

## MOHAMMAD SHAHIDEHPOUR

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## SUMMARY OF ACTIVITIES

Dr. Mohammad Shahidehpour is the Bodine Chair Professor in the Electrical and Computer Engineering (ECE) Department and Director of Center for Electricity Initiative at Illinois Institute of Technology (IIT). He has been a faculty member at IIT for the last 27 years where he received the IIT's Excellence in Teaching Award. At IIT, he has also served as the Associate Provost for Research, Dean of the Graduate College, Associate Dean of Engineering for Research and Graduate Studies, Chair of the ECE Department. Under his leadership in 2010, the ECE Department was bestowed the IIT's prestigious research award for "Highest Research Grant Dollars per Faculty."

Dr. Shahidehpour is an expert in **electric power system optimization and control** with specific interests in the modeling of **electricity markets with microgrids and sustainable energy applications**. He is currently the principal investigator (PI) of over **\$35 million grants** on smart grid and sustainable energy. His "Perfect Power" project which is funded by the Department of Energy (DOE) will create a smart grid center with a 20% reduction in its base load consumption and 50% reduction in the peak load consumption. His "Wind Consortium" project which is also funded by DOE will contribute significantly to the next generation of wind turbine technology. He is also the PI for a "Wind Integration" project which will investigate the optimal locations in and the impact of wind integration on the U.S. Eastern Interconnection (i.e., the largest interconnection in the world with 5,000 generating units which extends from the Rocky Mountains to the East Coast in the United States).

Dr. Shahidehpour is currently an **honorary professor** in the North China Electric Power University (Beijing) and the Sharif University of Technology (Tehran). He is the 2009 recipient of the **honorary doctorate** form the Polytechnic University of Bucharest. He has supervised **87** visiting faculty as well as doctoral and master's degree students. He is the co-author of over **340** technical papers and six books on electric power system planning, operation, and control. He is also the 2009 recipient of **three best paper awards** for his publications in IEEE Transaction on Power Systems. For his contributions to power system research and development, he was awarded the **IEEE T. Burke Hayes** Faculty Recognition Award and the Sigma Xi Outstanding Senior Faculty Research Award. He also received the **Edison Electric Institute's** Power Engineering Educator Award and the **C. Holmes MacDonald** Outstanding Young Electrical Engineering Professor Award for his contributions to research and education. He is a **Fellow of IEEE** for his contributions to security-constrained unit commitment algorithms in power systems.

Dr. Shahidehpour serves on the Governing Board of the IEEE Power and Energy Society as **VP of Publications** and is the **Editor-in-Chief** of the IEEE Transaction on Smart Grid. He also served as an **Editor** of the IEEE Transactions on Power Systems for 13 years and the Guest Editor of IEEE Journals (seven times). He has been a member of the **Editorial Board of 11 journals**, including the Electricity Journal, and the organizing committee of several international conferences including the Technical **Program Chair** of the 2010 IEEE Innovative Smart Grid Technologies Conference. He served as the Chair of the IEEE Power System Operation Committee and received the Distinguished Service Award for serving on the Committee's Executive Council for eight years. He is also the recipient of six recognition awards for chairing and completing the mandated tasks of several IEEE/PES working groups. Dr. Shahidehpour is an **IEEE Distinguished Lecturer and has delivered over 60 lectures across the globe on electricity restructuring and smart grid issues**. He has been a keynote speaker in six International Conferences since 2007.

Dr. Shahidehpour is the past **president of the National Electrical Engineering Honor Society** (HKN), served on its executive committee for eight years, and received several awards for his contributions to the Society.

## ACADEMIC APPOINTMENTS

### Illinois Institute of Technology

#### Academic Positions in the Electrical and Computer Engineering Department

2005-present Bodine Chair Professor  
1991-2005 Professor  
1986-1991 Associate Professor  
1983-1986 Assistant Professor

#### Administrative Positions at Illinois Institute of Technology

2010-Present Director, Center for Electricity Innovation  
2005-2010 Chair, ECE Department  
2000-2005 Director, Electric Power and Power Electronics Center  
1994-2000 Associate Provost for Research and Dean of the Graduate College  
1993-1994 Associate Dean of Engineering for Research and Graduate Studies  
1986-1991 Associate Chairman, Electrical and Computer Engineering Department  
1985-1986 Director of Graduate Studies, Electrical and Computer Engineering Department

#### Other Appointments

1981-1983 Assistant Professor, Electrical Engineering Department, University of Michigan, Dearborn  
1977-1979 Research Fellow, Energy Organization of Iran

#### Honorary Appointments

2006-present Honorary Professor, Sharif University of Technology, Iran  
2002-present Honorary Professor, North China Electric Power University, Beijing

## TEACHING AND RESEARCH INTERESTS

**Research Interests:** stochastic optimization of electric power systems, microgrid design and operation, smart grid applications, sustainable energy alternatives, electricity restructuring, infrastructure interdependency analyses, computational economics, and decision analyses

**Publications:** over 350 technical articles and 6 books; 300 presentations, invited lectures, and conference chairmanship

**Research Supervision and Activities:** 36 doctoral dissertations, 27 post-doctoral fellows, and 25 Master's thesis students

**Technical Courses Taught:** Elements of Smart Grid, Market Operations in Power Systems, Operation and Control of Power Systems, Communication and Control in Power Systems, Renewable Electric Power Systems, Optimization Theory and Applications, Stochastic Methods Applied to Power Systems, Deregulated Power Systems, Power Systems Planning, Maintenance Scheduling in Power Systems, Control and Stability of Power Systems, Fault Tolerant Power Systems, Power System Reliability, Computational Methods in Power Systems, Power System Analysis, Linear Control Systems.

## EDUCATION

- Ph.D. Electrical Engineering Department, University of Missouri, Columbia, 1981  
M.S. Electrical Engineering Department, University of Missouri, Columbia, 1978  
B.S. Electrical Engineering Department, Sharif University of Technology, Iran, 1977 (High Honors)

## BOOKS

1. M. **Shahidehpour** and M. Marwali, Maintenance Scheduling in Restructured Power Systems, Kluwer Publishers, May 2000
2. M. **Shahidehpour** and M. Alomoush, Restructured Electrical Power Systems, Marcel Dekker Publishers, June 2001
3. M. **Shahidehpour**, H. Yamin and Z. Li, Market Operations in Electric Power Systems, John Wiley and Sons, March 2002
4. M. **Shahidehpour** and Y. Wang, Communication and Control of Electric Power Systems, John Wiley and Sons, June 2003
5. M. **Shahidehpour**, Z. Li and Y. Fu, Energy System Control and Operation, John Wiley and Sons, 2010
6. M. **Shahidehpour** and L. Wu, Stochastic Methods in Electric Power Systems, John Wiley and Sons, 2010

## PATENT

- P. Ristanovic, M. Bjelogric, J. Frame, M. Aganagic, and M. **Shahidehpour**, "Exchange, Scheduling and Control System for Electrical Power," Patent #7343360, Issued on March 11, 2008.

## HONORS AND AWARDS

### Recent Keynote Speeches

- 2010 Keynote Speaker, 2010 ISGT Conference, Gothenburg, Sweden
- 2010 Keynote Speaker, 2010 PMAPS Conference, Singapore
- 2010 Keynote Speaker, Third Brazilian Symposium on Electrical Power Systems, Belem, Brazil
- 2010 Keynote Speaker, 41<sup>st</sup> Energy Information Dissemination Program, Oklahoma State University
- 2010 Keynote Speaker, 2010 ICEE, Isfahan University of Technology, Iran
- 2009 Keynote Speaker, 2009 Meeting of Italian Federation of Electrical Engineers, Catania
- 2009 Keynote Speaker, 2009 Asia T&D Conference, Seoul, South Korea
- 2009 Keynote Speaker, 2009 PowerTech Conference, Bucharest, Romania
- 2008 Keynote Speaker, 2008 Power System Conference, Tehran, Iran
- 2007 Keynote Speaker, Industrial & Commercial Use of Energy Conference, Cape Town, South Africa
- 2003 Keynote Speaker, National Power Engineering Conference, Malaysia (2003)

### Honors

- 2010 Honorary Professor, Sharif University of Technology, Iran
- 2010 Honorary Professor, North China Electric Power University, Beijing, China
- 2009 Honorary Doctorate, Polytechnic University of Bucharest, Romania, June 2009
- 2003 IEEE Distinguished Lecturer (has made 80 presentations in 25 countries)
- 2001 Fellow of IEEE (for contributions to Security-Constrained Unit Commitment)
- 2000 National President of HKN (Board President for the EE Honor Society)
- 1993 Listed as one of the 50 R&D Stars to Watch, Industry Week magazine

### Teaching and Research Awards

- 2010 IIT's First Research Leadership Award (in Recognition of Outstanding Accomplishments in Developing Strong Research Collaborations and Large Scale Research Projects)
- 2009 IEEE/PSO Transactions Prize Paper Award (GENCO's Risk-Constrained Hydrothermal Scheduling, IEEE Transaction on Power Systems, Vol. 23, No. 4, pp. 1847-1858, Nov. 2008)
- 2007 IEEE/PES T. Burke Hayes Faculty Recognition Award in Electric Power Engineering
- 2005 IEEE/PES Transactions Prize Paper Award (Short-term Scheduling of Combined Cycle Units, IEEE Transaction on Power Systems, Vol. 19, No. 3, pp. 1616-1625, Aug. 2004)
- 2004 IEEE/PSO Transactions Prize Paper Award
- 2003 Sigma Xi Outstanding Senior Faculty Research Award
- 1999 Best Technical Paper Award, North American Power Symposium
- 1993 Edison Electric Institute's Power Engineering Educator Award
- 1990 C. Holmes MacDonald Outstanding Young Electrical Engineering Professor Award
- 1990 University's Excellence in Teaching Award, IIT
- 1982 University's Distinguished Faculty Award, University of Michigan-Dearborn

## **Service Awards**

- 2009 Distinguished Service Award, IEEE Power &Energy Society
- 2009 IEEE/PES Recognition Award for Chairing the Working-Group on Perfect Power Systems
- 2008 IEEE/PES Recognition Award for Chairing the Working-Group on Power Transmission Planning
- 2007 IEEE/PES Recognition Award for Chairing the Working-Group on Aging Power Systems
- 2006 IEEE/PES Recognition Award for Chairing the Working-Group on Power Asset Management
- 2000 Outstanding IEEE/PES Subcommittee Chair Award
- 1995 Outstanding IEEE/PES Working-Group Award (Power System Restoration)
- 1994 Distinguished Service Award, American Power Conference
- 1988 Outstanding HKN Chapter Advisor Award

## **EDITORIAL BOARD MEMBERSHIP**

### **IEEE Editorial Activities**

2009-present	Editor-in-Chief, IEEE Transaction on Smart Grid
2008-present	Vice President of Publications, IEEE Power and Energy Society
1995-2008	Editor, IEEE Transactions on Power Systems
2008	Guest Editor, IEEE Power and Energy Magazine (Energy Efficiency)
2007	Guest Editor, IEEE Power and Energy Magazine (Transmission System Planning)
2006	Guest Editor, IEEE Power and Energy Magazine (Aging Electricity Infrastructure)
2005	Guest Editor, IEEE Power and Energy Magazine (Asset Management)
2005	Guest Editor, IEEE Proceedings (Power Technology and Policy)
2004	Guest Editor, IEEE Power and Energy Magazine (Electricity Market)
2003	Guest Editor, Special Issue in IEEE Transaction on Power Systems

### **Member of Editorial Boards**

2009-present	Member of the Editorial Board, The Electricity Journal
2004-present	Member of the Editorial Board, KIEE Journal of Power Engineering (Korea)
2004-present	Member of the Editorial Board, International Journal of Emerging Electric Power
2003-present	Member of the Editorial Board, IEEE Power and Energy Magazine
2000-2002	Member of the Editorial Board, HKN Bridge Magazine
2000-2002	Editor, Marcel Dekker Book Series in Power Systems
1998-2002	Member of the Editorial Board, IEEE CAP Journal
1997-2000	Member of the Editorial Board, IEEE Transactions on Systems, Man and Cybernetics
1997-2009	Member of the Editorial Board, Journal of Electric Power Systems Research
1997-2008	Member of the Editorial Board, IEEE Power Engineering Letters
1996-2000	Member of the Editorial Board, Journal of Electric Machines and Power Systems

## RESEARCH AND DEVELOPMENT GRANTS AND CONTRACTS

- A World-Class Smart Grid Education and Workforce Training Center, (\$12,600,000 total), DOE, 2010-2013, (PI)
- Illinois Smart Grid Regional Innovation Cluster, \$600,000, Small Business Administration (SBA), 2010-2011 (Co-PI)
- Electric Infrastructure Planning, \$4,000,000, DOE, 2010-2013 (Co-PI)
- Perfect Power System at IIT, (\$12,000,000 total), DOE, 2008-2013 (PI)
- A World-Class University-Industry Consortium for Wind Energy Research, Education, and Workforce Development, (\$9,000,000 total), DOE, 2010-2011 (PI)
- Power Engineering Research and Education, \$5000,000, Grainger Foundation, 2007-2012 (PI)
- Wind Integration in the U.S. Eastern Interconnection, \$750,000, DOE, 2009-2010 (PI)
- Coordination of Renewable Hydro-Wind Units for Enhancing the Hydrothermal Power System Operation, \$350,000, National Science Foundation, 2008-2011 (Co-PI)
- Security-Constrained Optimal Coordination of Generation and Transmission Maintenance Outage Scheduling, \$300,000, National Science Foundation, 2007-2010 (Co-PI)
- Electricity Supply and Demand Analysis Model, Korea Power Exchange, \$130,000, 2007-2009 (PI)
- Electrical Engineering Laboratory Development, \$80,000, Elite Electronics, 2006 (PI)
- Wind Energy Technology Development in Illinois, \$50,000, Invenergy Corp, 2006 (PI)
- Technical and Market Integration of Small Hydro Development, \$50,000, Orenco Corp. 2006 (PI)
- Electrical Engineering Laboratory Development, \$400,000, Cherry Electronics, 2006 (PI)
- Electrical Engineering Laboratory Development, \$500,000, Zebra Technology, 2005-2006 (PI)
- Security Constrained Maintenance Scheduling, \$1,000,000, Siemens Corporation, 2006-2008 (PI)
- Unit Commitment with AC Constraints, \$700,000, Nexant Corporation, 2004-2005 (PI)
- Power Engineering Research, \$500,000, Grainger Foundation, 2004 (PI)
- A Novel Approach for Improving Power Electronics and Electric Drives Curriculum, \$400,000, NSF, 2003 (Co-PI)
- Leader Follower for Power Market Operations, \$150,000, NSF, 2003 (Co-PI)
- PV-Battery System for Transmission Management, \$120,000, DOE, 2003 (PI)
- Probabilistic Risk Evaluation of Transmission Systems, \$70,000, ComEd, 2002 (PI)
- Virtual Counseling in Illinois High Schools, \$50,000, Illinois Board of Higher Ed, 2001 (PI)
- Power Engineering Innovations, \$500,000, Grainger Foundation, (was matched by IIT for a total of \$1,000,000), 2000-2001 (PI)
- Distributed Control of Power Systems, \$250,000, ONR, 1999 (Co-PI)
- Illinois State Matching Grant Program, \$43,000, Illinois Board of Higher Education, 1999 (PI)
- Power Engineering Laboratory Research, \$200,000, ComEd, 1998 (PI)
- Interactive Risk-Based Planning for Dynamic Contingencies, \$150,000, EPRI, 1998 (Co-PI)
- A Multi-Agent Approach to Feeder Reconfiguration, \$50,000, NSF, 1998 (Co-PI)
- Grainger Power Engineering Laboratory at IIT, \$200,000, Grainger Foundation, 1997 (PI)
- Derivatives and Generation Business Opportunities, \$32,000, EPRI, 1997 (Co-PI)
- A WWW ALN for the Utility Industry, \$30,000, Sloan Foundation, 1997
- Knowbots for Internet-Based Combat Training, \$125,892, ARO, 1996 (Co-PI)
- Application of Game Theory to Power Systems, \$43,500, Siemens Corporation, 1996 (PI)

- Real-Time Control and Operation of Electric Power Systems, \$155,000, DOE, 1995 (PI)
- A Massively Parallel Population-Based Approach to Operations Scheduling, \$72,687, NSF, 1995 (PI)
- Application of Fuzzy Set Theory to Security Constrained Optimal Reactive Power Control in a Multi-Area, \$49,000, NSF, 1994 (PI)
- Railroad Transportation Curriculum Development for Enhancing the U.S. Infrastructure, \$180,000, NSF, 1993 (Co-PI)
- Resource Scheduling and Commitment, \$25,000, Commonwealth Edison Company, 1993 (PI)
- Special Machine Design, \$20,000, C.E. Neihoff Corporation, 1991 (Co-PI)
- Electric Power Distribution Innovation, \$20,000, Commonwealth Edison Company, 1991 (PI)
- Application of Fuzzy Logic to Power Plant Scheduling, \$7,500, TCC, 1991 (PI)
- Application of Artificial Neural Networks in Multi-Area Generation Scheduling with Fuzzy Data, \$60,400, EPRI, 1990 (PI)
- Scheduling of Power Interchange Between Interconnected Utilities, \$9,600, TCC, 1990 (PI)
- Application of Expert Systems to Generation Control and Scheduling in Large Power Plants, \$24,000, TCC, 1989 (PI)
- Expert System for Operational Scheduling and Generation Control, \$49,200, EPRI, 1988 (PI)
- Application of Expert Systems to Operational Reliability Analysis in a Large Plant, \$10,000, ERIF, 1987 (PI)
- Surge Protection of Underground Distribution Systems, \$22,500, Commonwealth Edison Company, 1986 (PI)

## INDUSTRIAL ACTIVITIES

1983-present Technical consultant to the following firms and organizations: ADICA, American Transmission Company, TransElect, LCG, New England ISO, Nexant, OM Technologies, KEMA Consulting, Siemens, Amoco, C.E. Neihoff Electric, ComEd, Exelon, IIT Research Institute, Open Access Technologies, Davis Control Corporation, United Nations

2003-present President, Global Energy Market Solutions

Recent consulting activities include:

TransElect, Chicago, IL, 2008-present  
Wind Power Planning

Acciona, Chicago, IL, 2008-present  
Wind Power Planning

Korea Power Exchange, Korea, 2007-2009  
Power System Planning

American Transmission Company, Waukesha, WI, 2006-2008  
Security-Constrained Unit Commitment  
Optimal Transmission Maintenance Scheduling

LCG Consulting, Los Altos, CA, 2007-2009  
Security-Constrained Unit Commitment for Greece.

Siemens Energy Automation, Minneapolis, MN, 1994-2008  
Security-Constrained Unit Commitment  
Optimal Transmission Maintenance Scheduling  
Optimal Generation Maintenance Scheduling  
Security-Constrained Integrated Maintenance Scheduling

New England ISO, Holyoke, MA, 2006-2007  
Security-Constrained Unit Commitment  
Optimal Transmission Maintenance Scheduling

Nexant Corporation, San Francisco, CA, 2003-2006  
Day-ahead Security-Constrained Unit Commitment with AC Network Constraints  
Reliability-Centered Generation and Transmission Maintenance Scheduler  
Market Power Monitoring

Exelon Corporation, Chicago, IL, 1990-2002  
Probabilistic Transmission Risk Analysis for the ComEd's Control Area

KEMA Consulting, Fairfax, VA, 2001  
Evaluation of commercial software capabilities for current and future generation scheduling projects

Open Access Technology International, Inc., 2000  
Locational Marginal Price (LMP) Calculation  
Inter-zonal and Intra-zonal Congestion Management  
Firm Transmission Right (FTR) Auction  
Price-based Unit Commitment (PBUC)  
Value at Risk (VaR) Calculation

## INVITED TALKS GIVEN AT EDUCATIONAL INSTITUTIONS AND INDUSTRY

(Sponsored by the host or the IEEE Distinguished Lecture program)

1. Korea University, Seoul (2010)
2. KEPCO Electric Power Research Institute, Daejeon, Korea (2010)
3. 2010 Nebraska Research and Innovation Conference, Lincoln, Nebraska (2010)
4. 2010 EEI Transmission and Distribution Conference, Denver (2010)
5. Chalmers University, Sweden (2010)
6. Federal University of Para, Belem, Brazil (2010)
7. Oklahoma State University (2010)
8. IEEE Chicago Section (2010)
9. Isfahan University of Technology, Iran (2010)
10. Sharif University of Technology, Iran (2010)
11. Nanyang Technological University, Singapore (2010)
12. National Seoul University, South Korea (2009)
13. University of Bologna, Italy (2009)
14. British Columbia Hydro, Canada (2009)
15. Polytechnic University of Bucharest, Romania (2009)
16. University of São Paulo, San Carlos, Brazil (2008)
17. Federal University do Rio Grande do Sul, Porte Alegre, Brazil (2008)
18. Pontifical Catholic University, Porte Alegre, Brazil (2008)
19. Tehran University, Iran (2008)
20. Sharif University of Technology, Iran (2008)
21. Cape Peninsula University of Technology, Cape Town South Africa (2008)
22. University of the Witwatersrand, Johannesburg, South Africa (2008)
23. Regulatory Authority for Energy, Athens, Greece, (2007)
24. American Transmission Company, Wisconsin (2007)
25. Electricity Engineers Association of New Zealand, Auckland (2007)
26. University of Auckland, New Zealand (2007)
27. Transpower New Zealand, Ltd, Wellington, New Zealand (2007)
28. Citadel Group, Illinois (2007)
29. American Transmission Company, Wisconsin (2006)
30. University of Waterloo, Canada (2006)
31. Sharif University of Technology, Iran, (2006)
32. Korea Power Exchange, Seoul (2006)
33. IEEE India Power Conference, Delhi (2006)
34. IEEE Qatar Section, Qatar (2006)
35. IEEE Dhahran Section, Saudi Arabia (2006)
36. King Fahd University of Petroleum and Minerals, Saudi Arabia (2006)
37. Polytechnic University of Tehran, Iran (2006)
38. Grid Management Corporation, Iran (2006)

39. Istanbul Technical University, Turkey (2005)
40. Mohandes Society, Toronto, Canada (2005)
41. University of Ireland (2005)
42. University of London, U.K. (2005)
43. Technical University of Bucharest, Romania (2005)
44. IEEE Chicago Section of PES, Chicago (2005)
45. IEEE Fox Valley Section, Illinois (2004)
46. University of Engineering and Technology, Lahore, Pakistan (2004)
47. Central Electricity Authority HQ, Delhi, India (2004)
48. Indian Institute of Technology, Madras, India (2004)
49. Federation of Andhra Pradesh Chambers of Commerce, Hyderabad, India (2004)
50. Jadavpur University, Calcutta, India (2004)
51. National Power Engineering Conference (keynote Speaker), Malaysia (2003)
52. American University of Beirut, Lebanon (2003)
53. Nexant Corporation, Arizona (2003)
54. OM Corporation, California (2003)
55. California ISO, Sacramento (2003)
56. American Transmission Company, Wisconsin (2003)
57. Sargent and Lundy Corporation, Illinois (2003)
58. Pars Corporation, California (2003)
59. North China Electric Power University, Beijing (2003)
60. Kolej Universiti Teknikal Kebangsaan Maleka, Malaysia (2003)
61. Exelon Corporation, Illinois (2002)
62. Yarmouk University, Jordan (2002)
63. Energy Transmission Company, Jordan (2002)
64. North China Electric Power University, China (2002)
65. Tsinghua University, China (2002)
66. Electric Power Research Institute, China (2002)
67. Tehran University, Iran (2002)
68. Energy Research Center, Ministry of Energy, Iran (2001)
69. Sharif University, Tehran, Iran (2001)
70. Ferdowsi University, Iran (2000)
71. Michigan Technological University (2000)
72. Southern Illinois University (2000)
73. OATI Corporation, Minnesota (1999)
74. Argonne National Laboratory, Illinois (1998)
75. University of Missouri-Rolla, Missouri (1997)
76. San Juan University, Argentina (1996)
77. Commonwealth Edison Company, Illinois (1995)
78. Marquette University, Wisconsin (1994)

## GRADUATE STUDENTS AND VISITING SCHOLARS

(The list includes 88 PhD students, visiting professor and scholars, and master's students)

### Ph.D. Students (Date of graduation is given in parenthesis)

1. K. Aflaki (ongoing) Power System Operation
2. M. Barati (ongoing) Power System Operation
3. M. Khodayar (ongoing) Power System Operation
4. M. Ghamdi (ongoing) Power System Operation and Planning
5. W. Tian (ongoing) A Simulator for Wind Integration in the Eastern Interconnection
6. A. Khodaei (ongoing) Transmission Switching in Power System Operation and Planning
7. S. Bahramirad (2010) Design and Implementation of Hydrokinetic Run-of-River Turbines
8. S. Kamalinia (2010) Expansion Planning of Fast-Response Units for Wind Integration
9. C. Liu (2010) Interdependency of Gas and Electricity in Restructured Power Systems
10. A. Lotfju (2009) DC Transmission System Integration for Enhancing Deliverability
11. L. Wu (2008) Stochastic Security-Constrained Unit Commitment
12. L. Abreu (2008) Wind Energy Coordination and Control
13. J. Roh (2008) Power System Planning in Restructured Power Systems
14. J. Wang (2007) Market Design Tools in Restructured Power Systems
15. H. Daneshi (2006) Market Simulation in Electric Power Systems
16. Y. Fu (2006) Security-Constrained Operational Planning in Power Systems
17. T. Li (2006) Competition and Risk Management in Power Markets
18. B. Lu (2004) SCUC with Flexible Operating Conditions
19. Z. Li (2002) Asset Valuation and Risk Analysis in Electric Power Systems
20. H. Yamin (2001) Options for Pricing Ancillary Services in a Deregulated System
21. M. Alomoush (1999) Auctionable Fixed Transmission Rights for Congestion Management
22. E. Rezanian (1998) Contingency Constrained Available Transfer Capability Calculations
23. J. Kavicky (1997) Application of Parallel Path in Transmission Open Access
24. M. Marwali (1997) Coordinated Transmission and Generation Maintenance Scheduling
25. H. Ma (1997) Decomposition Techniques for AC Unit Commitment
26. R. Ferrero (1997) Game Theory Applications to Deregulated Power System Operation
27. K. Abdul-Rahman (1994) Applications of Fuzzy Sets to Power Systems Operation and Planning
28. C. Wang (1992) Generation Scheduling of Hydro-Thermal Systems with Uncertain Data
29. C. Nwankpa (1990) Stochastic Models for Power System Dynamic Stability Analysis
30. Z. Ouyang (1990) Artificial Intelligence for Short Term Power Generation Scheduling
31. N. Deeb (1989) Decomposition Approach to Optimal Reactive Power Dispatch
32. S. Tong (1989) Generation Scheduling in Large Scale Hydro Thermal Power Systems
33. N. Abbasy (1988) Optimal Set of Measurements for Estimation of System States
34. S. Shah (1988) Expert Systems Application to Power Network Security Analysis
35. J. Qiu (1987) Effect of Random Perturbations on Power Systems Reliability Evaluation
36. J. Banda (1985) Surge Protection in Underground Distribution Systems

### **Visiting Faculty and Post-doctoral Scholars**

1. Professor Z. Tan, North China Electric Power University, China, (2008-2009): Economics of Electricity Markets
2. Professor M. Pantos, University of Ljubljana, Slovenia, (2008-2009): Power System Planning
3. Professor Y.H. Song, University of Liverpool, (2008-200): Computational Intelligence in Power Systems
4. Professor J. Liu, Sichuan University, China, (2008-2009): Market Operation of Electric Power Systems in China
5. Dr. T.K. Hahn, Kyungwon University, Korea, (2008-2010): Market Operation of Electric Power Systems in Korea
6. Mr. C. Sahin, Middle East Technical University, (2008-2009): Gas &Electricity Interdependencies
7. Mr. Farrokh Aminfar, Sharif University, (2009-2010): Reliability Evaluation of PMUs
8. Professor J. Choi, Gyeongsang National University, Korea, (2007-2009): Power System Planning
9. Professor J. Mantovani, Sao Paulo State University, Brazil, (2006-2007): Power System Operation
10. Dr. Y. Fu, GEMS Corporation, (2006-2007) Outage Management in Electricity Markets
11. Dr. T. Li, GEMS Corporation, (2006-2007): Strategic Bidding in Electricity Markets
12. Mr. O. Tor, Middle East Technical University, (2004-2005): Restructuring Models for Turkey
13. Dr. H. Kim, Pusan University, Korea, (2004-2006): Simultaneous Auction of Energy
14. Dr. Z. Li, GEMS Corporation, (2002-2003): Probabilistic Transmission Risk Analysis
15. Dr. Y. Wang, Tianjin University, PRC, (1999-2003): Distributed Energy Management Systems
16. Dr. H. Shanечи, Ferdowsi University, Iran, (2001): Distributed Generation Technologies
17. Dr. M. Alomoush, Yarmouk University of Jordan, (1999-2000): Supervisory Control of a Deregulated Power System
18. Dr. M. Marwali, Agency for the Assessment and Application of Technology, Indonesia, (1998): Reliability-Centered Maintenance Scheduling in Deregulated Power Systems
19. Dr. X. Wang, Harbin Institute of Technology, PRC (1995-1996): Power Systems Voltage Stability
20. Dr. R. Ferrero, University of San Juan, Argentina (1994-1996): Game Theory Applications to Power Systems
21. Prof. S. Zhu, Tsinghua University, PRC (1994-1995): Power Plants Control and Operation
22. Dr. X. Bai, Electric Power Research Institute, Beijing, PRC (1994-1995): Hydro-thermal Power Systems
23. Dr. K. Abdul-Rahman, Siemens Corporation (1993-1994): Optimal Generation Scheduling by Augmented Relaxation Method
24. Dr. I. Roytelman, Kiev Research and Design Institute, Kiev, USSR (1992-1993): Power Distribution Automation Techniques
25. Prof. M. Pourkermani, Technical University of Stuttgart, Germany (1991-1992): Special Purpose Synchronous Machines
26. Dr. S. Li, Research Institute of Electric Light Source Material, Nanjing, PRC (1990-1991): Objected Oriented Graphics in Power Systems
27. Prof. S. Sun, Tsinghua University, PRC (1986-1989): Power Systems Planning Techniques in China

**M.S. Thesis Students (Date of graduation is given in parenthesis)**

1. H. Noohi (2010) Wind Integration in the Eastern Interconnection
2. B. Noohi (2009) Cyber Security issues in Power Systems
3. S. Duggirala (2006) Transmission Planning in Restructured Power Systems
4. A. Khan (2006) Wind Speed Forecasting using Wavelets
5. V. Ellia (2005) Agents in Electric Power System Operation
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51. N. Maricar and M. **Shahidehpour**, “Visualization Approach to Power System Operation,” in Proceedings of the 1999 American Power Conference, Chicago, IL, Apr. 1999
52. H. Yamin and M. **Shahidehpour**, “Risk Management in Electricity Pricing in a Deregulated Power Market Utilizing a Probabilistic Model,” in Proceedings of the Third Electrical Engineering Conference, Mutah University, Jordan, Apr. 1999
53. M. Albaijat and M. **Shahidehpour**, “Fuzzy Applications to Power System,” in Proceedings of the Third Electrical Engineering Conference, Mutah University, Jordan, Apr. 1999
54. M. Albaijat and M. **Shahidehpour**, “Evolutionary Programming to Solve Optimal Power Flow,” in Proceedings of the 1999 American Power Conference, Chicago, IL, Apr. 1999
55. H. Yamin and M. **Shahidehpour**, “An Overview of Ancillary Services and Alternative Auction Designs in a Deregulated Environment,” in Proceedings of the 1999 American Power Conference, Chicago, IL, Apr. 1999
56. N. Maricar and M. **Shahidehpour**, “An Object Oriented Programming Approach to Power System Network Analysis Through Visualization,” in Proceedings of the Third workshop on Electro-Communication and Information, Japan, Mar. 1999
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58. H. Yamin, M. **Shahidehpour** and A. Keyhani, “Electricity Pricing Utilizing Transmission Constrained Unit Commitment and Game Theory in a Deregulated Power Marketplace,” in Proceedings of 1999 International Conference on System Sciences, Hawaii, Jan. 1999
59. H. Yamin and M. **Shahidehpour**, “Generation Scheduling in an Uncertain Environment for Deregulated Systems Based on Game Theory,” in Proceedings of the 1998 Large Engineering Systems Conference on Power Engineering, pp. 311-316, Nova Scotia, Canada, June 1998
60. M. Alomoush and M. **Shahidehpour**, “Decision in a Deregulated Power Environment Based on Fuzzy Approach,” in Proceedings of the 1998 Large Engineering Systems Conference on Power Engineering, pp. 305-310, Nova Scotia, Canada, June 1998
61. E. Rezaia and M. **Shahidehpour**, “A New Bounding Method for Contingency Analysis using Exact Generalized Real Power Distribution Factor,” in Proceedings of the 1998 Large Engineering Systems Conference on Power Engineering, pp. 236-240, Nova Scotia, Canada, June 1998
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63. J. Kavicky and M. **Shahidehpour**, “Characterizing and Modeling Subarea-Level Energy Transactions,” in Proceedings of the 1998 American Power Conference, pp. 441-445, Chicago, IL, April 1998
64. H. Ma and M. **Shahidehpour**, “Transmission Constrained Unit Commitment based on Benders Decomposition,” in Proceedings of the 1997 American Control Conference, pp. 104-109, Albuquerque, NM, June 1997
65. J. Kavicky and M. **Shahidehpour**, “Simplifying Generator Siting and Contractor Options,” in Proceedings of the 1997 American Power Conference, pp. 120-131, Chicago, IL, April 1997

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70. X. Bai, E. Yu and M. **Shahidehpour**, "Constrained Unit Commitment by Using Tabu Search Algorithm," in Proceedings of 1996 International Conference on Electrical Engineering, pp. 1088-1093, Beijing, China, Aug. 1996
71. R. Ferrero and M. **Shahidehpour**, "Transaction Evaluation in Deregulated Hydro-thermal Systems," in Proceedings of the 1995 American Power Conference, pp. 1713-1719, Chicago, IL, April 1995
72. N. Ong, V. Ramesh and M. **Shahidehpour**, "Parallel Approach for Probabilistic Short-Circuit Studies," in Proceedings of the 1995 American Power Conference, pp. 636-641, Chicago, IL, April 1995
73. N. Ong, C. Beck and M. **Shahidehpour**, "Analysis of Simultaneous Unbalanced Faults Using Three-Port Network Theory," in Proceedings of the 1995 American Power Conference, pp. 642-647, Chicago, IL, April 1995
74. V. Ramesh and M. **Shahidehpour**, "Scheduling Power with Infrastructure Bottlenecks," in Proceedings of NSF Workshop on Electric Power Systems Infrastructure, Pullman, WA, Oct. 1994
75. K. Abdul-Rahman, M. **Shahidehpour** and N. Deeb, "Effect of EMF on Minimum Cost Power Transmission," in Proceedings of 1994 IEEE T&D Conference, Chicago, IL, Apr. 1994
76. K. Abdul-Rahman and M. **Shahidehpour**, "Applications of Artificial Intelligence to Optimal Var Control in Electric Power Systems," in Proceedings of EPRI Conference on Applications of Expert systems in the Power Industry, Phoenix, AZ, Dec. 1993
77. C. Wang and M. **Shahidehpour**, "Optimal Generation Scheduling with Ramping Constraints," in Proceedings of the 1993 Power Industry Computer Applications (PICA) Conference, Phoenix, AZ, May 1993
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79. K. Abdul-Rahman and M. **Shahidehpour**, "Optimal Reactive Power Dispatch with Fuzzy Variables," in Proceedings of 1993 IEEE International Symposium on Circuits and Systems, Chicago, IL, May 1993
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81. K. Labudda and M. **Shahidehpour**, "A Fuzzy Multi-Objective Approach to Power System State Estimation," in Proceedings of International Conference on Expert System Applications to Power Systems, Melbourne, Australia, Jan. 1993

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84. C. Wang and M. **Shahidehpour**, "A Fuzzy Set Approach to Tie line Flow Computation in Optimal Power Flow Scheduling," in Proceedings of 1992 American Power Conference, pp. 1443-1450, Chicago, IL, Apr. 1992
85. C. Wang and M. **Shahidehpour**, "Multi-Area Unit Commitment with Ramp Limits," in Proceedings of 1992 American Power Conference, pp. 1075-1083, Chicago, IL, Apr. 1992
86. Z. Ouyang, M. **Shahidehpour** and R. Adapa, "A Hybrid Neural Network Dynamic Programming Algorithm for Multi-Area Generation Scheduling," in Proceedings of 1992 American Power Conference, Chicago, IL, Apr. 1992
87. S. Li, M. **Shahidehpour** and R. Adapa, "Classification of Units in Short-Term Generation Scheduling by Expert Systems," in Proceedings of 1991 EPRI Conference on Expert System Applications for the Electric Power Industry, Boston, MA, Sept. 1991
88. M. **Shahidehpour**, "A Fuzzy Set Approach to Heuristic Power Generation Scheduling with Uncertain Data," in Proceedings of 1991 NSF/EEI Workshop, Norman, OK, July 1991
89. C. Nwankpa and M. **Shahidehpour**, "Analysis of Various Random Perturbations of Transmission Lines in Power System Studies," in Proceedings of 1991 American Control Conference, Boston, MA, June 1991
90. N. Deeb and M. **Shahidehpour**, "Multi-Area Reactive Power Control Using Cross Decomposition," in Proceedings of 1991 American Control Conference, Boston, MA, June 1991
91. M. **Shahidehpour**, "Probabilistic Assessment of Hydrothermal Generation Capacity in a Less Regulated Environment," in Proceedings of NSF Workshop on the Impact of a Less Regulated Utility Environment on Power System Control and Security, Madison, WI, Apr. 1991
92. C. Wang and M. **Shahidehpour**, "Application of Neural Networks in Generation Scheduling with Fuzzy Data," in Proceedings of 1991 American Power Conference, Chicago, IL, Apr. 1991
93. C. Nwankpa and M. **Shahidehpour**, "A New Approach to the Indication of Voltage Collapse in Electric Power Systems," in Proceedings of 1990 Power Systems Computation Conference, Graz, Austria, Aug. 1990
94. C. Nwankpa and M. **Shahidehpour**, "Effect of Small Load Fluctuations on Power System Voltage Stability Studies," in Proceedings of the 1990 American Control Conference, pp. 2106-2110, San Diego, CA, May 1990
95. C. Nwankpa and M. **Shahidehpour**, "A Class of Power Network Reliability Problems Via Colored Noise Modeling," in Proceedings of the 1990 IEEE International Symposium on Circuits and Systems, pp. 164-167, New Orleans, LA, May 1990
96. Z. Ouyang and M. **Shahidehpour**, "Generation Scheduling Decision Supported by Neural Networks," in Proceedings of the 1990 EPRI Conference on Decision Support Methods for the Electric Power Industry, Cambridge, MA, May 1990
97. C. Wang and M. **Shahidehpour**, "Unit Commitment by Neural Networks," in Proceedings of 1990 American Power Conference, Vol. 52, pp. 245-250, Chicago, IL, Apr. 1990

98. M. **Shahidehpour**, "Multi-Stage Unit Commitment by Artificial Neural Networks," in Proceedings of the NSF Workshop on Artificial Neural Networks, pp. 66-70, Clemson, SC, Apr. 1990
99. Z. Ouyang and M. **Shahidehpour**, "Power Generation Scheduling Using an Expert System," in Proceedings of the Sixth IASTED Conference on Expert Systems, pp. 134-137, Los Angeles, CA, Dec. 1989
100. C. Nwankpa and M. **Shahidehpour**, "A Probabilistic Approach to Bulk Power Transmission Reliability," in Proceedings of the 1989 North American Power Symposium, pp. 88-94, Rolla, MO, Oct. 1989
101. A. Behera and M. **Shahidehpour**, "Dynamics of Power Systems in Reliability Studies," in Proceedings of 32nd Midwest Symposium on Circuits and Systems, pp. 268-272, Urbana, IL, Aug. 1989
102. M. **Shahidehpour**, "Power System Restoration-An Expert System Approach," Presented at the 1989 IEEE Power Engineering Society Summer Power Meeting, Long Beach, CA, July 1989
103. C. Nwankpa and M. **Shahidehpour**, "Inclusion of Small Random Perturbations in a Structure Preserving Model for Power System Reliability Studies," in Proceedings of the 1989 IASTED International Conference on Power, pp. 471-475, Valencia, Spain, July 1989
104. N. Deeb and M. **Shahidehpour**, "Modeling of Protection System in Composite Power Systems Reliability Evaluation," in Proceedings of the 16th International RAM Conference for the Electric Power Industry, pp. 415-421, Monterey, CA, June 1989
105. S. Shah and M. **Shahidehpour**, "A Rule Based Load Shedding Strategy in Electric Power Systems," in Proceedings of the EPRI Conference on Expert Systems in Power, Orlando, FL, June 1989
106. S. Tong and M. **Shahidehpour**, "An Innovative Approach to Generation Scheduling in Large- Scale Power Systems with Fuel Constrained Units," in Proceedings of the 1989 IEEE Power Industry Computer Applications Conference, pp. 188-196, Seattle, WA, June 1989
107. N. Deeb and M. **Shahidehpour**, "Calibration of Measurement Sets in an Electric Power System Using an Updated Broyden Method," in Proceedings of the 1989 American Power Conference, Chicago, IL, Apr. 1989
108. N. Deeb and M. **Shahidehpour**, "Economic Allocation of Reactive Power Supply in an Electric Power Network," in Proceedings of the 1989 IEEE International Symposium on Circuits and Systems, pp. 1859-1862, Portland, OR, May 1989
109. M. **Shahidehpour**, "Utilities' Concern for the Design of a Power System Security Analyzer," Presented at the 1988 Annual Meeting of the American Association for Artificial Intelligence, Minneapolis, MN, Aug. 1988
110. S. Shah and M. **Shahidehpour**, "Application of Expert System in the Design of Power System Security Analyzer," in Proceedings of the 1988 IASTED International Conference on Expert System Theory and Applications, pp. 14-18, Geneva, Switzerland, June 1988
111. J. Qiu and M. **Shahidehpour**, "Application of Singular Perturbation in Modeling Load Disturbances and Its Effect on Power Systems Reliability Evaluation," Presented at the 1988 SIAM Annual Meeting, Minneapolis, MN, May 1988
112. S. Shah and M. **Shahidehpour**, "Automated Reasoning: A New Concept in Power System Security Analysis," in Proceedings of the IEEE International Workshop on Artificial Intelligence for Industrial Applications, pp. 58-63, Hitachi City, Japan, May 1988

113. N. Abbasy and M. **Shahidehpour**, “An Overview of Power Systems Static State Estimation,” in Proceedings of the 4th International Conference on Advanced Science and Technology, pp. 286-296, Chicago, IL, March 1988
114. N. Abbasy and M. **Shahidehpour**, “Power System State Estimation: A Mathematical Programming Approach,” in Proceedings of the 1988 IASTED International Conference on High Tech in Power Industry, pp. 56-61, Tempe, AZ, Feb. 1988
115. S. Shah and M. **Shahidehpour**, “Application of Expert Systems to Power System Security Analysis,” in Proceedings of the 49th Annual Meeting of the American Power Conference, pp. 780-788, Chicago, IL, Apr. 1987
116. G. Kraft and M. **Shahidehpour**, “Application of Artificial Intelligence to Distributed Processing in a Power System Environment,” in Proceedings of the 6th Power Plant Dynamics, Control and Testing Conference, Knoxville, TN, June 1986
117. J. Banda and M. **Shahidehpour**, “Underground Distribution Surge Protection,” in Proceedings of the 48th Annual Meeting of the American Power Conference, pp. 657-664, Chicago, IL, Apr. 1986
118. G. Kraft and M. **Shahidehpour**, “Recovery Techniques in a Distributed Power Environment,” in Proceedings of the 1985 Power Plant Digital Control and Fault-Tolerant Microcomputers Conference, (Electric Power Research Institute), Phoenix, AZ, Sept. 1985
119. M. **Shahidehpour**, “Benefits of Interconnection in Three-Area Power Systems, in Proceedings of the 1985 Midwest Power Symposium, Houghton, MI, Oct. 1985
120. F. Samouhi and M. **Shahidehpour**, “Effect of Forced Oscillation on Transient Stability of Power Systems by Direct Method of Liapunov,” in Proceedings of the 1984 Midwest Power Symposium, Philadelphia, PA, Oct. 1984
121. M. **Shahidehpour**, J. Tudor and C. Harbourt, “Multi-Area Power Reliability Evaluation,” in Proceedings of the 1982 Reliability and Maintainability Symposium, pp. 132-137, Los Angeles, CA, Dec. 1982
122. M. **Shahidehpour** and J. Tudor, “Determination of LOLP and the Effect of Tie Capacity on Area Reserve Requirements,” in Proceedings of the 1980 Midwest Power Symposium, Purdue University, West Lafayette, IN, Oct. 1980

## PROFESSIONAL ACTIVITIES

### IEEE Activities

- 2004-2006 Chairman, Transactions Committee, IEEE Technical Activities Board
- 2003-2006 Member, IEEE Fellows Committee

### IEEE/PES Activities

- 2008-present Editor-in-Chief, IEEE Transactions on Smart Grid
- 2008-present Vice President-Publications, IEEE Power and Energy Society
- 2003-2009 IEEE/PES Power System Operations Committee (Chair, Vice-Chair, Secretary)
- 2002-2007 Chairman, IEEE/PES Prize Paper Awards Committee
- 1996-1998 Chairman of the Operation Methods Subcommittee of the IEEE/PES
- 1987-1993 Chairman of the IEEE/PES Task Force on Power System Protection Reliability

### IEEE/PES Chicago Section Activities

- 1992-1993 Chairman of the Chicago Chapter of IEEE Systems, Man & Cybernetics Society
- 1992-1993 Chairman of the IEEE Region 4 Student Paper Contest
- 1992-1993 Member of the IEEE Admissions and Advancement Committee (Reviewed nominations for the IEEE Senior membership)
- 1986-1987 Seminar Chairman of the Chicago Chapter of the IEEE/PES
- 1985-1986 Program Chairman of the Chicago Chapter of the IEEE/PES
- 1985-1987 Member of the IEEE Task Forces on Bibliography and Bulk Transmission Reliability
- 1984-1989 Secretary of the IEEE/PES Subcommittee on Applications of Probability Methods
- 1983- Present Member of IEEE/PES Subcommittees on Power Systems Control, Power Systems Operation, Power System Economics, Applications of Probability Methods (Chaired / organized 50 technical sessions, presented 200 technical papers and seminars)

### International Conferences Activities

- 2010 Member of the Technical Committee of ISGT Europe, Sweden
- 2010 Technical Program Chair, IEEE Smart Grid Technologies Conference
- 2010 Member of the Technical Committee of PSCC'11, Greece
- 2007 Member of the Advisory Committee of the DRPT 2007, China
- 2007 Member of the Technical Committee of the ELECO 2007, Turkey
- 2006 Member of the Technical Committee of IEEE SMC, Taiwan
- 2005 Member of the Technical Committee of the ELECO 2005, Turkey
- 2005 Member of the Technical Program Committee of JIEEE05, Jordan
- 2003 Member of the Technical Program Committee of LASCOPE03, Canada
- 2003 Member of the Technical Committee of the ELECO 2003, Turkey
- 2003 Member of the Technical Committee of the IEEE SMC Conference
- 1994-2002 Member of the Technical Committee of the IEEE PICA Conference
- 1993-1994 Member of the Executive Committee of the IEEE T&D Conference

- 1991-1992 Vice-Chairman of the IEEE Systems, Man and Cybernetics Conference
- 1984-1991 Associate Director of the American Power Conference
- 1991-2000 Member of the Advisory Board of the American Power Conference

**Activities at EE National Honor Society (HKN)**

- 2007-present Chair, Distinguished Service Award Committee
- 1995-2000 Member of the HKN's Outstanding Professor Award Committee
- 1993-2000 Member of the HKN's National Board of Directors
- 1992-1994 President and vice-president of the IIT's Sigma Xi Society

**External Examiner of PhD Programs**

- 2003 Member of the PhD Board of Examiners, Indian Institute of Technology, (Kanpur, Bombay, Kharagpur), University of Waterloo, San Juan University (Argentina)
- 2003 External Reviewer, American University of Beirut Graduate Degree program in Computer and Communication Engineering
- 1998-present External Reviewer of Research Projects at the Kuwait University, University of Petroleum and Minerals in Saudi Arabia
- 1983-present External Reviewer for Promotion and Tenure Cases at  
 University of Manchester-Institute of Science and Technology  
 Yarmouk University, Jordan  
 American University of Beirut  
 University of Wisconsin  
 University of Nebraska  
 University of Missouri  
 Drexel University  
 Michigan Technological University  
 Texas A&M University  
 Southern Illinois University  
 San-Juan University, Argentina  
 Sultan Qaboos University, Oman  
 Tulane University  
 Michigan State University  
 New Mexico Tech  
 Clemson University  
 Petra University, Malaysia  
 Nanyang Technical University, Singapore  
 Mississippi State University

**Technical Review Activities**

- 1983-present Technical reviewer (reviewed 800 papers) for IEEE Transactions on Power Systems, IEEE Transactions on Power Delivery, IEEE Transactions on Circuits and Systems, IEEE Transactions on Systems, Man and Cybernetics, IEE Proceedings, Journal of Optimization Theory and Applications, Canadian Electrical and Computer Engineering Journal, International Journal of Electrical Power and Energy Systems, Journal of Optimal Control Applications, Journal of Intelligence Systems Review, Kluwer Publishers, Academic Press Publishing Company, Journal of Electric Machines and Power Systems IFAC Symposium, International Conference on Systems, Man and Cybernetics, Power Industry

Computer Applications Conference, International Symposium on Circuits and Systems, American Control Conference, Power System Computation Conference, Journal of Electric Power Systems Research

1983-present Technical reviewer for John Wiley, Qatar Foundation, EPRI, DOE, AFOSR, NSF and ONR (reviewed technical proposals and participated in workshops and review panels)

### **Technical Sessions Organized at National Meetings**

1. Load Management: 1984 American Power Conference, Chicago, IL
2. Environment: 1985 American Power Conference, Chicago, IL
3. System Reliability Evaluation: 1985 IEEE/PES Summer Meeting, Vancouver, Canada
4. Transmission System Reliability: 1986 IEEE/PES Summer Meeting, Mexico City
5. Electrical Transmission: 1986 American Power Conference, Chicago, IL
6. Expert Systems in Power Systems: 1988 International Conference on Expert Systems, Switzerland
7. Production Costing: 1990 IEEE/PES Winter Meeting, Atlanta, GA
8. Power System Operations Topics: 1990 IEEE/PES Winter Meeting, Atlanta, GA
9. Real and Reactive Power Dispatch: 1991 IEEE/PES Summer Meeting, Minneapolis, MN
10. Neural Networks: 1991 American Power Conference, Chicago, IL
11. Bulk Power System Reliability: 1991 IEEE/PES Summer Meeting, San Diego, CA
12. Power Electronics Applications: 1991 North American Power Symposium, Carbondale, IL
13. Real Time Pricing and Optimal Scheduling: 1992 IEEE/PES Winter Meeting, New York, NY
14. System Operations Topics: 1992 IEEE/PES Winter Meeting, New York, NY
15. Advances in Reliability Computation: 1992 IEEE/PES Winter Meeting, New York, NY
16. Power System Economic Evaluation: 1992 IEEE/PES Summer Meeting, Seattle, WA
17. Power Systems Dynamics: 1992 IEEE International Conference on SMC, Chicago, IL
18. Poster Panel Session: 1992 American Power Conference, Chicago, IL
19. Fuzzy Systems: 1993 Conference on Expert Systems Applications to Power Systems, Australia
20. Poster Panel Session: 1993 American Power Conference, Chicago, IL
21. System Operations Topics: 1993 IEEE/PES Summer Meeting, Vancouver, Canada
22. System Operations: 1994 IEEE/PES Winter Meeting, New York, NY
23. Power System Stability: 1994 American Power Conference, Chicago, IL
24. Operations Support-ANN Topics: 1994 IEEE/PES Winter Meeting, New York, NY
25. Hydro Scheduling: 1995 PICA, Salt Lake City, UT
26. Economic Generation Dispatch: 1996 IEEE/PES Summer Meeting, Denver, CO
27. Risk Management in Deregulated Systems: 1996 IEEE/PES Summer Meeting, Denver, CO
28. Unit Commitment: 1997 PICA, Columbus, Ohio
29. State Estimation: 1998 Large Engineering Systems Conference, Halifax, Canada
30. Operation Methods: 1999 IEEE/PES Winter Meeting, New York, NY
31. Hydro Applications: 1999 PICA, Santa Clara, CA
32. Analytical Methods: 1999 PICA, Santa Clara, CA
33. Tools for Restructured Power Systems: 2003 IEEE/PES Annual Meeting, Toronto, Canada
34. Power Market Operations: 2010 IEEE Smart Grid Innovation Technologies, Gaithersburg, MD