

## CURRICULUM VITAE

**Marija D. Ilić**

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**PERSONAL**

Born February 11, 1951 in Zajecar, Yugoslavia

**EDUCATION**

<i>Degree</i>	<i>Discipline</i>	<i>University</i>	<i>Date</i>
Dipl. Ing.	Electrical Engineering	Belgrade, Yugoslavia	1974
MEE	Electrical Engineering	Belgrade, Yugoslavia	1977
M.Sc.	Systems Science and Mathematics	Washington University St. Louis, MO	1978
DSc	Systems Science and Mathematics	Washington University St. Louis, MO	1980

**PROFESSIONAL EXPERIENCE**

<i>Date</i>		<i>Employer/Position</i>
Oct. 2002	present	Carnegie Mellon University, Professor (tenured), ECE/EPP
Dec. 2003	Dec. 2005	MIT/Engineering Systems Division: Visiting Professor (unpaid)
Sept. 1989	2003	MIT: Senior Research Scientist
Sept. 1987	Sept. 1989	MIT: Visiting Associate Professor
Aug. 1986	Aug. 1989	University of Illinois: Associate Professor (with tenure)
Aug. 1984	Aug. 1986	University of Illinois: Assistant Professor
June 1984	Aug. 1984	General Electric R&D Center: Visiting Researcher
July 1982	June 1984	Cornell University: Assistant Professor
Aug. 1981	July 1982	Drexel University: Assistant Professor
Jan. 1981	Aug. 1981	Washington University: Research Associate and Lecturer
Aug. 1975	Dec. 1980	Washington University: Student Research Assistant
Sept. 1976	Aug. 1977	Institute for Automation and Telecommunications, Belgrade Principal Research Engineer

## CONSULTING EXPERIENCE

Apr. 2003	Federal Energy Regulatory Commission (FERC)
2003	Charles River Research, Inc. (for FirstEnergy, Inc.)
1999 (appointed)	National Science Foundation
1997	Fulcrum International, Inc.
1997	Standard Poor's (Energy)
1994 to present	Brattle/IRI, Inc., Senior Advisor
1996	US Department of Energy
1991	Martin Marietta Energy Systems, Inc.
1990	The ENMASS Co.
Jan. 1990 to Dec. 1990	Power Technologies, Inc.
1995	The Tabors and Caramanis Associates. Co.
1995	The Tabors and Caramanis Associates. Co.
1989 to 1991	The Analytic Science Co.,
Sept. 1989 to Sept. 1991	New England Electric Service Co.
1988 to 1991	Decision Systems, International Inc.
Sept. 1985 to Sept. 1987	General Electric R&D Center

## PRINCIPAL FIELDS OF INTEREST

Modeling and control of complex network systems; Nonlinear network and systems theory; Modeling and control of economic and technical interactions in dynamic systems under uncertainties; Critical infrastructures and their interdependencies; Computer methods and algorithms for simulating large-scale dynamic systems; Electric power systems modeling; Design of monitoring, control and pricing algorithms for electric power systems; Normal and emergency control of electric power systems.

## TEACHING HISTORY

<i>Semester Offered</i>	<i>Course Title</i>
ST 04 (Carnegie Mellon)	Modern Electrical Power Systems (mini)
ST 04 (Carnegie Mellon)	The Changing Electric Power Industry (mini)
ST 04 (Carnegie Mellon)	EPP Project Management
ST 04 (Carnegie Mellon)	EPP Projects
FT 03 (Carnegie Mellon)	Special Topics in Systems & Control: Large-Scale Dynamic Systems Revisited
ST 03 (Carnegie Mellon)	The Changing Electric Power Industry (mini)
ST 03 (Carnegie Mellon)	Modern Electrical Power Systems (mini)
ST 02(M.I.T.)	Large Scale Dynamic Systems Revisited
FT 01(M.I.T.)	Operation and Planning of Electric Power Systems
ST 01(M.I.T.)	Advanced Electric Power Systems II
FT 00(M.I.T.)	Advanced Electric Power Systems I
FT 99(M.I.T.)	Operation and Planning of Electric Power Systems
ST 99(M.I.T.)	Advanced Electric Power Systems II

FT 99(M.I.T.)	Advanced Electric Power Systems I
ST 98(M.I.T.)	Circuits and Electronics
FT 97(M.I.T.)	Operation and Planning of Electric Power Systems
ST 97(M.I.T.)	Advanced Electric Power Systems II
FT 96(M.I.T.)	Advanced Electric Power Systems I
ST 96(M.I.T.)	Hierarchical Control of Power Systems: Its Value Under Changing Industry
FT 95(M.I.T.)	Operation and Planning of Electric Power Systems
ST 95(M.I.T.)	Advanced Electric Power Systems II
FT 94(M.I.T.)	Advanced Electric Power Systems I
ST 94(M.I.T.)	Feedback Systems
ST 94(M.I.T.)	Dynamics and Control of Electrical Machines
FT 93(M.I.T.)	Operation and Planning of Electric Power Systems
ST 93(M.I.T.)	Advanced Power Systems II
FT 92(M.I.T.)	Advanced Electric Power Systems I
ST 92(M.I.T.)	Dynamics and Control of Electrical Machines
FT 91(M.I.T.)	Operation and Planning of Electric Power Systems
ST 91(M.I.T.)	Introduction to Electric Power Systems
ST 90(M.I.T.)	Advanced Electric Power Systems II
FT 90(M.I.T.)	Advanced Electric Power Systems I
ST 90(M.I.T.)	Dynamics and Control of Electrical Machines
ST 89(M.I.T.)	Operation and Planning of Electric Power Systems
ST 89(M.I.T.)	Circuits and Electronics
FT 88(M.I.T.)	Circuits and Electronics
ST 88(M.I.T.)	Circuits and Electronics
FT 87(M.I.T.)	Circuits and Electronics
ST 87(Univ of Illinois)	Computer Methods in Electric Power Systems
ST 86(Univ of Illinois)	Special Topics in Electric Power Systems
FT 86(Univ of Illinois)	Solid State Control of Electric Drives
ST 86(Univ of Illinois)	Special Topics in Electric Power Systems
FT 85(Univ of Illinois)	Power Electronics
ST 85(Univ of Illinois)	Advanced Modeling & Control of Electrical Machines
FT 84(Univ of Illinois)	Computer Methods for Electric Networks
ST 84(Cornell Univ.)	Linear Circuits & Systems
FT 83(Cornell Univ.)	Power Systems Analysis II
ST 83(Cornell Univ.)	Power Systems Analysis I
FT 82(Cornell Univ.)	Electrical Engineering Laboratory
ST 82(Drexel Univ.)	Linear Systems Theory
FT 81(Drexel Univ.)	Linear Circuit Analysis
ST 81(Washington Univ.)	Advanced Power Systems Analysis
FT 80(Washington Univ.)	Probability and Engineering Statistics
ST 80(Washington Univ.)	Numerical Analysis

## STUDENT PROJECTS

### (a) Undergraduate Projects (total 3)

Manghtal, S., "An Investigation of Three Different Ways of Modeling Loads in Load Flow Analysis," June 1990.  
 Lee, J.H., "Transmission Line Modeling for Large-Scale Electric Power Systems," February 1994.  
 Edoh, H., "Frequency and Power Generation Control in a Decentralized Electric Utility System," February 1995.

**(b) Master's Students (total 44)**

Schultz, D., "An Estimate of the Q-V Decoupling Error," September 1984 (Cornell University).  
 Dobraca, F., "A Novel Approach to the System-Wide Protection of Large Power Systems," September 1986 (University of Illinois).  
 Fong, M., "Instantaneous Torque Control of Switched Reluctance Motors Using Floquet Theory," September 1986 (University of Illinois).  
 Crow, M.L., "Transient Stability Simulation by Waveform Relaxation Techniques," September 1986 (University of Illinois).  
 Shanahan, P., "Approximate Methods for Voltage Monitoring and Control in Electric Power Systems," December 1987 (University of Illinois).  
 Rayes, A., "Numerical Issues in Studying a Linear Dynamical Model of a Realistic Power Electronic Circuit," May 1988 (University of Illinois).  
 Stobart, W.J., "Using Reactive Power Reserves for Hierarchical Control of Electric Power Systems," June 1990 (Mechanical Engineering Department).  
 Kiryaman, T., "Nonlinear Analysis and Control of Switched-Mode DC to DC Converters," February 1991 (Nuclear Engineering Department).  
 Millis, K., "Small Signal Stability of Power Converters Connected in Parallel," June 1991.  
 Lim, K.K., "Coordination and Control Logic Design for Slow Voltage Control Devices in Electric Power Systems," September 1991 (Mechanical Engineering Department).  
 Tolikas, M., "The Application of Homotopy Methods in the Analysis of Electric Power Systems," June 1992.  
 Nishimura, F., "Benefit Optimization of Electric Energy Exchange in a Deregulated Multi-Utility Environment," June 1992.  
 Jaber, Z. C., "Computer Applications in Power Systems," September 1992 (American University of Beirut, Lebanon, co-supervised with M. Yehia).  
 Lacalle-Melero, J. R., "Short Term Stability Analysis of Electrical Energy Markets Under the Real Time Pricing," February 1993.  
 Lasota, C., "Reactivity Estimation and Validation for the Control of Reactor Neutronic Power," June 1993 (Nuclear Engineering Department, co-supervised with J. Bernard).  
 Chapman, J.W., "Feedback Linearizing Generator Excitation Control for Enhanced Power System Stability," September 1993.  
 Allen, E.H., "Effects of Torsional Dynamics on Nonlinear Generator Control," February 1995.  
 LaWhite, N., "Vector Calculus of Periodic Non-Sinusoidal Signals for Decomposition of Power Components in Single and Multiphase Circuits," June 1995.  
 Zobian, A., "A Framework for Cost-based Pricing of Transmission and Ancillary Services in Competitive Electric Power Markets," June 1996.  
 Yu, C. N., "Real Power and Frequency Control of Large Electric Power Systems under Open Access," June 1996 (Mechanical Engineering Department).  
 Cordero, R., "Estimation of Transmission Losses in a Changing Electric Power Industry,"

June 1996.

Lecinq, B., "Peak-load Pricing for Transmission in a Deregulated Electric Utility Industry," June 1996 (Civil Engineering Department).

Bambenek, J., "Long term economically efficient transmission systems in a deregulated electric power industry," June 1996 (Nuclear Engineering Department, co-supervised with R. Lester).

Kuan, J., "Optimal Power Flow with Price-Elastic Demand," September 1996.

Yoon, T. Y., "Enhancements of Electric Power Systems Operation Using FACTS Devices," February 1997.

Lerner, P., "On the Value of Transmission Systems under Open Access: Incentives for Investment," June 1997.

Castillo, J., "How to Make Electric Power Markets Work: The Case of Central America," June 1997.

Macan, E., "Peak-Load Pricing for the IEEE Reliability Test System," June 1997.

Ziad, Y., "Deregulation of the Electric Power Industry: The Impact of Transmission on Market Imperfections," February 1998 (Civil Engineering Department).

Skantze, P., "Closed-loop Market Dynamics in a Deregulated Electric Power Industry," February 1998.

Shalafi, A., "Available Transmission Capability in Deregulated Electric Power Industry: A Critical Assessment," June 1998.

Visudhiphan, P., "A Dynamic Model of the Electricity Generation Market," September 1998.

Leotard, J.P., "Transmission Pricing and Incentives for Investments under Uncertainty in the Deregulated Industry", TPP (Civil Engineering), February 1999.

Prada, J., "Valuation of Operating Reserve in Power Systems", TPP (EECS), June 1999.

Chalermkraivuth, Charles, "Distributed Generation: The Strategies and Decision Criteria of Market Participants", TPP (ESD), February 2001.

Raikar, Santosh, "Interruptible Physical Transmission Contracts for Deregulated Electricity Market" TPP (ESD) June 2001.

Tsuchuda, Bruce, "Design of an Information Entity-The InfoCo-for the Electric Power Industry Under Restructuring", TPP (ESD) and EECS, June 2001.

Collison, Keneth, TPP (ESD), "A Practical Approach to Optimal Pricing and Implementation of Inter-regional Transactions in the Deregulated US Electricity Market", TPP (ESD), June 2001.

Gozum, Ozge Nadia, "Decision Tools for Transmission Service and Pricing: A Dynamic Programming Approach", EECS, June 2001 (Gullemin Prize Thesis Award for best EECS thesis).

Wagner, Michael, "Hedging Optimization Algorithms for Deregulated Electricity Markets", EECS June 2001.

Watz, Jill, "The Role of Government in Facilitating Customer Choice in the Electric Power Industry Under Restructuring", TPP (ESD), February 2002.

Sivakumar, Ashok, "Algorithms for Transmission Congestion Control Under Uncertainties", EECS, June 2002.

Prica, Marija, 2004

Minoia, Anna, 200?

**(c) Ph.D. Students (total 24)**

- Christensen, J., "Secondary Voltage Control Using Partial Information Structures," December 1987 (University of Illinois).
- Taylor, D., "Control of Nonlinear Systems with Application to Electrical Machines and Robotic Manipulators," December 1987 (University of Illinois).
- Crow, M.L., "Systems of Differential/Algebraic Equations with Applications to Power System Transient Stability Analysis," September 1989 (University of Illinois).
- Fong, M., "Modeling and Control of Slow Voltage Dynamics in Electric Power Systems," September 1989 (University of Illinois).
- Doerry, N.H., "Advanced Numerical Methods for Simulating Nonlinear Multirate Lumped Parameter Models," June 1991 (Ocean Engineering Department, co-supervised with J. Kirtley).
- Amy, J., "Composite System Stability Methods Applied to Advanced Shipboard Electric Power Systems," June 1992 (Ocean Engineering Department, co-supervised with J. Kirtley).
- Liu, X.S., "Structural Modeling And Hierarchical Control of Large-Scale Electric Power Systems," June 1994 (Mechanical Engineering Department).
- Eidson, B.D., "Estimation and Hierarchical Control of Market-driven Electric Power Systems," September 1995.
- Zobian, A., "A Framework for Pricing Transmission and Ancillary Services in Competitive Electric Power Markets," June 1996.
- Chapman, J., "Power System Control for Large-Signal Stability: Security, Robustness and Transient Energy," June 1996.
- Cardell, J., "Integrating Small Scale Distributed Generation into a Deregulated Market: Control Strategies and Price Feedback," September 1997 (so-supervised with R. Tabors, best thesis award) (TMP).
- Allen, E. H., "Stochastic Unit Commitment for a Deregulated Electric Power Industry," June 1998.
- Yu, C.N., "Direct Power Flow Control and Its Pricing in a Deregulated Electric Power Industry," August 1999 (Mechanical Engineering Department).
- Millis, K., "Distributed Measures of Solution Existence and Its Optimality in Stationary Electric Power Systems: Scattering Approach" August 1999.
- Yoon, Y. T., "Electric Power Network Economics: Designing Principles for a For-Profit Independent Transmission Company and Underlying Architectures for Reliability", June 2001, EECS.
- Skantze, P., "A Fundamental Approach to Valuation, Hedging and Speculation in Deregulated Electricity Markets", June 2001, EECS.
- Arce, Rafael Jose, "Transmission Reliability Assessment in a Competitive Electric Energy Industry", Doctor en Ingenieria Electrica, Universidad Nacional de San Juan, Argentina, February 2001 (coadvisor with F.F. Garces)
- Visudhiphan, Poonsaeng, "An Agent-Based Approach to Modeling Electricity Spot Markets", May 2003, EECS.
- Botterud, Audun, "Modeling and Analysis of Investment Dynamics in the Changing Electric Power Industry", NTNU Trondheim (co-advising), 2004.
- Black, Jason, "Technical and Regulatory Methods for Inducing Price Responsiveness in regulated Electricity Markets," 2005 (ESD/TMP).
- Traft, David (co-advising), 2005
- Zeriffi, Hisham (co-advising), 2005

Veselinovic, Aleksander (co-advising), 2006  
Zhyiong, (Richard) Wu (co-advising), 2006

### **Doctoral Theses, Reader (total 7)**

Brown, R., "Optimal Speed Control of Stepper Motors," December 1986 (University of Illinois).  
Behera, A., "New Techniques for Real Time Stability Studies in the Large Scale Power Systems," February 1988 (University of Illinois).  
Sanders, S., "Nonlinear Control of Switching Power Converters," February 1989.  
Chakravarthy, S., "Chaotic Oscillations in Electrical Power Systems," July 1995 (University of Technology Perth, Western Australia).  
Koncar, I., "Generation Dispatch with Independent Transmission Projects," (McGill University), 1998.  
Xie, Zhijun, "Design of China Electric Power Wholesale Market" (Boston University), December 1999.  
Kristiansen, Tarjei, PhD Thesis Committee, "Risk Management in Electricity Markets Emphasizing Congestion" (The Norwegian University of Science and Technology), May 2004.

### **EDUCATIONAL CONTRIBUTIONS**

Developed graduate level curriculum for the electric power systems at M.I.T., EECS Department.  
Developed three permanent courses in EECS, M.I.T. in the area of electric power systems.  
Significant contributions to theses supervision in the area of electric power systems at M.I.T. over the past 15 years.  
Served as an IEEE Distinguished Lecturer.  
Taught a new subject under course #18-879 at Carnegie Mellon University, "Special Topics in Systems and Control: Large-Scale Dynamic Systems Revisited. This course is to become a permanent ECE course, #18-777 in the Fall of 2004.  
Co-authored paper entitled, "Introducing Electric Power into a Multidisciplinary Curriculum for Network Industries," to be published in the IEEE Tran. On Power Systems, Special Issue on Education, May 2004. The relevance of this paper is that it defines a vision for the CMU INI/Master Program in this subject area. Preparations are underway to start this Program in the Fall of 2005.  
Committee work: Undergraduate Advising Committee (ECE), Graduate Committee (EPP), Ad Hoc Promotion Committee, at Carnegie Mellon University (2003-2004).

### **PUBLICATIONS**

#### **Books**

Yoon, Y. and Ilic, M., *Transmission Provision and Pricing in the Changing Electric Power Industry*, Kluwer Academic Publishers (to appear, March 2002).

Skantze, P. and Ilic, M., *Valuation, Hedging and Speculation in Competitive Electricity Markets: A Fundamental Approach*, Kluwer Academic Publishers, 2001.

Ilic, M.D. and J. Zaborszky, *Dynamics and Control of Large Electric Power Systems*, Wiley Interscience, May 2000 (900 pages).

Allen, E.H., Ilic, M., *Price-Based Commitment Decisions in the Electricity Market*, Springer-Verlag London Series on Advances in Industrial Control, November 1998.

Ilic, M., F. D. Galiana and L. Fink (eds.) *Electric Power Systems Restructuring: Engineering and Economics*, Kluwer Academic Publishers, 1998.

Ilic, M.D. and S.X. Liu, *Hierarchical Power Systems Control: Its Value in a Changing Electric Power Industry*, Springer-Verlag London Limited Series, Advances in Industrial Control, 1996.

### **Archival Papers Critically Reviewed Before Publication**

Ilic, M., "Multicriteria Approach to Optimal Operation of Power Systems," *Automatica*, May-June 1977 (Yugoslavian journal).

Ilic, M.D. and M. Calovic, "Multicriteria Approach to Optimal Operation of Power Systems," *Electric Power Systems Research*, 2, 145-153, 1979.

Ilic-Spong, M.D. and J. Zaborszky, "A Different Approach to Load Flow," *IEEE Transactions on Power Apparatus and Systems PAS-101*, 168-179, January 1982.

Zaborszky, J., M. Ilic-Spong, and K.W. Whang, "Homogeneous, Nonlinear Load-Flow Algorithms for HV-AC and Compound HV-AC-DC Systems," *International Journal on Electrical Power and Energy Systems* 4, 233-244, October 1982.

Ilic-Spong, M., Discussion of the paper, "A New Method for Computerized Solution of Power Flow Equations," by J.W. Bandler and M.A. El-Kady, *IEEE Transactions on Power Apparatus and Systems PAS-101*, 1-9, 1982.

Ilic-Spong, M., N. Katz, and J. Zaborszky, "Block Diagonal Dominance for Systems of Nonlinear Equations with Application to Load Flow Calculations in Power Systems," *International Journal on Mathematical Modeling* 5, 275-297, December 1984.

Ilic-Spong, M., M. Spong, and R. Fischl, "The No-gain Theorem and Localized Response for the Decoupled P--O Network with Active Power Losses Included," *IEEE Transactions on Circuits and Systems CAS-32*, 170-177, February 1985.

Thorp, J.S., M. Ilic-Spong, and M. Varghese, "An Optimal Secondary Voltage-Var Control Technique," *IFAC Automatica* 22 217-221, 1986.

Ilic-Spong, M., J. Thorp and M. Spong, "Localized Response Performance of the Decoupled Q-V Network," *IEEE Transactions on Circuits and Systems CAS-33*, 316-322, March 1986. **Notable paper:** This paper for the first time formulates the reactive power voltage problem as a nonlinear DC network problem and establishes conditions under which this network has monotonic response. The particular challenge comes from defining the regions where this property holds (the network has both positive and negative resistors, which requires tools beyond diagonal dominance



conditions). As in other electric networks, this property is extremely useful when making the localized response argument.

Thorp, J., M. Ilic-Spong, and D. Schulz, "Reactive Power - Voltage Problem: Conditions for the Existence of Solution and Localized Disturbance Propagation," *International Journal on Electrical Power and Energy Systems* 8, 66-74, April 1986.

Ilic-Spong, M. and A. Phadke, "Redistribution of Reactive Power Flow in Contingency Studies," *IEEE Transactions on Power Apparatus and Systems* PWRS-1, 266-275, August 1986.

Zaborszky, J., M. Ilic-Spong, G. Huang, and F. Dobraca, "Computer Control of the Large Power System During Faults for Inherently Adaptive Selective Protection," *IEEE Transactions on Power Apparatus and Systems* PWRS-2, 494-504, 1987.

Ilic-Spong, M., J.S. Thorp, T.J. Miller, and S. Mac Minn, "Instantaneous Torque Control of Electric Motor Drives," *IEEE Transactions on Power Electronics* PE-2, 55-61, January 1987.

Ilic-Spong, M., R. Marino, S.M. Peresada, and D.G. Taylor, "Feedback Linearizing Control of Switched Reluctance Motors," *IEEE Transactions on Automatic Control* AC-32, 371-379, May 1987.

Ilic, M. and J. Zaborszky, "Fundamentals of Reactive Power Modeling and Control," *IEEE Transactions on Power Systems*, special publication 87EH0262-6-PWR, 61-114, July 1987.

Medanic, J., M. Ilic-Spong, and J. Christensen, "Discrete Models of Slow Voltage Dynamics for Under Load Tap Changing Transformer Coordination," *IEEE Transactions on Power Apparatus and Systems* PWRS-2 873-882, November 1987. **Notable paper:** Often cited in the area of voltage collapse literature. The first to introduce slow control-driven voltage dynamics.

Ilic-Spong, M., M.L. Crow and M.A. Pai, "Transient Stability Simulation by Waveform Relaxation Methods," *IEEE Transactions on Power Apparatus and Systems*, PWRS-2, 943-952, November 1987.

Ilic-Spong, M., J. Christensen, and K.L. Eichorn, "Secondary Voltage Control Using Pilot Point Information," *IEEE Transactions on Power Systems* 3, 660-668, May 1988.

Sira-Ramirez, H. and M. Ilic, "A Geometric Approach to the Feedback Control Design for DC-DC Power Converters," *IEEE Transactions on Circuits and Systems* 35, 1291-1298, October 1988.

Ilic, M., "Energy Systems Control," *IEEE Control Systems Magazine*, Special Issue on Energy Systems Control, 3-4, January 1989.

Ilic, M., "New Approaches to Voltage Monitoring and Control," *IEEE Control Systems Magazine*, Special Issue on Energy Systems Control, 5-11, January 1989.

Sira-Ramirez, H. and M. Ilic, "Exact Linearization in Switched-Mode DC to DC Power Converters," *International Journal of Control* 50, 511-524, August 1989.

Crow, M.L. and M. Ilic, "The Parallel Implementation of the Waveform Relaxation Method for Transient Stability Simulations," IEEE Transactions on Power Systems 5, 922-932, 1990.

Ilic, M. and W. Stobart, "Development of a Smart Algorithm for Voltage Monitoring and Control," IEEE Transactions on Power Systems PWRS-5, 1183-1193, November 1990.

Ilic, M. and A. Stankovic, "Voltage Problems on Transmission Networks Subject to Unusual Power Flow Patterns," IEEE Transactions on Power Apparatus and Systems 6, 339-348, February 1991.

Stankovic, A., M. Ilic and D. Maratukulam, "Recent Results in Secondary Voltage Control of Power Systems," IEEE Transactions on Power Systems 6, 94-101, February 1991.

Tylavsky, D.J. and A. Bose, "Parallel Processing in Power Systems," (M.D. Ilic, co-contributor), IEEE Transactions on Power Systems, 7, 629-638, 1991.

Ilic, M.D., J.R. Lacalle-Melero, F. Nishimura, W. Schenler, D. Shirmohammadi, A. Crough, and A. Catelli, "Short-Term Economic Energy Management in a Competitive Utility Environment," IEEE Transactions on Power Systems, 8, 198-206, February 1993.

Mak, F.K. and M.D. Ilic, "Classification of Voltage Problems in Electric Power Systems," International Journal on Electrical Power and Energy Systems, 15, 377-385, April 1993.

Chapman, J.W., M.D. Ilic, C.A. King, et al., "Stabilizing a Multimachine Power System via Decentralized Feedback Linearizing Excitation Control," IEEE Transactions on Power Systems, PWRS-8, 830-839, August 1993. **Notable paper:** This paper introduces for the first time feedback linearizing control design for primary controllers of generators in a complex power system. An entirely decentralized implementation of this approach is developed; it is based on combining the idea of so-called Observation Decoupled State Space (ODSS) for regulating the set point value of the controller with the feedback linearizing design for primary control logic.

Nishimura, F., R.D. Tabors, M.D. Ilic, and J.R. Lacalle-Melero, "Benefit Optimization of Centralized and Decentralized Power Systems in a Multi-Utility Environment," IEEE Transactions on Power Systems PWRS-8, 830-839, August 1993.

Chedid, R., N. LaWhite and M.D. Ilic, "A Comparative Analysis of Dynamic Models for Performance Calculation of Grid-Connected Wind Turbine Generators," Wind Engineering, 17, 168-182, 1993.

Chedid, R., N. LaWhite and M.D. Ilic, "Simulating Dynamic Interactions of Grid-Linked Wind Turbines," IEEE Computer Applications in Power, 1994.

King, C.A., J.W. Chapman, and M.D. Ilic, "Feedback Linearizing Excitation Control on a Full-Scale Power System Model," IEEE Transactions on Power Systems, 9, 1102-1111, 1994.

Yehia, M., R. Chedid, M. Ilic, A. Zorian, R. Tabors and J. Lacalle-Melero, "Global Planning Methodology for Uncertain Environments: Application to the Lebanese Power System," IEEE Transactions on Power Systems, PWRS-10, 332-338, February 1995.

Ilic, M.D. and X.S. Liu, "A Modeling and Control Framework for Operating Large-Scale Electric Power Systems Under Present and Newly Evolving Competitive Industry Structures," Journal on Mathematical Problems in Engineering, 1, 317-340, October 1995. (invited)

Yehia, M., R. Chedid, Z. Jaber, M.D. Ilic and A. Zobian, "An Improved Dynamically Allocated Data Structure for Power System Problems," The International Journal of Modeling and Simulation, 61-65, 1997.

Ilic, M.D., S.X. Liu, G. Leung, C. Vialas and M. Athans, "Improved Secondary and Tertiary Voltage Control," IEEE Transactions on Power Systems, 10, 1851-1862, November 1995. **Notable paper:** This paper illustrates the relevance of structure-based modeling for large power networks. The results are demonstrated on the French power system and considered as a possible concept for the next stage National Control Center in Paris, France.

Ilic, M.D., "Fundamental Engineering Problems and Opportunities in Operating Power Transmission Grids of the Future," International Journal on Electrical Power Energy Systems, 17, 207-214, 1995. (Special Issue)

Ilic, M.D., Editorial in *ibid*, 1-2.

Allen, E.H., J.W. Chapman and M.D. Ilic, "Effects of Torsional Dynamics on Nonlinear Generator Control," IEEE Transactions on Control Systems Technology, 4, 125-140, March 1996. **Notable paper:** This paper for the first time provides a control design for stabilizing a long standing problem of sub-synchronous resonance in operating electric power grid interconnected via long transmission lines. The paper is an important application of feedback linearizing control.

Ilic, M.D., F.C. Graves, L.H. Fink and A. DiCaprio, "A Framework for Operations in Competitive Open Access Environment," The Electricity Journal, Special Issue on Restructuring of the Utility Industry, 9 61-69, April 1996.

Zobian, A. and M.D. Ilic, "A Steady-State Voltage Monitoring and Control Algorithm Using Localized Least Squares Minimization of Load Voltage Deviation," IEEE Transactions on Power Systems, 11, 929-938, May 1996.

Ilic, M., "A Summer of Shortage," Public Utilities Fortnightly, July 1996.

Ilic, M. and L. Hyman, "Getting it Right the First Time: The Value of Transmission and High Technologies," The Electricity Journal, 9, 8-17, November 1996.

Ilic, M., S.X. Liu, B.D. Eidson, C. Vialas, and M. Athans, "A New Structure-Based Approach to the Modeling and Control of Electric Power Systems in Response to Slow Reactive Power/Voltage Load Variations," IFAC Automatica, 33, 515-531, March 1997. **Notable paper:** This paper reports the new concept of tertiary coordinating scheme for regional voltage regulation and improved secondary voltage control in complex power systems. Depending on the objectives of the control design, the secondary control can be made to eliminate inter-regional interactions, or more interactions are allowed and optimized for systemwide performance of the interconnection.

LaWhite, N. and M.D. Ilic, "Vector Space Decomposition of Reactive Power for Periodic Nonsinusoidal Signals," IEEE Transactions on Circuits and Systems, Part I, Fundamental Theory and Applications, 44, 338-346, April 1997. **Notable paper:** This paper considers fundamentals of reactive power in non-sinusoidal signals.

Zobian, A. and M. D. Ilic, "Unbundling of Transmission and Ancillary Services Part I: Technical Issues," IEEE Transactions on Power Systems, 12, 539-548, May 1997.

Zobian, A. and M.D. Ilic, "Unbundling of Transmission and Ancillary Services Part II: Cost-Based Pricing Framework," IEEE Transactions on Power Systems, 12, 549-558, May 1997.

Ilic, M.D., Y.T. Yoon and A. Zobian, "Available Transmission Capacity and Its Value Under Open Access," IEEE Transactions on Power Systems, 12, 636-645, May 1997.

Fink, L., M. Ilic and F.D. Galiana, "Transmission Access Rights and Tariffs," Electric Power Systems Research, 43, 197-206, June 1997.

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April 1989, "Review of the Development on Voltage Monitoring and Control," New England Electric System, Westboro, MA.

September 1989, "Operational Issues in Power Systems in 2000 and Beyond," NSF Workshop, Atlanta, GA.

September 1989, "New Approaches to Voltage/Reactive Power Control in Electric Power Systems," University of Tennessee, Knoxville, TN.

October 1989, "Research Needs in Power Systems Dynamics and Control: Academic Perspective," MIT Workshop on Research Needs in Electric Power Systems, Cambridge, MA.

October 1989, "Voltage Problems: The New Operating Mode in Power Systems," MIT Workshop on Research Needs in Electric Power Systems, Cambridge, MA.

December 1989, "Advanced Controls in Electric Power Systems," New York Power Pool, Albany, NY.

December 1989, "New Controls for Electric Power Systems," General Electric Industry and Utility Sales, Schenectady, NY.

January 1990, "Potential Scenarios for Supercomputer Applications in Operating Electric Power Systems," Empire State Electric Energy Research Co., Albany, NY.

February 1990, "An Overview of the State-of-the-Art in Voltage Dynamics," North American Reliability Council, Atlanta, GA.

March 1990, "Needs for Future Research in Voltage Dynamics," American Electric Power Co., Columbus, OH.

April 1990, "Voltage Problem as a New Operating Mode in Electric Power Systems," North Carolina State University, Department of Electrical and Computer Engineering, Raleigh, NC.

November 1990, "Voltage Monitoring and Control of Electric Power Systems," MIT Workshop II on Power Systems, Cambridge, MA.

December 1990, "Global Research Agenda for Electric Power Systems at MIT," MIT Planning Workshop, Cambridge, MA.

June 1991, "Voltage Problems and Their Controls," Tokyo Electric Power Co., Tokyo, Japan.

June 1991, "MIT Research in the Area of Power Systems Monitoring and Controls," Kansai Electric Power Co., Osaka, Japan.

June 1991, "MIT Method for Steady State Voltage Monitoring and Corrective Actions," Taiwan Power Co., Taiwan; also Korean Electric Power Co., Seoul, Korea, June 1991.

June 1991, "Voltage Dynamics and Control," Seoul National University, Department of Electrical Engineering, Seoul, Korea.

November 1991, "Power Systems Monitoring and Control Research at MIT," MIT Workshop III, Cambridge, MA.

October 1992, "The Future of Energy Transmission in the US Electric Power: Switching to Semiconductors," MIT EECS Colloquium, Cambridge, MA.

November 1992, "The Impact of Advanced Technologies on Real Time Control of Power Systems," US Department of Energy Workshop, Denver, CO.

January 1993, "Planning and Operating Problems in the Newly Evolving Environment of the Electric Power Systems," MIT Planning Workshop, Cambridge, MA.

October 1994, "Optimal Strategies for Changing Power Industry," MIT/EUP Workshop on Transmission Distribution Operational Strategies for a Restructured Electric Industry, Cambridge, MA.

October 1994, "A Brief Survey of Present System-Wide Functions and Their Role in the Distributed Energy Market-- Limits to Distribution," MIT/EUP Workshop on Transmission Distribution Operational Strategies for a Restructured Electric Industry, Cambridge, MA.

November 1994, "A Unified Approach to Real-Time Controls, Accounting and Supporting Policies for Effective Energy Management under Competition," New York Power Pool, Albany, NY.

December 1994, "Fundamental Problems and Opportunities in Operating Transmission Grid of the Future," University of Maryland Institute for Systems Research, College Park, MD.

December 1994, "Systems Engineering Design," University of Maryland, College Park, MD.

December 1994, "Alternate Operational Strategies for Electric Utility Restructuring," Connecticut Energy Advisory Board, Hartford, CT.

February 1995, "A Unified Approach to Dynamic Pricing Under Open Access," University of California, Berkeley, CA.

June 1995, "Power Pooling for Transmission and Ancillary Services: Balancing Efficiency and Comparability," Beaver Creek, CO.

July 1995, "A Unified Approach to Real-Time Controls, Accounting and Supporting Policies for Effective Energy Management under Competition," IEEE Task Force on Controls in the 21st Century," Portland, OR.

July 1995, "AGC in Competitive Environment," Workshop on Resource Scheduling and Generation Control, Hilton Head, NC.

September 1995, "Trends in Activity-Based Costing," MIT Workshop on Corporate Planning and Technology Management for a Competitive Electric Industry Environment, Cambridge, MA.

September 1995, "R&D Perspective on Pricing Methodologies," ABB Power T D Company, Inc., Transmission Technology Institute, Raleigh, NC.

September 1995, "Role of an ISO in Supporting a Competitive Power Market Based on Bilateral Scheduling" (with Frank Graves), Workshop on Restructuring Electric Transmission, Beaver Creek, CO.

October 1995, "A Unified Approach to Real-Time Controls and Accounting for Effective Energy Management under Competition," MIT, Cambridge, MA.

October 1995, "A Framework for Operations in Competitive Open Access Environment," MIT, Cambridge, MA.

October 1995, "New Models for Representing Technical and Economic Processes of Energy Management Under Competition," INFORMS'95, New Orleans, LA.

January 1996, "A New Framework for Operations Planning under Open Access," Electricite de France, Paris, France.

January 1996, "Open Problems in Using Flexible AC Transmission System (FACTS) Technologies" Electricite de France, Paris, France.

January 1996, "Engineering vs. Market-based Pricing for the Interconnected Operating Services," Electric Utility Planning meeting, Cambridge, MA.

February 1996, "A Possible Framework for Operations Planning in a Changing Industry: Coordination vs. Competition," American Electric Power Co., Columbus, OH.

June 1996, "Deregulation in the Northeast of the United States," Energy Modeling Forum Stanford University Working Group 15, Washington, DC.

July 1996, "Flexible Planning for Power Transmission in a Competitive Industry," MIT, Cambridge, MA.

August 1996, "Transmission Capacity in Electric Power Networks," 12th Power Systems Computation Conference, Dresden, Germany.

August 1996, "Peak Load Pricing for Transmission," Edison Electric Institute, Washington, DC.

September 1996, "Getting it Right the First Time: Value of Transmission and High Technology," Transmission Pricing Conference, Denver, CO.

October 1996, "A Framework for Operations in Competitive Electric Power Industry," Cornell University, Ithaca, NY.

November 1996, "A Unified Approach to Real-Time Operations, Planning and Accounting Under Open Access," US Department of Energy, Washington, DC.

December 1996, "Hierarchical Control Structure and Voltage Control in FACTS Controlled Electric Power Systems," The Korean Electric Power Research Institute, Taejong, South Korea.

March 1997, "Power Systems Under Competition," University of Connecticut, Storrs, CT.

April 1997, "The Impact of Transmission Constraints on the Electricity Market," IEEE Mid-Hudson Section, Poughkeepsie, NY.

April 1997, "Transmission Provision at Times of Scarcity: An ISO Cannot Do it All," Center for Energy and Environmental Policy Research, Cambridge, MA.

June 1997, "Long-Term Investment Issues," International Business Communications, Washington, DC.

June 1997, "Public Comments to the Task Force on Electric System Reliability," Secretary of Energy Advisory Board, Washington, DC.

July 1997, "Vital Issues Panel," Sandia National Laboratory, Washington, DC.

October 1997, "Transmission Pricing in New England," Stanford Energy Modeling Forum, Stanford, CA.

April 1998, "Control Markets for Deregulated Electric Power Industry," Federal Energy Regulatory Commission, Washington, DC.

May 1998, "Transmission Constraints and Market Power," Stanford Energy Modeling Forum, Washington DC.

October 1998, "Measuring Power System Performance in the New Industry", PostISO Implementation Conference, Sacramento, California.

November 1998, "Electric Power Industry Restructuring: Engineering and Economics", IEEE Distinguished Lecture, Orlando IEEE Chapter.

January 1999, "Critical Factors for Forming a Transmission Company", Alliance Transmission Owners, Washington DC, American Electric Power Headquarters.

January 1999, "Power Markets: Lessons for Internet", Internet Telephony Consortium Workshop, MIT, Cambridge.

February 1999, "On the objectives of transmission pricing", IEEE Panel, Winter Power Meeting, New York.

July 1999, "Measures for Comparing Performance of Regulated and Deregulated Electric Power Industries", Mini Symposium "Modeling and Computational Challenges in Deregulated Electricity Markets", 4th Conference on Industrial and Applied Mathematics, Edinburgh, Scotland.

March 1999, "Some Obstacles to Moving Forward with Successful Deregulation of the Electric Power Industry", Federal Energy Regulatory Commission, Washington, D.C.

April 1999, "Research Challenges in Electric Power Systems", NSF Workshop on Innovations in Power Engineering Education and Research, National Science Foundation, Washington, DC.

June 1999, "Electric Power Restructuring in the United States", IEEE Distinguished Lecture, French Chapter, Paris, France.

July 1999, "On-line Voltage Regulation in New England", IEEE Panel, Edmonton, Alberta, Canada.

October 1999, "Strategic Directions in R&D to meet Future Demand; Setting R&D Priorities", Ontario Electricity Technology Forum: The New Reality, Toronto, Canada.

December 1999, "On Underlying Principles for Designing Standards in the New Electric Power Industry", NIST (National Institute of Standards Technology) Sponsored Workshop on "Challenges for Measurements and Standards in a Deregulated Electric Power Industry", Arlington, VA.

March 2000, The Role of IT in Competitive Electric Power Systems, MIT, Mechanical Engineering Department Series.

April 2000, "The Role of IT in the Electric Power Industry", Chicago, IL.

August 2000, "Integrating Electricity Markets for Wide Area Open Access", Workshop on Markets for Electricity, Economics and Technology (MEET): A Flow-based Paradigms for Systems Operation and Market Coordination", Stanford University, Palo Alto, CA.

September 2000, "Incentives for Transmission Investments: A Proposal for a New England Regional Transmission Organization", Orlando, FL, IEEE Distinguished Lecture.

November 2000, A Strategic Systems for Electric Energy Technologies, NSF/DOE/EPRI Sponsored Workshop on Future Research Directions for Complex Interactive Electric Networks, Washington, D.C.

December 2000, ``The Role of Information Technology in the Electric Power Industry'', PowerCon2000, Perth, Australia (Plenary talk).

April 2001, Electric Power Networks and Data Networks: How Common are the Underlying Problems? EPRI/DOD Meeting, George Washington University, Washington, D.C.

June 2001, Change of Paradigms in Complexity and Interdependencies of Infrastructures, OSTP/NSF Meeting, White House, Washington, D.C.

June 2001, Decision Tools for Electric Transmission Service and Pricing: A Dynamic Programming Approach, EPRI/DOD Interactive Complex Networks Workshop, Washington, D.C.

September 2001, A Possible Transmission Market Design and Performance-Based Tariffs for Prudent Transmission Investments, Electric Power Market Performance Conference, Denver, CO.

September 2001, Valuing Transmission Service: Product Definition, Market Design and Software, Electricity Transmission Meeting, IIR, Arlington, VA.

October 2001, Protocols and Software for the Changing Electric Power Industry: Tradeoffs between T&D and DG, Alstom/MIT Meeting, Cambridge, MA.

November 2001, The Electricity Provision in the Changing Industry, WPI ECE Department Talk Series, Worcester, MA.

November 2001, T&D Technologies—Systems Integration Opportunities and Challenges, Carnegie Mellon Workshop on Electricity Security and Survivability, Pittsburgh, PA.

November 2001, Model-Based Protocols for the Changing Electric Power Industry, EPP Department Talk, Carnegie Mellon University, Pittsburgh, PA.

December 2001, Model-Based Protocols for the Changing Electric Power Industry, MIT LIDS Series Talk, Cambridge, MA.

January 2002, “A Proposal for an Inter-Regional Transmission Organization (IRTO),” IEEE Panel, New York City, NY.

Transmission Reliability Revisited: Provision and Pricing in the Evolving Electric Power Markets, EPRI/EMF Meeting, Palo Alto, CA, January 16, 2003.

February 2002, Panel on Electricity Restructuring, AAAS Meeting, Boston, MA.

Making Electric Power Systems both secure and Efficient: Protocols for Dynamic Energy Control (PDEC), CMU/EPP Seminar, February 3, 2003



Research on Complex Electric Power Networks, GAO presentation, CMU/ECE Meeting, April 12, 2003.

Transformation of Electricity Markets: Value based transmission provision under open access , EPRI Research Advisory Committee (RAC) Meeting, EPP/CMU, April 24, 2003.

Risk Management, Liquidity and the Value of Information Technology, North East Power Conference, Boston, MA, June 25, 2003.

Preventing Blackouts in the Changing Electric Power Industry, ECE/CMU Seminar, Carnegie Mellon University, September 11, 2003.

Institutional and technological architectures for distributed power systems of the future , U.S. Department of Energy, and National Renewable Energy Laboratory, Next Generation Distribution System Visioning Workshop, October 9, 2003 Chicago, IL (invited)

Dynamic Transmission Provision and Pricing for Electric Power Systems, EPNES NSF Workshop, Orlando, FL, October 24, 2003.

Large-Scale Dynamic Network Systems Revisited: The Case of Electric Power Systems, NSF Workshop on Applied Math, Arlington VA, November 2-3, 2003 (invited)

An Agent-based Approach to Modeling Electricity Spot Markets, IMA Workshop, MN, November 3-6, 2003 (invited-with Dr Poonsaeng Visudhiphan)

A Systematic IT Architecture for Efficient Electric Power Industry Under Restructuring: The Missing Mechanism, Its Implications and Possible Design, Keynote Presentation APSCOM'03, Hong Kong, November 12, 2003

Reliability in the Changing Industry, APSCOM'03 Tutorial (1 entire day), Hong Kong, November 12, 2003.

Potential Implications of Making the Electric Power Network Secure/Reliable on Energy Use, MIT Energy Industry Symposium, Cambridge, MA, December 3, 2003 (invited).

A Multi-Layered Approach to Transmission Provision and Pricing in the Electric Power Networks, Institute for Mathematics and Applications (IMA), Univ. of Minnesota, Workshop on Control and Pricing in Communication and Power Networks, March 8-13, 2004 (invited).

## **GOVERNMENT COMMITTEES, CIVIC APPOINTMENTS, BOARD MEMBERSHIPS**

IEEE-USA Technical Policy Committee Member	May 2000-present
Technical Advisory Committee, California Energy Commission, on Distributed Energy Resources Project	2003
Organizing Committee NSF Workshop "Responding to the Unexpected," New York City	Feb 27-Mar 1, 2002
Co-Initiator, OSTP/NSF Workshop on "Long-Term R&D Needs for Critical	

Infrastructures and their Interdependencies," White House, Washington, DC	Jun 14-15, 2001
<b>Program Director, National Science Foundation, (50% time)</b>	<b>Sep 1999-Mar. 2001</b>
Organizer, NSF/DOE/EPRI Sponsored Workshop on "Future Research Directions for Complex Interactive Electric Networks," Washington, DC	Nov 16-17, 2000
National Science Foundation Expert for Power Systems Program	1999
Mass House Committee on Science and Technology Panel on Y2K utility readiness	1999

## **MEMBERSHIP AND ACTIVITIES IN HONORARY FRATERNITIES, PROFESSIONAL SOCIETIES**

### **IEEE Fellow**

Associate member of the CEEPR Center for Energy and Environmental Policy Research,  
Massachusetts Institute of Technology  
Invited member of the Energy Modeling Forum Working Group  
on "A Competitive Electricity Industry," Stanford University.  
Working Group on Controls in the 21st Century  
Working Group on Open Transmission Access  
Systems Control Subcommittee  
Working Group on Flexible AC Transmission Systems  
Power Engineering Society  
Chair, Energy Technical Committee (1988-1991)  
Control Systems Society Vice-Chair, Energy Technical Committee (1986-1988)  
Vice Chair, IEEE Central Illinois Section (1986-1987)

## **EDITORIAL ROLES ON PUBLICATIONS, MAJOR ACTIVITIES IN PROFESSIONAL MEETINGS**

Electric Utility Deregulation, Restructuring and Power Technologies, Hong Kong, April 5-8, 2004  
– International Advisory Board  
Encyclopedia of Energy, Academic Press, Inc. – Associate Editor, 2003  
IEEE-USA Technical Committee on Energy Policy, 2003  
Int. Journal of Electrical Power & Energy Systems – Associate Editor, 2003  
**IEEE Distinguished Lecturer for Power Systems 1997—present**  
Associate Editor, Encyclopedia on Energy. Academic Press, 2002.  
IEEE Panel on Value and Cost of Reactive Power Control,  
Organizer and Chair August 1999  
Journal on Discrete Event Dynamic Systems November 1999  
Chairman, IEEE WG on Voltage Control  
Guest Editor 1998 present  
Guest Editor, Special Issue on Power Systems, Sept. 1998  
Annual North American Power Symposium

Stanford Energy Modeling Forum Working Group 15      1995   present  
     Organizing Committee, 1996  
 Program Committee, International Conference on Power System   1997  
     Automation and Control 1997  
 Program Committee, IASTED Conference on High Technology in the Power Industry   1997  
 Program Committee, Power Systems Computer Conference 1996  
 Program Committee, IEEE Conference on Control Applications   1995  
 International Journal on Energy Systems  
     Associate Editor, IEEE Transactions, Circuits and Systems   1993   1995  
 Guest Editor, Special Issue on FACTS,  
     March 1995  
 Task Force on Voltage Problems  
 U.S. Representative, CIGRE (Conference Internationale des Grands Reseaux Electriques a Haute  
     Tension): 1992   1996  
 Workshop Organizer, International Symposium      May 1992  
 IEEE Conference on Decision and Control on Circuits and Systems  
 Technical Program Committee,      1992  
 Co-Chair, IEEE China Power Conference      Sept. 1991  
 Control of Power Conversions Systems  
 Program Committee, Workshop on Variable Structure      June 1991  
 IEEE American Control Conference  
     Associate Editor, International Journal on Electric Power Energy Systems   1989   present  
 Special Issue on Energy Systems  
     Program Chair, 1989  
 Guest Editor, IEEE Control Systems Magazine,      June 1988  
 IEEE American Control Conference  
     Publications Chair, IEEE Conference on Decision Control      1988  
 IEEE Transactions on Circuits and Systems  
     Technical Program Committee and Vice Chair, 1988  
 Associate Editor for Large Scale Systems Networks,      1987   1989  
 Technical Program Committee, IEEE Conference on Decision Control      1986

## **AWARDS, PRIZES, HONORS**

Who's Who of American Women, 2004-2005  
 IEEE Fellow 1999  
 IEEE Distinguished Lecturer for Power Systems   1997—present  
 Best PhD Thesis Advisor Award, MIT Technology Policy Program      1998  
 Best student paper award (advisor/co-author), 34th IEEE Conference on Decision and Control,  
     New Orleans, LA, 1995  
 University Scholar Award, University of Illinois 1987  
 Xerox Faculty Award, College of Engineering, University of Illinois, 1986

Best paper award (Control Area) IEEE Power Electronics Systems Conference, Toulouse, France, 1985

Presidential Young Investigator Award, 1984-1989

XXI Yugoslavian Conference on Electronics, Telecommunications and Automation

Dr. V. Bedjanic Award for outstanding results published in the Master of Electrical Engineering Degree Thesis, Yugoslavia, 1978

Dr. Dusan Mitrovic Award for best paper in the Automation Group, 1978

City of Belgrade, Yugoslavia award for special achievements in scholastic work, 1974