ITG/IEEE Workshop on Smart Antennas*, Duisburg, Germany, April 4-5, 2005.

6. B. Tau Sieskul and S. Jitapunkul, "A simple upper bound on MIMO capacity mean with separable parameterizations of Ricean fading," in Proc. *2005 IEEE-EURASIP International Workshop on Nonlinear Signal and Image Processing (NSIP)*, Sapporo, Japan, May 18-20, 2005.

7. B. Tau Sieskul and S. Jitapunkul, "An asymptotic maximum likelihood for localizing multiple spatially-distributed sources," in Proc. *2005 IEEE-EURASIP International Workshop on Nonlinear Signal and Image Processing (NSIP)*, Sapporo, Japan, May 18-20, 2005.

8. B. Tau Sieskul and S. Jitapunkul, "A MIMO parameter estimation model taking Ricean fading channel and stochastically uncorrelated signals into account—Part I: Inherent accuracy limitations," in Proc. *Annual Conference on Communication Networks and Services Research (CNSR)*, Novia Scotia, Canada, May 16-18, 2005, pp. 293-298.

9. B. Tau Sieskul and S. Jitapunkul, "A MIMO parameter estimation model taking Ricean fading channel and stochastically uncorrelated signals into account—Part II: Asymptotically efficient estimators," in Proc. *Annual Conference on Communication Networks and Services Research (CNSR)*, Novia Scotia, Canada, May 16-18, 2005, pp. 299-304.

10. B. Tau Sieskul and T. Kaiser, "A simple upper bound on mutual information for Ricean-fading MIMO channel," in Proc. *14th IST Mobile & Wireless Communications Summit*, Dresden, Germany, June 19-22, 2005.

11. B. Tau Sieskul and T. Kaiser, "Cramér-Rao bound for TOA estimations in UWB positioning systems," in Proc. *IEEE International Conference on Ultra-Wideband (ICU)*, Zurich, Switzerland, September 5-8, 2005, pp. 408-413.

12. B. Tau Sieskul and T. Kaiser, "On parameter estimation of Ricean fading MIMO channel: correlated signals and spatial scattering," in Proc. *16th IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC)*, Berlin, Germany, September 11-14, 2005, pp. 522-526.

13. B. Tau Sieskul and S. Jitapunkul, "A large-sample approximate maximum likelihood for localizing a spatially distributed source," in Proc. *16th IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC)*, Berlin, Germany, September 11-14, 2005, pp. 614-618.

14. B. Tau Sieskul, F. Zheng, and T. Kaiser, "A hybrid SS-ToA wireless NLoS geolocation based on path attenuation: Mobile position estimation," in Proc. *IEEE Wireless Communications & Networking Conference (WCNC)*, Budapest, Hungary, April 5-8, 2009, pp. 1-6.

15. B. Tau Sieskul, T. Kaiser, and F. Zheng, "A hybrid SS-ToA wireless NLoS geolocation based on path attenuation: Cramér-Rao bound," in Proc. *69th IEEE Vehicular Technology Conference (VTC2009-Spring)*, Barcelona, Spain, April 26-29, 2009, pp. 1-5.

16. B. Tau Sieskul, F. Zheng, and T. Kaiser, "Time-of-arrival estimation in path attenuation," in Proc. *10th IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC)*, Perugia, Italy, June 21-24, 2009, pp. 573-577.

17. B. Tau Sieskul, C. Kupferschmidt, and T. Kaiser, "Algebraic inequalities for MIMO-UWB with antenna element time delays: Uncorrelated fading," in Proc. *2009 IEEE International Conference on Ultra-Wideband (ICUWB 2009)*, Vancouver, Canada, September 9-11, 2009, pp. 798-803.

18. B. Tau Sieskul, C. Kupferschmidt, and T. Kaiser, "Spatial fading correlation for semicircular scattering: Angular spread and spatial frequency approximations," in Proc. *3rd International Conference on Communications and Electronics 2010 (ICCE 2010)*, Nha Trang, Vietnam, August 11-13, 2010, pp. 216-221.

19. B. Tau Sieskul, C. Kupferschmidt, and T. Kaiser, "A correlated Gaussian spatial distribution," in Proc. *1st Middle East Conference on Antennas and Propagation (MECAP 2010)*, Cairo, Egypt, October 20-22, 2010, pp. 1-5.

20. B. Tausiesakul and N. González-Prelcic, "Power spectrum blind sampling using minimum mean square error and weighted least squares," in Proc. *2013 Asilomar Conference on Signals, Systems and Computers (ACSSC 2013)*, Pacific Grove, California, November 3-6, 2013, pp. 153-157.

21. B. Tausiesakul and N. González-Prelcic, "Power spectrum blind sampling using optimal multicoset sampling patterns in the MSE sense," in Proc. *2014 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2014)*, Florence, Italy, May 4-9, 2014, pp. 1055-1059.

22. B. Tausiesakul, K. Gkoktsi, and A. Giaralis, "Compressive sensing spectral estimation for output-only structural system identification," in Proc. *7th International Conference Computational Stochastic Mechanics (CSM-7)*, Santorini, Greece, June 15-18, 2014, pp. 1-12.

23. B. Tau Siesakul, K. Gkoktsi, and A. Giaralis, "Compressive power spectrum sensing for vibration-based output-only system identification of structural systems in the presence of noise," Proc. *SPIE 9484, Compressive Sensing IV*, Baltimore, MD, April 20, 2015, pp. 1-13.

24. B. Tausiesakul, "Iterative hard thresholding with nonzero index initialization," in Proc. *First International Conference on Smart Technologies, Communication, and Robotics 2021 (IEEE-STCR 2021)*, Tamilnadu, India, October 9-10, 2021, pp. 1-4.

25. B. Tausiesakul, "Iteratively reweighted least squares minimization with nonzero index update," in Proc. *First International Conference on Smart Technologies, Communication, and Robotics 2021 (IEEE-STCR 2021)*, Tamilnadu, India, October 9-10, 2021, pp. 1-5.

26. B. Tausiesakul, "Iteratively reweighted ℓ_1 minimization with nonzero index update," in Proc. *International Conference on Electrical Engineering and Photonics 2021 (EExPolytech 2021)*, St. Petersburg, Russian Federation, October 14-15, 2021, pp. 10-14.

27. B. Tausiesakul, "Iterative hard thresholding using minimum mean square error step size," in Proc. *International Conference on Electrical Engineering and Photonics 2021 (EExPolytech 2021)*, St. Petersburg, Russian Federation, October 14-15, 2021, pp. 77-80.

28. B. Tausiesakul, "Iterative hard thresholding using least squares initialization," in Proc. *11th IEEE International Conference on Communication Systems and Network Technologies 2022 (CSNT 2022)*, Indore, India, April 23-24, 2022, pp. 612-615.

29. B. Tausiesakul, "Soft homotopy through Moore-Penrose inverse," in Proc. *9th IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications 2022 (CIVEMSA 2022)*, Chemnitz, Germany, June 15-17, 2022, pp. 1-5.

30. B. Tausiesakul, "Soft homotopy via Moore-Penrose inverse," in Proc. *7th International Conference on Smart and Sustainable Technologies 2022 (SpliTech 2022)*, Split/Bol, Croatia, July 5-8, 2022, pp. 1-5.

31. B. Tausiesakul, "Basis Pursuit and Linear Programming Equivalence: A Performance Comparison in Sparse Signal Recovery," in Proc. *7th International Conference on Smart and Sustainable Technologies 2022 (SpliTech 2022)*, Split/Bol, Croatia, July 5-8, 2022, pp. 1-6.

32. B. Tausiesakul and K. Asavaskulkiet, "Iteratively Reweighted Least Squares by Diagonal Regularization," in Proc. *2023 20th International Joint Conference on Computer Science and Software Engineering (JCSSE 2023)*, Phitsanulok, Thailand, June 28 - July 1, 2023, pp. 1-6.

33. B. Tausiesakul and K. Asavaskulkiet, "An Approximation of FOCUSS Mean Squared Error," in Proc. *2023 20th International Joint Conference on Computer Science and Software Engineering (JCSSE 2023)*, Phitsanulok, Thailand, June 28 - July 1, 2023, pp. 1-6.

34. B. Tausiesakul and K. Asavaskulkiet, "Iterative hard thresholding algorithm using norm exponent," in Proc. *International Conference on Green Energy, Computing and Intelligent Technology (GEn-CITy 2023)*, Iskandar Puteri, Malaysia, July 10-12, 2023, pp. 73-85.

35. B. Tausiesakul, K. Asavaskulkiet, Chuttchaval Jeraputra, Ittiphong Leevongwat, Thamvarit Singhavilai, and Supun Tiptipakorn "State Estimation in Power System under Deterministic False Data Injection Attack Using Minimization of Nuclear Norm and ℓ_1 Norm with Noiseless Constraint Substitution," in Proc. *2024 IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications (CIVEMSA 2024)*, Xi'an, China, June 14-16, 2024, pp. 1-6.

36. B. Tausiesakul, K. Asavaskulkiet, Chuttchaval Jeraputra, Ittiphong Leevongwat, Thamvarit Singhavilai, and Supun Tiptipakorn "State Estimation in Power System under Deterministic False Data Injection Attack Using Minimization of Nuclear Norm and ℓ_1 Norm with Noisy Constraint Substitution," in Proc. *2024 IEEE IAS Industrial and Commercial Power System Asia (IEEE I&CPS Asia 2024)*, Chonburi, Thailand, July 9-12, 2024, pp. 1-6.

Peer-reviewed Journal Articles

1. B. Tau Sieskul and S. Jitapunkul, "Towards incorporating Toeplitz covariance into asymptotic maximum likelihood for estimating nominal direction of spatially distributed source," *FREQUENZ (Journal of RF-Engineering and Telecommunications)*, vol. 59, no. 7-8, pp. 177-181, Jul./Aug. 2005.

2. B. Tau Sieskul and S. Jitapunkul, "An asymptotic maximum likelihood for estimating the nominal angle of a spatially distributed source," *International Journal of Electronics and Communications (Archiv für Elektronik und Übertragungstechnik)*, vol. 60, no. 4, pp. 279-289, April 2006.

3. B. Tau Sieskul, F. Zheng, and T. Kaiser, "On the effect of shadow fading on wireless geolocation in mixed LoS/NLoS environments," *IEEE Transactions on Signal Processing*, vol. 57, no. 11, pp. 4196-4208, Nov. 2009.

4. B. Tau Sieskul, F. Zheng, and T. Kaiser, "A hybrid SS-ToA wireless NLoS geolocation based on path attenuation: ToA estimation and CRB for mobile position estimation," *IEEE Transactions on Vehicular Technology*, vol. 58, no. 9, pp. 4930-4942, Nov. 2009.

5. B. Tau Sieskul, "An asymptotic maximum likelihood for joint estimation of nominal angles and angular spreads of multiple spatially-distributed sources," *IEEE Transactions on Vehicular Technology*, vol. 59, no. 3, pp. 1534-1538, Mar. 2010.

6. B. Tau Sieskul, C. Kupferschmidt, and T. Kaiser, "Spatial fading correlation for local scattering: A condition of angular distribution," *IEEE Transactions on Vehicular Technology*, vol. 60, no. 3, pp. 1271-1278, Mar. 2011.

7. B. Tausiesakul, "Method of Lagrange multipliers for normalized zero norm minimization," *Mathematical Problems in Engineering*, vol. 2022, pp. 1-10, Jan. 2022.

8. B. Tausiesakul and K. Asavaskulkiet, "Fractional norm regularization using inverse perturbation," *Mechanical Systems and Signal Processing*, vol. 199, pp. 110459, Sep. 2023.

9. B. Tausiesakul and K. Asavaskulkiet, "A novel sparse image reconstruction based on iteratively reweighted least squares using diagonal regularization," *Journal of Advances in Information Technology*, vol. 14, no. 6, pp. 1365-1371, Dec. 2023.

10. B. Tausiesakul and K. Asavaskulkiet, "Soft thresholding using Moore-Penrose inverse," *IEEE Transactions on Instrumentation and Measurement*, vol. 72, pp. 6504118, Jun. 2023.

11. B. Tausiesakul and K. Asavaskulkiet, "Fractional norm regularization using truncated singular value decomposition," *IEEE Access*, vol. 12, pp. 36882-36895, Mar. 2024.

12. B. Tausiesakul and K. Asavaskulkiet, "TDoA localization in wireless sensor networks using constrained total least squares and Newton's methods," *IEEE Access*, vol. 12, pp. 39238-39260, Mar. 2024.

Peer-reviewed Articles in Collaboration

1. J. Pattanavichate, B. Tau Sieskul, and S. Jitapunkul, "Capacity assessment of MIMO channel model accounted for Rayleigh fading and local scattering," in Proc. *International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS)*, Seoul, Korea, 18-19 November 2004, pp. 531-535.

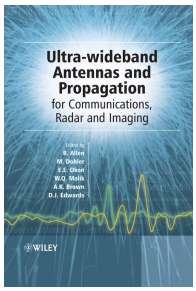
2. W. Lee, B. Tau Sieskul, S. Kunaruttanapruk, and S. Jitapunkul, "Channel estimation for the uplink of MIMO MC-CDMA systems," in Proc. *7th International Conference on Advanced Communication Technology*, Phoenix Park, Korea, February 21-23, 2005, pp. 680-684.

3. W. Lee, B. Tau Sieskul, S. Kunaruttanapruk, and S. Jitapunkul, "Optimal training sequences for the uplink of MIMO MC-CDMA systems," in Proc. *3rd Annual Communication Networks and Services Research (CNSR) Conference*, Novia Scotia, Canada, May 16-18, 2005, pp. 223-228.

4. T. Kaiser and B. Tau Sieskul, "An Introduction to multiple antennas for UWB communication and localization," in Proc. *Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, March 22-24, 2006, pp. 638-643.

5. M. Saleem, B. Tau Sieskul, and T. Kaiser, "Channel capacity assessments in UWB communication system over lognormal fading," in Proc. *IEE Symposium on Ultra Wideband Systems, Technologies and Applications*, London, UK, April 21-22, 2006, pp. 155-159.

6. T. Kaiser, C. Senger, and B. Tau Sieskul, "Antenna arrays for UWB indoor localization in non-line of sight environments," in Proc. *IEEE MTT-S International Microwave Symposium*, invited paper, San Francisco, California, June 11-16, 2006.



7. T. Kaiser, C. Senger, A. Eltaher, and B. Tau Sieskul, Localization in non-line-of-sight scenarios with ultra-wideband antenna arrays, in *Ultra Wideband: Antennas and Propagation for Communications, Radar and Imaging.* Edited by B. Allen, M. Dohler, E. E. Okon, W. Q. Malik, A. K. Brown, and D. J. Edwards, Ch. 18, pp. 389-411, John Wiley & Sons, 2007.

8. T. Kaiser, C. Senger, J. Schroeder, S. Galler, E. Dimitrov, M. El-Hadidy and B. Tau Sieskul, "Ultra-wideband wireless systems: A broad review," *The Radio Science Bulletin*, no. 320, pp. 25-39, March, 2007.

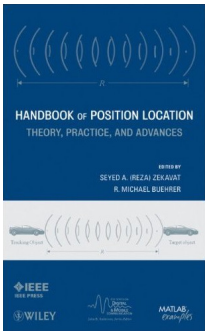
9. T. Kaiser, F. Zheng, B. Tau Sieskul, and K. Maichalernnukul, An overview of UWB systems with MIMO, in *Short-Range Wireless Communications Emerging Technologies and Applications* Edited by R. Kraemer and M. D. Katz, Ch. 9, pp. 65-72, John Wiley & Sons, 2009.

10. M. I. Valera Martínez, B. Tau Sieskul, F. Zheng, and T. Kaiser, "A hybrid SS-ToA wireless geolocation based on path attenuation under imperfect path loss exponent," in Proc. *18th European Signal Processing Conference 2010 (EUSIPCO-2010)*, Aalborg, Denmark, Aug. 2010, pp. 681-685.

11. I. Valera, B. Tau Sieskul, and J. Míguez, "On the maximum likelihood estimation of the ToA under an imperfect path loss exponent," *EURASIP Journal on Wireless Communications and Networking*, vol. 2013, June, 2013.

12. K.Gkoktsi and B. Tau Siesakul and A. Giaralis, "Multi-channel sub-Nyquist cross-spectral estimation for modal analysis of vibrating structures," in Proc. *International Conference on Systems, Signals and Image Processing 2015 (IWSSIP 2015)*, London, UK, September 10-12, 2015, pp. 1-4.

Book Chapter



1. B. Tau Sieskul, F. Zheng, and T. Kaiser, Mobile position estimation using received signal strength and time of arrival in mixed LOS/NLOS environments, in *Handbook of Position Location: Theory, Practice and Advances.* Edited by S. Zekavat and M. Buehrer, Wiley-IEEE Press, 2011.

Teaching-related Experience

Scientific Assistant (Wissenschaftliche Hilfskraft), May 2005 to August 2005

Lehrgebiet Informationstechnik, FernUniversität in Hagen, Hagen, Germany

Advisor: Priv.-Doz. Dr.-Ing. Thomas Kaiser.

- Check the examination resutls from the students in the subject ,,Signale und Systeme".

Scientific Assistant (Wissenschaftliche Hilfskraft) September 2005 to September 2006

Department of Communication Systems (Fachgebiet Nachrichtentechnische Systeme), Faculty of Engineering (Fakultät für Ingenieurwissenschaften), University of Duisburg-Essen (Universität Duisburg-Essen), Duisburg, Germany

Advisor: Prof. Dr.-Ing. Thomas Kaiser.

- A lecture on pulse modulation schemes for impulse radio in ultra-wideband communications.

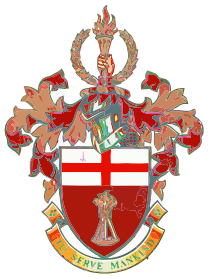
Scientific Staff (Wissenschaftlicher Mitarbeiter) Oktober 2006 to June 2010

Institute of Communications Technology (Institut für Kommunikationstechnik), Faculty of Electrical Engineering and Computer Science (Fakultät für Elektrotechnik und Informatik), Leibniz University of Hanover (Gottfried Wilhelm Leibniz Universität Hannover), Hanover (Hannover), Germany

Advisor: Prof. Dr.-Ing. Thomas Kaiser.

- Prepare and inspect the examinations for
  - ,,Signale und Systeme—Aufgabe 3: Fourier-Transformierte" im Wintersemester 2006,
  - ,,Signale und Systeme—Aufgabe 2: Faltung" im Sommersemester 2007,
  - ,,Signale und Systeme—Aufgabe 1: Fourier-Reihe" im Autumn 2008,
  - ,,Signale und Systeme—Aufgabe 3: Fourier-Transformierte" im Herbst 2009,
  - ,,Signale und Systeme—Aufgabe 5: Laplace-Transformierte" im Herbst 2009.
- Tutor for the exercise of ,,Numerische Verfahren in der Kommunikationstechnik" Sommersemester 2009.

Research Fellow in Compressive Sensing February 2014 to January 2015



Department of Civil Engineering, School of Mathematics, Computer Science & Engineering, City University London, London, United Kingdom

Lecturer: Prof. Roger Crouch.

- Teaching assistant on behalf of "Tutor of Group C" for the subject "EX1401 Engineering Mathematics: Civil Engineering Part I" from October 2014 to January 2015.

Lecturer January 2016 to December 2023

Department of Electrical Engineering, Faculty of Engineering, Srinakharinwirot University, Bangkok & Nakhon Nayok, Thailand

Semester 2 of Academic Year 2015

- Basics of Engineering I, Educational Research Development and Demonstration Institute, Ongkharak Demonstration School
- EE111 Mathematics for Engineering I (Section B02)
- EE213 Electric Circuit Engineering Laboratory (Section B01)
- MEE522 Selected Topics in Electrical Engineering I (Section S01)

Semester 1 of Academic Year 2016

- EE210 Electric Circuits (Section B02)
- EE292 Fundamentals of Electrical Engineering (Sections B01 and B02)
- EE293 Electrical Engineering Laboratory (Sections B01 and B02)

Semester 2 of Academic Year 2016

- EE111 Mathematics for Engineering I (Section B02)
- EE213 Electric Circuit Engineering Laboratory (Section B01)
- EE292 Fundamentals of Electrical Engineering (Sections B01 and B02)
- EE293 Electrical Engineering Laboratory (Sections B01 and B02)
- EE405 Telecommunication Engineering Project (Section B01)

Semester 3 of Academic Year 2016

- EE111 Mathematics for Engineering I (Section B01)

Semester 1 of Academic Year 2017

- EE292 Fundamentals of Electrical Engineering (Sections B01-B03)
- EE293 Electrical Engineering Laboratory (Sections B01-B03)
- EE405 Telecommunication Engineering Project (Section B01)

Semester 2 of Academic Year 2017

- EE292 Fundamentals of Electrical Engineering (Sections B01 and B02)

- EE293 Electrical Engineering Laboratory (Section B01)
- EE293 Fundamental of Electrical Engineering Laboratory (Sections B01 and B02)
- EE405 Telecommunication Engineering Project (Section B01)

Semester 1 of Academic Year 2018

- EE292 Fundamentals of Electrical Engineering (Sections B01-B03)
- EE293 Electrical Engineering Laboratory (Section B04)
- EE293 Fundamental of Electrical Engineering Laboratory (Sections B01-B04)
- MEE502 Linear Algebra (Section M01)
- DEE703 Discrete Mathematics (Section D01)

Semester 2 of Academic Year 2018

- EE292 Fundamentals of Electrical Engineering (Section B01)
- EE293 Electrical Engineering Laboratory (Section B01)
- EE293 Fundamental of Electrical Engineering Laboratory (Sections B02 and B03)
- EE405 Telecommunication Engineering Project (Section B01)
- DEE703 Discrete Mathematics (Section D01)

Semester 1 of Academic Year 2019

- EE211 Mathematics for Engineering II (Section B04)
- EE292 Fundamentals of Electrical Engineering (Sections B02 and B04)
- EE293 Fundamental of Electrical Engineering Laboratory (Section B02)
- MEE502 Linear Algebra (Section M01)

Semester 2 of Academic Year 2019

- EE111 Mathematics for Engineering I (Sections B04 B10 B11)
- EE292 Fundamentals of Electrical Engineering (Section B01)
- EE293 Fundamental of Electrical Engineering Laboratory (Section B01)
- EE405 Telecommunication Engineering Project (Section B01)
- MEE502 Linear Algebra (Section M01)

Semester 1 of Academic Year 2020

- EE211 Mathematics for Engineering II (Section B04)
- EE292 Fundamentals of Electrical Engineering (Sections B02 and B03)
- EE293 Fundamental of Electrical Engineering Laboratory (Section B02)
- EE433 Telecommunication Engineering Project I (Section B01)
- MEE502 Linear Algebra (Section M01)

Semester 2 of Academic Year 2020

- Basics of Science and Engineering, Educational Research Development and Demonstration Institute, Ongkharak Demonstration School (M5.1, M5.2, M5.3, and M5.5)
- EE111 Mathematics for Engineering I (Section B07)
- EE292 Fundamentals of Electrical Engineering (Section B01)
- EE293 Fundamental of Electrical Engineering Laboratory (Section B01)
- EE401 Industrial Training and Seminar (Section B02)
- EE434 Telecommunication Engineering Project II (Section B01)

Semester 3 of Academic Year 2020

- EE211 Mathematics for Engineering II (Section B01)

Semester 1 of Academic Year 2021

- Basics of Science and Engineering, Educational Research Development and Demonstration Institute, Ongkharak Demonstration School (M6.1, M6.2, M6.3, and M6.5)

- EE292 Fundamentals of Electrical Engineering (Section B02)
- EE293 Fundamental of Electrical Engineering Laboratory (Section B02)
- EE433 Telecommunication Engineering Project I (Section B01)
- MEE502 Linear Algebra (Section M01)

Semester 2 of Academic Year 2021

- EE111 Mathematics for Engineering I (Section B07)
- EE292 Fundamentals of Electrical Engineering (Section B03)
- EE293 Fundamental of Electrical Engineering Laboratory (Section B03)
- EE401 Electrical Engineering Industrial Seminar (Section B02)
- EE434 Telecommunication Engineering Project II (Section B01)

Semester 3 of Academic Year 2021

- EE211 Mathematics for Engineering II (Section B01)

Semester 1 of Academic Year 2022

- EE211 Mathematics for Engineering II (Section B02)
- EE292 Fundamentals of Electrical Engineering (Sections B01, B03, and B04)
- EE293 Fundamental of Electrical Engineering Laboratory (Sections B01, B03, and B04)
- EE401 Electrical Engineering Industrial Seminar (Section B02)
- EE434 Telecommunication Engineering Project II (Section B01)

Semester 2 of Academic Year 2022

- EE292 Fundamentals of Electrical Engineering (Section B03)
- EE293 Fundamental of Electrical Engineering Laboratory (Section B03)
- EE409 Selected topic of electrical engineering III (Section B01)
- MEE502 Linear Algebra (Section M01)

Semester 1 of Academic Year 2023

- Basics of Science and Engineering, Educational Research Development and Demonstration Institute, Ongkharak Demonstration School (M6.4)
- EE211 Mathematics for Engineering II (Sections B01, B02, and B06)
- EE292 Fundamentals of Electrical Engineering (Sections B01 and B02)
- EE293 Fundamental of Electrical Engineering Laboratory (Sections B01, B02, and B04)
- EE401 Electrical Engineering Industrial Seminar (Section B02)
- EE434 Telecommunication Engineering Project II (Section B01)

Lecturer January 2016 to today

Mahidol University
Faculty of Engineering

Department of Electrical Engineering, Faculty of Engineering, Mahidol University, Bangkok & Nakhon Pathom, Thailand

Semester 2 of Academic Year 2023

- EGEE 213 Electric Circuit Analysis
- EGEE 427 Microwave Engineering

Semester 1 of Academic Year 2024

- EGEE 217 Fundamental of Electrical Engineering

Dissertation

Authorship

- B. Tau Sieskul, A study of smart antenna system for wireless communication in third generation, Senior Project Report (Bachelor Thesis), Department of Electrical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand, May 2002.
- B. Tau Sieskul, Source direction estimation based on separable parameterization, Master Thesis, Division of Communication Engineering, Department of Electrical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand, Nov. 2004.
- B. Tau Sieskul, NLoS localization and UWB channel capacity analysis, Fakultät für Elektrotechnik und Informatik, Leibniz Universität Hannover, Hannover, Germany, July, 2010.

Supervision

- S. Premkamonmart, Ricean fading channel parameter estimation in MIMO system, Senior Project Report (Bachelor Thesis, in Thai), in partial fulfillment of the requirements for the degree of *Bacheolor of Engineering (B.Eng.)*, Department of Electrical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand, May 2004.
- M. Saleem, Channel capacity assessment for the UWB wireless communication system in the presence of lognormal fading, Master's thesis, in partial fulfillment of the requirements for the degree of *Master of Science (M.Sc.)* in Computer Science and Communication Engineering, Fachgebiet Nachrichtentechnische Systeme (Department of Communication Systems), Universität Duisburg-Essen (University of Duisburg-Essen), Duisburg, Germany, Mar. 2006.
- M. I. Valera Martínez, A hybrid SS-ToA wireless geolocation based on path attenuation: Robustness investigation under imperfect path loss exponent, Final Degree Project, performed at Institut für Kommunitionstechnik (Institute of Communications Technology), Fakultät für Elektrotechnik und Informatik (Faculty of Electrical Engineering and Computer Science), Leibniz Universität Hannover (Leibniz University Hannover), Hannover, Germany, August, 2009, in partial fulfillment of the requirements for the degree of *Telecommunications Engineer (T.E.)*, Escuela Técnica Superior de Ingeniería de Telecomunicación (School of Telecommunications Engineering), Universidad Politécnica de Cartagena (Technical University of Cartagena), Cartagena, Spain, September 2009.

Oral Presentation

1. Coherent source localization via a spatial smoothing with temporal correlation, Annual Conference on Electrical Engineering/Electronics, Computer, Telecommunications, and Information Technology, Pattaya, Thailand, May 13, 2004.
2. Towards Laplacian angle deviation model for spatially distributed source localization, International Symposium on Communications and Information Technologies (ISCIT), Sapporo Convention Center, Sapporo, Japan, October 27, 2004.
3. On Toeplitz-constrained weights for spatially distributed source localization, International Symposium on Communications and Information Technologies (ISCIT), Sapporo Convention Center, Sapporo, Japan, October 27, 2004.

4. Cramér-Rao bound for TOA estimations in UWB positioning systems, IEEE International Conference on Ultra-Wideband (ICU), Eidgen ossische Technische Hochschule Zürich (ETHZ) Zentrum, Zurich, Switzerland, September 7, 2005.

5. On parameter estimation of Ricean fading MIMO channel: correlated signals and spatial scattering, 16th IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC), International Congress Center Berlin, Berlin, Germany, September 12, 2005.

6. An asymptotic maximum likelihood for estimating the nominal angle of a spatially distributed source, 16th IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC), International Congress Center Berlin, Berlin, Germany, September 13, 2005.

7. Cramér-Rao bound for NLoS geolocation in the presence of shadow fading, HFT-Besprechungsraum (1712), Leibniz University Hannover, Hanover, Germany, November 7, 2007.

8. A hybrid SS-ToA wireless NLoS geolocation based on path attenuation: Mo- bile position estimation, IEEE Wireless Communications & Networking Con- ference (WCNC), Budapest, Hungary, April 8, 2009.

9. Algebraic inequalities for MIMO-UWB with antenna element time delays: Uncorrelated fading, 2009 IEEE International Conference on Ultra-Wideband (ICUWB 2009), Vancouver, Canada, September 11, 2009.

10. NLoS localization and UWB channel capacity analysis, Promotionsvortrag (Referenten: Prof. Dr.-Ing. Thomas Kaiser & Prof. Dr. H. Vincent Poor, Princeton University, USA, Vorsitzender: Prof. Dr.-Ing. Markus Fidler), IKT-Kommunikationstechnik, Leibniz Universität Besprechungsraum, Institut für Hannover, Hannover, 20. Mai 2010.

11. Spatial fading correlation for semicircular scattering: Angular spread and spatial frequency approximations, 3rd International Conference on Communications and Electronics 2010 (ICCE 2010), Nha Trang, Vietnam, August 12, 2010.

12. Time-of-arrival estimation based on path attenuation under imperfect path loss exponent, Special Seminar (invited by Poramin Sangwongngam), Thailand's National Electronics and Computer Technology Center (NECTEC), Pathumthani, Thailand, October 12, 2010.

13. A condition of angular distribution for local scattering, Weekly Seminar, Room A-101, TSC Dept., University of Vigo, Vigo, Spain, May 20, 2011.

14. Iterative Hard Thresholding with Nonzero Index Initialization , First International Conference on Smart Technologies, Communication, and Robotics 2021 (IEEE-STCR 2021), Zoom meeting, 11:30-11:45, Tamilnadu, India, October 10, 2021.

15. Iteratively Reweighted Least Squares Minimization with Nonzero Index Update, First International Conference on Smart Technologies, Communication, and Robotics 2021 (IEEE-STCR 2021), Zoom meeting, 12:30-12:45, Tamilnadu, India, October 10, 2021.

16. Iteratively Reweighted ℓ_1 Minimization with Nonzero Index Update, International Conference on Electrical Engineering and Photonics 2021 (EExPolytech 2021), Zoom meeting, 12:35-13:50, St. Petersburg, Russia, October 14, 2021.

17. Iterative Hard Thresholding Using Minimum Mean Square Error Step Size, International Conference on Electrical Engineering and Photonics 2021 (EExPolytech 2021), Zoom meeting, 14:35-14:50, St. Petersburg, Russia, October 14, 2021.

18. Iterative Hard Thresholding Using Least Squares Initialization, 11th IEEE International Conference on Communication Systems and Network Technologies 2022 (CSNT 2022), Zoom meeting, Indore, India, April 23, 2022.

19. Soft Homotopy through Moore-Penrose Inverse, 9th IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications 2022 (CIVEMSA 2022), Zoom meeting, 11:20-11:40, Chemnitz, Germany, June 16, 2022.

20. Soft Homotopy via Moore-Penrose Inverse, 7th International Conference on Smart and Sustainable Technologies 2022 (SpliTech 2022), Zoom meeting, 17:20-17:40, Split/Bol, Croatia, July 6, 2022.

21. Basis Pursuit and Linear Programming Equivalence: A Performance Comparison in Sparse Signal Recovery, 7th International Conference on Smart and Sustainable Technologies 2022 (SpliTech 2022), Zoom meeting, 17:40-18:00, Split/Bol, Croatia, July 6, 2022.

22. A Novel Sparse Image Reconstruction Based on Iteratively Reweighted Least Squares Using Diagonal Regularization, 4th International Conference on Information Technology and Education Technology 2023 (ITET 2023), 13:30-13:45, Okayama, Japan, May 13, 2023.

23. Iteratively Reweighted Least Squares by Diagonal Regularization, 20th International Joint Conference on Computer Science and Software Engineering (JCSSE 2023), 14:30-14:45, Phitsanulok, Thailand, June, 29, 2023.

24. An Approximation of FOCUSS Mean Squared Error, 20th International Joint Conference on Computer Science and Software Engineering (JCSSE 2023), 15:55-16:10, Phitsanulok, Thailand, June, 29, 2023.

25. An Approximation of FOCUSS Mean Squared Error, 20th International Joint Conference on Computer Science and Software Engineering (JCSSE 2023), 15:55-16:10, Phitsanulok, Thailand, June, 29, 2023.

26. Iterative Hard Thresholding Algorithm Using Norm Exponent, International Conference on Green Energy, Computing and Intelligent Technology (GEn-CITy 2023), 13:30-13:45, Iskandar Puteri, Malaysia, July 11, 2023.

27. State Estimation in Power System under Deterministic False Data Injection Attack Using Minimization of Nuclear Norm and l1 Norm with Noiseless Constraint Substitution, 2024 IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications (CIVEMSA 2024), 14:00-14:20, Xi'an, China, June 14, 2024.

28. State Estimation in Power System under Deterministic False Data Injection Attack Using Minimization of Nuclear Norm and l1 Norm with Noisy Constraint Substitution, 2024 IEEE IAS Industrial and Commercial Power System Asia (IEEE I&CPS Asia 2024) 13:30-13:45, Chonburi, Thailand, July 11, 2024.

Poster Presentation

1. Parameter estimations of MIMO channel with Ricean fading and uncorrelated signals, International ITG/IEEE Workshop on Smart Antennas (WSA) 2005, University of Duisburg-Essen, Duisburg, Germany, April 4-5, 2005.
2. A simple upper bound on mutual information for Ricean-fading MIMO channel, 14-th IST Mobile & Wireless Communication Summit, International Congress Centre Dresden, Dresden, Germany, June 19-23, 2005.
3. Channel capacity assessments in UWB communication system over lognormal fading, IEE Symposium on Ultra Wideband Systems, Technologies and Applications, London, UK, April 20, 2006.
4. A hybrid SS-ToA wireless NLoS geolocation based on path attenuation: Cramér-Rao bound, IEEE 69th Vehicular Technology Conference (VTC2009-Spring), Barcelona, Spain, April 26-29, 2009.
5. Time-of-arrival estimation in path attenuation, IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC), Perugia, Italy, June 21-24, 2009.

Workshop Participation

1. Participant, Joint 2nd Workshop on Positioning, Navigation and Communication 2005 (WPNC'05) & 1st Ultra-Wideband Expert Talk 2005 (UET'05), University of Hanover, Hanover, Germany, March 17, 2005.
2. Presenter, International ITG/IEEE Workshop on Smart Antennas (WSA) 2005, University of Duisburg-Essen, Duisburg, Germany, April 4-5, 2005.
3. Participant, VDE/ITG Diskussionssitzung UWB (UWB 2006 Workshop), IMST GmbH, Kamp-Lintfort, Germany, December 6-7, 2006.
4. Participant, Kick-Off-Meeting ,,Ultrabreitband-Funktechniken für Kommunikation, Lokalisierung und Sensorik (UKoLoS)," Fraunhofer-Institut für Nachrichtentechnik, Heinrich-Hertz-Institut, Berlin, Germany, February 15-16, 2007.
5. Participant, Workshop on "Commercial MIMO-Components and -Systems 2007", mimoOn GmbH, Duisburg, Germany, September 13-14, 2007.
6. Presenter, IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC), Perugia, Italy, June 21-24, 2009.
7. Participant, 6th Project Coordination Committee (PCC6) Meeting, COMONSENS (Foundations and Methodologies for Future Communication and Sensor Networks), Escuela Técnica Superior de Ingenieros de Telecomunicación, Universidad Politécnica de Madrid, Madrid, Spain, February, 6-8, 2012.
8. Presenter, 7th Project Coordination Committee (PCC7) Meeting, COMONSENS (Foundations and Methodologies for Future Communication and Sensor Networks), Escuela Técnica Superior de Ingeniería, Universidad de Valencia, Valencia, Spain, July, 11-13, 2012.
9. Presenter, 10th Project Coordination Committee (PCC10) Meeting, COMONSENS (Foundations and Methodologies for Future Communication and Sensor Networks), Rooms I and IV, Miralles Building, University Campus, Universidad de Vigo, Vigo, Spain, July 1-3, 2013.
10. Participant, 6th World Conference on Structural Control and Monitoring (6WCSCM), Edifici Vèrtex, Barcelonatech, Universitat Politècnica de Catalunya, Barcelona, Spain, July 15-17, 2014.