

Nurhidajat Sisworahardjo

CONTACT INFORMATION

College of Engineering and Computer Science
University of Tennessee Chattanooga
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RESEARCH INTERESTS

Smart grid, distributed generation, renewable/alternative energy, power systems, optimization, simulation, data analytics, and planning.

EDUCATION

The University of Alabama, Tuscaloosa, Alabama, U.S.A.

Doctor of Philosophy, Electrical Engineering

August 2005

- Dissertation: “Least-Squares Polynomial Quasi-Monte Carlo Simulation for Short-Term Power Generation Asset Valuation in a Deregulated Market”
- Advisor: Professor A. A. El-Keib

Illinois Institute of Technology, Chicago, Illinois, U.S.A.

Master of Science, Electrical Engineering

December 1998

Institute of Technology Bandung, Bandung, Indonesia

Bachelor of Science, Electrical Engineering

September 1991

RESEARCH EXPERIENCE

The University of Tennessee at Chattanooga, Chattanooga, Tennessee
Electrical Engineering Department

Assistant Professor

August 2010 - present

N. Sisworahardjo (Primary Mentor), “Data Visualization for 911 Calls,” \$13,000, agency: UraCE Summer Fellows in Summer Fellowship in Smart Cities and Urban System, UTC, summer 2018.

- Mentored three undergraduate students from different majors to perform data analytics on 911 calls and demographic data.
- Generated data visualization of relevant demographics related to certain 911 incidents.
- Generated data visualization of areas with upcoming hotspots of different incidents.
- Developed ANN to predict the locations of violent or property crimes on a daily basis.
- Identified key inputs for determining trends in certain crime types.

N. Sisworahardjo (Senior Personnel), “REU Site: An Interdisciplinary CubeSat Research and STEM Education Platform at the University of Tennessee at Chattanooga (UTChattSat),” \$ 322,155, agency: National Science Foundation (NSF), 2018 - 2021.

- Supervises undergraduate research scholars and guides them in completing their projects from the start to the end.

N. Sisworahardjo (Senior Personnel), “UTC ASSETS: Academic Intervention, Social Supports, and Scholarships for Engineering Transfer Students,” \$ 992,996, agency: National Science Foundation (NSF), 2018 - 2023.

- Provides academic coaching, assist with scheduling, and connect students to workforce development opportunities and peer tutoring sessions.

Principal Investigator (PI): “Near Real-time Detection of Anomalous Power Consumption in Smart Power Distribution Networks,” \$96,477.00, agency: THEC Center for Excellence in Applied Computational Science & Engineering, duration: July 2016 - June 2017.

- Developed the algorithm to extract the context information from the smart meter readings and combines other contextual variables using correlation factor to better identify anomalous electrical energy consumption behavior in residential houses.

Principal Investigator (PI): “Post-Disturbance Automatic Electric Distribution Network Reconfiguration,” \$10,000.00, agency: UTC Collaborative Research Initiative for Sponsored Programs (CRISP), duration: July 2012 - June 2013.

- Investigated the effectiveness of “smart device” technology in electrical distribution network through reliability indices.
- Identified techniques and methodologies of automatic electric distribution network reconfiguration.

Participated in the funded research project: “Workforce Training for the Electric Power Sector,” \$2,663,860, agency: DoE, duration: May 2010 - April 2013.

- Actively involved in the development of UTC smart grid, power electronics, linear control and drives, and power simulation laboratories.
- Actively participated in students recruitment who pursue the career in power and energy related fields through scholarship.
- Developed course series for Post-Baccalaureate Certificate programs in Sustainable Electric Energy.
- Actively participated on restructuring undergraduate and graduate curriculums.
- Actively involved in organizing Smart Grid workshop series and seminars.

**The university of South Alabama, Mobile, Alabama
Electrical and Computer Engineering Department**

Research Associate

August 2005 - July 2010

Participated in funded research projects:

- “High Peak Power Plasmoid Thruster for Space Propulsion Applications,” \$1,537,963, agency: NASA, duration: September 2006 - August 2009.
- “Smart Energy Management and Control of Fuel Cell Powered Applications,” \$954,621, agency: DoE, duration: August 2005 - May 2007.
- “Smart Energy Management and Control System for Fuel Cell Operated Microgrid Connected Neighborhoods,” \$490,539, agency: DoE, duration: September 2004 - March 2006.

Research activities:

- Developed high-efficiency electrical power conditioning, which includes model simulation, prototype, and characterization.
- Evaluated system reliability of low power direct methanol fuel cell (DMFC).
- Developed proton exchange membrane (PEM) fuel cell model, investigate dynamic characteristic during stand alone and parallel operations, and dynamic characteristics evaluation of low power portable fuel cell.

Participated actively in the preparation of the NASA proposal:

- High Peak Power Plasmoid Thruster for Space Propulsion Applications.

The University of Alabama, Tuscaloosa, Alabama
Electrical and Computer Engineering Department

Graduate Research Assistant

August 2002 - July 2005

Conducted various research activities:

- Short-term generating unit asset valuation:
 Developed a new approach based on a least-squares polynomial and using the quasi-Monte Carlo method to achieve much faster than the standard Monte Carlo-based approach without compromising accuracy.
- Electricity price process:
 Developed a finance-structural integrated model of electricity price process with better modeling for price jumps/spikes processes and incorporating multi-seasonality.
- Short-term load forecasting:
 Developed an effective short-term load forecasting model using non-linear regression and time series (ARIMA) model.
- Application of modern optimization techniques in power systems:
 Developed a Fuzzy Ant Colony-based unit commitment algorithm to solve unit commitment problem with demand, production cost, and reserve uncertainties.

Participated actively in the preparation of the following NSF proposals:

- Short- and Long-Term Generation Asset Valuation in a Deregulated Market.
- Collaborative Research: A Risk Assessment Framework for the Short- and Long-Term Operation of a Power Generation Company in a Deregulated Market.

Illinois Institute of Technology, Chicago, Illinois
Electrical and Computer Engineering Department

Graduate Research Assistant

January 1997 - December 1998

Participated actively in research on computer modeling and simulation of Intelligent Agents for Power Electronics Building Blocks (PEBB).

Institute of Technology Bandung, Bandung, Indonesia
Research Center

Junior Researcher

November 1991 - December 1996

Participated actively in the following research projects:

- Development of a spatial and consumer type-based electric load forecasting model for Indonesia State Electric Power Utility (PT. PLN - Indonesia).
- Development of a Geographical Information System (GIS) framework for Indonesia State Electric Power Utility (PT. PLN - Indonesia).
- Investigation and development of a power distribution planning master plan for Indonesia State Electric Power Utility (PT. PLN - Indonesia).
- Investigation of the effect of electric and magnetic fields from EHV/HV transmission lines on the physical health of humans. A collaborative research with the School of Medicine, University of Indonesia.
- Development of a digitalized map for a distribution network, Indonesia State Electric Power Utility (PT. PLN - Indonesia).

GRANT
ACTIVITIES

- Investigation of the Java-Bali power systems expansion planning.
- N. Sisworahardjo (PI), M. Onyango (Co-PI), D. Wu (Co-PI), C. Ward (Co-PI), “Extending the Use of 911 Calls,” \$98,925.00, agency: THEC Center for Excellence in Applied Computational Science & Engineering, duration: July 2019 - June 2020. (Pending)
- N. Sisworahardjo, “2018 NSF Smart and Connected Communities (S&CC) Aspiring PI Workshop,” \$1,000 travel grant, agency: National Science Foundation (NSF), Kansas City, MO, 2018.
- N. Sisworahardjo and M. Onyango, “Data Visualization for 911 Calls,” \$13,000, agency: UraCE Summer Fellows in Summer Fellowship in Smart Cities and Urban System, UTC, summer 2018.
- D. Loveless (PI), D. Reising (Co-PI), N. Sisworahardjo, R. Ahmed, L. Elliott, A. McLean, “REU Site: An Interdisciplinary CubeSat Research and STEM Education Platform at the University of Tennessee at Chattanooga (UTChattSat),” \$ 322,155, agency: National Science Foundation (NSF), 2018 - 2021.
- I. Fomunung (PI), N. Alp (Co-PI), B. Harris, Y. Kajita, G. McDonald, N. Sisworahardjo, T. Elliott, R. Ahmed, W. Wu, C. Margraves, M. Porter, “UTC ASSETS: Academic Intervention, Social Supports, and Scholarships for Engineering Transfer Students,” \$ 992,996, agency: National Science Foundation (NSF), 2018 - 2023.
- J. Kizza (PI), F. Kandah, H. Qin, M. Sartipi, D. Wu, L. Yang, A. Ofoli, N. Sisworahardjo, N. Alp, K. Adsit, and J. Ellis, “RET Site in Computer Science and Engineering: Cybersecurity Education for All – Developing a Broad-based Cyber Defense Workforce for the 21st Century,” \$595,267, agency: National Science Foundation (NSF), 2017. (Not funded)
- N. Sisworahardjo (PI), A. Arabshahi (Co-PI), K. Sreenivas (Co-PI), “Near Real-time Detection of Anomalous Power Consumption in Smart Power Distribution Networks,” \$96,477.00, agency: THEC Center for Excellence in Applied Computational Science & Engineering, duration: July 2016 - June 2017.
- N. Sisworahardjo (PI), A. Ofoli (Co-PI), Bob Hay (Co-PI), “Post-Disturbance Automatic Electric Distribution Network Reconfiguration,” \$10,000.00, agency: UTC Collaborative Research Initiative for Sponsored Programs (CRISP), duration: July 2012 - June 2013.
- A. Eltom (PI), E. McMahon (Co-PI), S. Craven (Co-PI), N. Sisworahardjo (Key Personnel), A. Ofoli (Key Personnel), “Workforce Training for the Electric Power Sector,” \$2,663,860, agency: Department of Energy, duration: May 2010 - April 2013.
- N. Sisworahardjo (PI), Donald Reising (Co-PI), “Smart Distribution Systems State Estimation through Data Analytics,” \$97,662.00, agency: THEC Center for Excellence in Applied Computational Science & Engineering, 2017. (Not funded)
- N. Alp (PI), N. Sisworahardjo (Co-PI), L. Yang (Co-PI), E. Wang (Co-PI), M. Onyango (Co-PI), “EXCEL: EXploring Clean Energy through hands-on Learning,” \$ 1,192,081, agency: National Science Foundation (NSF), 2016. (Not funded)

- M. Onyango (PI), J. Ellis (Co-PI), J. Kizza (Co-PI), N. Sisworahardjo (Co-PI), A. McLean (Co-PI), “Securing the Pipeline for Undergraduate Engineering Education (SPUE) Using Data Analytics,” \$249,935, agency: National Science Foundation (NSF), 2015. (Not funded)
- N. Sisworahardjo, “Data visualization and Sequence of Event,” agency: GIGTANK 2014 Smart Grid Accelerator, 2014. (Not funded)
- M. Sartipi (PI), L. Yang (Co-PI), F. Kandah (Co-PI), N. Sisworahardjo (Co-PI), “CyberSEES: Type 2: Learning from an operational smart grid,” \$378,924.00, agency: National Science Foundation, 2013. (Not funded)
- R. Yaqub (PI), H. Bernard (Co-PI), T. Thomas (Co-PI), N. Sisworahardjo (Co-PI), “Physics and Chemistry of Energy Including Environmental and Vocational Aspect,” \$150,733.00, agency: STEM Professional Development Grant Program (STEM-THEC), 2012. (Not funded)

ACADEMIC
EXPERIENCE

**The University of Tennessee at Chattanooga, Chattanooga, Tennessee
Electrical Engineering Department**

Associate Professor

August 2017 - present

- Lead faculty within College of Engineering and Computer Science (CECS) to promote standardized course assessment.
- Lead faculty for ongoing effort within College of Engineering and Computer Science (CECS) and EE Department for ABET self-study report and collects its supporting documentation.
- Lead faculty for ongoing effort within College of Engineering and Computer Science (CECS) and EE Department for SACS-COC accreditation.
- Instructor of several courses for undergraduate and graduate levels.

Assistant Professor

August 2010 – July 2017

- Lead faculty for ongoing effort within College of Engineering and Computer Science (CECS) and EE Department for ABET self-study report and collects its supporting documentation.
- Lead faculty for ongoing effort within College of Engineering and Computer Science (CECS) and EE Department for SACS-COC accreditation.
- Develop course(s) in the area of alternative/renewable energy for Senior and Graduate levels.
- Effectively utilize UTC Learn and successfully incorporate semi-flipped classroom model for Electrical Circuits and Control Systems Analysis and Design classes.
- Instructor of several courses for undergraduate and graduate levels: Electrical Circuit I, II, and Lab. (ENEE 2700, 2720 & 2720L), Signals and Systems (ENEE 3250), Modern Control Systems Analysis and Design (ENEE 3790), Electrical Energy Conversion and Lab. (ENEE 3800 & 3800L), Electrical Engineering Design Project (ENEE 4500), Power Electronics Laboratory (ENEE 4600L), Linear Control and Drives Lab. (ENEE 4790L), Power System Analysis and Design (ENEE 4720/5720), Electronic Instrumentation (ENEE 4770), Sampled Data & Nonlinear Control System (ENEE 4780), Interdisciplinary Design Project II (ENGR 4850), Introduction to Smart Grid (ENEE 5160), Sustainable Electric Energy Systems (ENEE 5650).

The University of South Alabama, Mobile, Alabama
Electrical and Computer Engineering Department

Visiting Assistant Professor

September 2007 - May 2009

- Instructor of several courses for undergraduate and graduate levels: Electrical Circuits for non-EE major (EG 220), Circuit Analysis I (EE 220), Network Analysis (EE 223), Professionalism and Ethics in ECE (EE 301), Computer Methods in ECE (EE 302), Transform Theory of Linear Systems (EE 321), Physical Electronics (EE 331), Electromagnetics II and Lab. (EE 355 & 356), Digital Control Systems (EE 427/527), Optoelectronics (EE 455/555), Computer Vision (EE 590.502).
- Developed three new experiments, revised and enhanced three laboratory manuals for Electromagnetics Laboratory (EE 356).
- Effectively utilize USA Online Courses (eCollege) and provide web-based course materials.
- Serve as faculty advisor for supervising graduate students.
- Assist in compiling the data for ABET self-study report and collect its supporting documentation for ECE courses.

The University of South Alabama, Mobile, Alabama
Electrical and Computer Engineering Department

Adjunct Assistant Professor

August 2005 - August 2007

- Instructor of several courses for undergraduate and graduate levels: Electrical Circuits for the non-EE major (EG 220), Circuit Analysis I (EE 220), Power Systems I (EE 483), Power Electronics (EE 486/586).
- Developed web-based course materials.
- Served as faculty advisor for supervising graduate students.
- Assisted in compiling the data for ABET self-study report and collected its supporting documentation for ECE courses.

The University of Alabama, Tuscaloosa, Alabama
Electrical and Computer Engineering Department

Graduate Teaching Assistant

January 1999 - May 2005

- Developed new experiments, revised and enhanced laboratory manuals, and compiled the data for ABET assessment reports and had full responsibility of teaching several labs.
 - ECE 332 - Electronics I laboratory: developed experiments which include characteristics investigations of electronic switching components, namely; diodes, zener, transistor, and mosfet.
 - ECE 455/453 - Electric Machines laboratory: developed experiments which include power system harmonics, power electronics, machines drives, and machine characteristics.
 - ECE 455/456 - Power Systems laboratory: revised and enhanced the experiment manuals for single- and three-phase transformers, DC motor performance, transmission line, and induction motor performance.
- Served as grader and tutor: Electronics I (ECE 332), Electromechanics (ECE 350), Power Systems I & II (ECE 456 & 457).

- Debugged, revised, and prepared a manual of the BAMA Load Flow software package which is coded in FORTRAN. The package has been used in ECE 456, ECE457, and ECE 494 (Capstone Design).
- Prepared and developed a simplified user manual for EDSA 2004 (a production Power System Design and Simulation software package) to create single-line diagrams, calculate transmission line parameters, short-circuit, load flow, and transient stability analysis.

Course Website Developer and Administrator **July 1999 - May 2005**

- Designed, developed, and maintained course websites: Fundamentals of Electrical Engineering (ECE 320), Electromechanics (ECE 350), Power Systems I & II (ECE 456 & 457), Capstone Design (ECE 494).

Institute of Technology Bandung, Bandung, Indonesia
Electrical Engineering Department

Lecturer **November 1991 - December 1996**

Taught circuit analysis and power system analysis courses.

Research Center

Instructor **November 1991 - December 1995**

Conducted workshops on:

- Energy conservation for commercial and hotel buildings.
- Numerical analysis and computer application in power systems for the Indonesian State Electric Power Utility (PT. PLN) engineers.
- UTC point of contact for IEEE PES Scholarship and twelve UTC undergraduate students have received this prestigious scholarship, 2012 - present.
- Member of UTC Course Evaluation Committee, 2018 - present.
- Serve as CECS Senator at UTC Faculty Senate, 2015 - 2017.
- Member of UTC Academic Standards & Scholarships Committee, 2016 - 2018.
- Member of UTC Classroom Technology Committee, 2015 - 2016.
- Member of UTC Faculty Development Grants Committee, 2014 - 2015.
- Member of UTC Faculty Research Committee, 2011 - 2012.
- Member of UTC Graduate Council, fall 2012 - spring 2015.
- Member of CECS Scholarship Committee, spring 2012 - present.
- CECS ABET Taskforce, fall 2015 - present.
- SACS-COC Coordinator for EE department, fall 2015 - present.
- ABET Coordinator for EE department and revised course assessment form and successfully implemented new assessment method and resulting to the success of ABET reaccreditation for 2016 - 2021, fall 2011 - present.
- Electrical Engineering Program Graduate Coordinator, fall 2012 - spring 2015.
- Served as Chair/member for department/college faculty and administrative assistant search committees (2013, 2014, 2016, and 2017).
- Mentor for NSBE UTC Chapter ACT Review Workshop, biannual.

**ACADEMIC
SERVICE
ACTIVITIES**

- Instructor for 2-hour lab session for CSAS High School students on Energy Systems class at TVA Power Engineering Laboratory, September 17, 2015, and February 17, 2017.
- Mentor for CECS FE Review sessions, 2010 - 2013.

BOOK CHAPTER PUBLICATION

1. **N. Sisworahardjo**, "The Key Success of Higher Education Institution: Synergetic Effort by the Stakeholders," Book Chapter of The Collection of Thought from Indonesian Scholars in the United States of America, ISBN: 978-979-29-6071-6, D. Rukmana and Ismunandar (editor), Andi Offset, Indonesia, 2016.
2. M. Y. El-Sharkh, **N. Sisworahardjo**, "Fuel Cell Applications in Distributed Generation," Book Chapter of Fuel Cell and Distributed Generation, ISBN: 978-81-308-0179-7, F. J. Melguizo (editor), Research Signpost, India, 2007.

SELECTED PUBLICATIONS

1. A. Crawford, T. Mannon, J. Ruderman, **N. Sisworahardjo**, M. Onyango, "Data Visualization of 911 Calls," UTC Summer Fellows Symposium - Undergraduate Research and Creative Endeavor (URaCE), August 29, 2018.
2. A. H. Eltom, W. Elballa, **N. Sisworahardjo**, R. Hay, G. Kobet, "Smart Distribution Course for 21st Century Power Sector Workforce," IEEE Transactions on Power Systems, 08 March 2018, DOI: 10.1109/TPWRS.2018.2811737.
3. **N. Sisworahardjo**, A. Saad, "Spatio-Temporal Context Anomaly Detection for Residential Power Consumption," International Journal on Electrical Engineering and Informatics, vol. 9, No. 4, December 2017, DOI: 10.15676/ijeei.2017.9.4.1
4. A. Saad, **N. Sisworahardjo**, "Data Analytics-Based Anomaly Detection in Smart Distribution Network," International Conference on High Voltage Engineering and Power Systems, Bali, Indonesia, October 2 - 5, 2017
5. A. H. Eltom, **N. Sisworahardjo**, E. H. McMahon, A. Ofoli, S. Craven, "A Comprehensive Approach to Power Sector Workforce Development," ASEE's 123rd Annual Conference & Exposition, New Orleans, LA, USA, June 26 - 29, 2016.
6. S. K. Bunga, A. H. Eltom, **N. Sisworahardjo**, "Impact of Plug-In Electric Vehicle Battery Charging on a Distribution System," 2014 IEEE Industry Applications Society Annual Meeting, Vancouver, British Columbia, Canada, October 5 - 9, 2014.
7. A. Alharbi, A. H. Eltom, **N. Sisworahardjo**, "Impact of Plug-In Electric Vehicle Battery Charging on a Distribution System Based on Real-Time Digital Simulator," International Conference on Renewable Energies and Power Quality (ICREPQ'14), Cordoba, Spain, April 8 - 10, 2014.
8. **N. Sisworahardjo**, M. Y. El-Sharkh, "Validation of artificial neural network-based model of microturbine power plant," 2013 IEEE Industry Applications Society Annual Meeting, Lake Buena Vista, FL, USA, October 6 - 11, 2013.
9. **N. Sisworahardjo**, A. Ofoli, S. Craven, A. Eltom, "State-of-the-Art Laboratories for Training the Modern Power Workforce," 2013 IEEE Power & Energy Society General Meeting, Vancouver, British Columbia, Canada, July 21 - 25, 2013.

10. A. Eltom, **N. Sisworahardjo**, A. Ofoli, "The Evolution of UTC's Industry Grade Digital Relay Laboratory," Poster presented at Electric Energy Systems Curriculum for Sustainability Workshop, Napa, California, February 8 - 9, 2013.
11. A. Ofoli, **N. Sisworahardjo**, A. Eltom, "State-of-the-Art Laboratories for Training the Modern Power Workforce," Poster presented at Electric Energy Systems Curriculum for Sustainability Workshop, Napa, California, February 8 - 9, 2013.
12. **N. Sisworahardjo**, "Least-squares polynomial quasi-Monte Carlo for short-term generation unit asset valuation," 2011 International Conference Electrical Engineering and Informatics (ICEEI), Bandung, Indonesia, July 17 - 19, 2011.
13. T. Yalcinoz, M. Y. El-Sharkh, **N. Sisworahardjo**, M. S. Alam, "Portable PEM Fuel Cell-Ultracapacitor System: Model and Experimental Verification," International Journal of Energy Research, Vol. 34, Issue 14, Pages: 1249 - 1256, November 2010.
14. **N. Sisworahardjo**, T. Yalcinoz, M. Y. El-Sharkh, M. S. Alam, "Neural Network Model of 100 W Portable PEM Fuel Cell and Experimental Verification." International Journal of Hydrogen Energy, Vol. 35, Issue 17, Pages: 9104 - 9109, September 2010.
15. M. Y. El-Sharkh, **N. Sisworahardjo**, A. A. El-Keib, A. Rahman, "Fuzzy unit commitment using the Ant Colony Search Algorithm," 2010 IEEE Electric Power and Energy Conference (EPEC), Pages: 1 - 6, Halifax, Nova Scotia, August 25 - 27, 2010.
16. M. Y. El-Sharkh, **N. Sisworahardjo**, T. Yalcinoz, M. S. Alam, "Portable Direct Hydrogen Fed PEM Fuel Cell Model and Experimental Verification," International Journal of Energy Research, Vol. 34, Issue 7, Pages: 643 - 650, June 2010.
17. **N. Sisworahardjo**, T. Yalcinoz, M. Y. El-Sharkh, M. S. Alam, "Artificial Neural Network Model of 100 W Portable PEM Fuel Cell," 2010 International Symposium on Innovations in Intelligent Systems and Applications, Kayseri, Turkey, June 21 - 24, 2010.
18. A. Rahman, M. Y. El-Sharkh, **N. Sisworahardjo**, M. S. Alam, P. C. Byrne, "Efficient Pulsed Power Generation," Proceedings of 2009 IEEE Pulsed Power Conference, Pages: 1317 - 1322, Washington, DC, June 29 - July 2, 2009.
19. **N. Sisworahardjo**, A. A. El-Keib, M. S. Alam, "Least-Squares Polynomial Approximation for Short-Term Generation Unit Asset Valuation," Proceedings of 2009 IEEE PES Power Systems Conference & Exposition, Pages: 1 - 6, Seattle, Washington, March 15 - 18, 2009.
20. **N. Sisworahardjo**, M. Y. El-Sharkh, M. S. Alam, "Neural Network Controller for Microturbine Power Plants," Electric Power Systems Research, Vol. 78, Issue 8, Pages: 1378 - 1384, August 2008.
21. **N. Sisworahardjo**, M. Alam, G. Aydinli, "Reliability and Availability Analysis of Low Power Portable Direct Methanol Fuel Cells," Journal of Power Sources, Vol. 177, Issues 2, Pages: 412 - 418, March 2008.
22. G. Aydinli, **N. Sisworahardjo**, M. Alam, "Reliability and Sensitivity Analysis of Low Power Portable Direct Methanol Fuel Cell," Proceedings of 2007

- IEEE Eurocon Conference, Pages 1457 - 1462, Warsaw, Poland, September 9 - 12, 2007.
23. M. Uzunoglu, O. Onar, M. Y. El-Sharkh, **N. Sisworahardjo**, A. Rahman, M. S. Alam, "Parallel Operation Characteristics of PEM Fuel Cell and Microturbine Power Plants," *Journal of Power Sources*, Vol. 168, Issues 2, Pages: 469 - 476, June 2007.
 24. M. Y. El-Sharkh, **N. Sisworahardjo**, M. Uzunoglu, O. Onar, M. S. Alam, "Dynamic Behavior of PEM Fuel Cell and Microturbine Power Plants," *Journal of Power Sources*, Vol. 164, Issues 1, Pages: 315 - 321, January 2007.
 25. **N. Sisworahardjo**, A. A. El-Keib, M. S. Alam, "An Improved Stochastic Load Model for Industrial Power Market," *Proceedings of 2006 IEEE Industry Applications Society Annual Meeting*, Pages: 1352 - 1359, Tampa, Florida, October 8 - 12, 2006.
 26. M. Y. El-Sharkh, **N. Sisworahardjo**, A. Rahman, M. S. Alam, "An Improved Ant Colony Search Algorithm for Unit Commitment Application," *Proceedings of 2006 IEEE PES Power Systems Conference & Exposition*, Pages: 1741 - 1746, Atlanta, Georgia, October 29 - November 1, 2006.
 27. **N. Sisworahardjo**, A.A. El-Keib, J. Choi, J. Valenzuela, R. Brooks, I. El-Agtal, "A stochastic load model for an electricity market," *Electric Power Systems Research*, Vol. 76, Issues 6-7, Pages: 500 - 508, April 2006.
 28. **N. Sisworahardjo**, A. A. El-Keib, "Unit Commitment Using the Ant Colony Search Algorithm," *Proceedings of the Large Engineering Systems Conference on Power Engineering (LESCOPE) 2002*, Pages: 2 - 6, Halifax, Nova Scotia, June 26 - 29, 2002.
 29. R. Yasser, **N. Sisworahardjo**, A. A. El-Keib, Robert Brooks, "Risk Management in Competitive Electricity Markets - A Review," *Proceedings of the Large Engineering Systems Conference on Power Engineering (LESCOPE) 1999*, Halifax, Nova Scotia, June 19 - 23, 1999.

**CONFERENCES
ATTENDED**

- 10th Indonesia Focus Conference, Indiana University Bloomington, Bloomington, Indiana, September 28 - 29, 2018.
- World Class Scholar Symposium, Jakarta, Indonesia, August 12 - 17, 2018.
- 2018 Southeast Symposium on Contemporary Engineering Topics (SSCET), the University of Alabama in Huntsville, Huntsville, Alabama, August 3rd, 2018.
- International Conference on High Voltage Engineering and Power Systems, Bali, Indonesia, October 2 - 5, 2017.
- 9th Indonesia Focus Conference, University of Kentucky, Lexington, Kentucky, September 15 - 16, 2017.
- 8th Indonesia Focus Conference, University of Kentucky, Lexington, Kentucky, September 30 - October 1, 2016.
- ASEE's 123rd Conference & Exposition at New Orleans Convention Center, New Orleans, LA, June 26 - 29, 2016.
- 2014 IEEE Industry Applications Society Annual Meeting, Vancouver, British Columbia, Canada, October 5 - 9, 2014.
- 6th Indonesia Focus Conference, the Ohio State University, Columbus, Ohio, November 7 - 8, 2014.

- 2013 IEEE Power & Energy Society General Meeting, Vancouver, British Columbia, Canada, July 21 - 25, 2013.
- 2011 International Conference Electrical Engineering and Informatics (ICEEI), Bandung, Indonesia, July 17 - 19, 2011.
- International Summit 2010, Jakarta, Indonesia, December 16 - 19, 2010.
- 2009 IEEE PES Power Systems Conference & Exposition, Seattle, Washington, March 15 - 18, 2009.
- 2006 IEEE Industry Applications Society Annual Meeting, Tampa, Florida, October 8 - 12, 2006.

HONORS AND AWARDS

Guest Lecture on Research Activities with Limited Resources at Pattimura University, Ambon, Molucca, Indonesia, August 16, 2018.

Invited Speaker on Data Analytics-Based Anomaly Detection in Smart Distribution Network during Plenary Invited Lectures at International Conference on High Voltage Engineering and Power Systems, Bali, Indonesia, October 3, 2017.

Recipient of the “2015 - 2016 Best Faculty Teaching Award” EE Department, the University of Tennessee at Chattanooga, spring 2016.

Recipient of the “2014 - 2015 Best Faculty Teaching Award” EE Department, the University of Tennessee at Chattanooga, spring 2015.

Graduate Council Fellowship, The University of Alabama, summer 2003.

Research/Teaching Assistantships, The University of Alabama, spring 2000 - spring 2005.

Research/Teaching Assistantships, Illinois Institute of Technology, spring 1997 - fall 1998.

PROFESSIONAL AFFILIATION

- IEEE, Member
- IEEE, Power and Energy Society (IEEE PES)
- ASEE, Member

PROFESSIONAL SERVICE ACTIVITIES

- Session Chair for Parallel Sessions in Indonesia Focus Conference 2018, Indiana University Bloomington, Bloomington, IN, 2018.
- Session Chair for Parallel Session in International Conference on High Voltage Engineering and Power Systems, Bali, Indonesia, 2017.
- Member of Advisory Board of Indonesia Focus Conference, 2013 - present.
- Chair for Religion and Environment Parallel Session in Indonesia Focus Conference 2017, University of Kentucky, Lexington, KY, 2017.
- Chair for Media and Social Parallel Session in Indonesia Focus Conference 2016, University of Kentucky, Lexington, KY, 2016.
- Panelist for Plenary Session on Science & Technology and Chair for Science Parallel Session in Indonesia Focus Conference 2014, The Ohio State University, Columbus, OH, 2014.
- President of Asian Society of International Relations and Public Affairs (ASIRPA), 2011 - 2013.

- Member of Board of Trustee Asian Society for International Relations and Public Affairs (ASIRPA), 2011 - present.
- Member of Editorial Board of Journal of Indonesia Focus (JIF), ISSN: 1994-6640 and ISSN-Online: 1994-6659, 2011 - present.
- Associate Editor and reviewer for IEEE IAS Industrial Automation and Control Committee (IACC), 2011 - present.
- Co-Chairman of the committee of 3rd Indonesia Focus 2011 Conference, May 28-29, 2011, Pittsburgh, PA.
- Reviewer for international journals which includes: IEEE Transactions on Industry Applications/IEEE Industry Applications Magazine, International Journal on Electrical Engineering and Informatics, Applied Energy, Scientia Iranica, International Journal of Hydrogen Energy, International Journal of Electrical Power and Energy Systems, Energy Economics, the IEEE Transactions on Power Systems, the IEEE/Power Engineering Society Letters, the Electric Power Systems Research Journal, IEEE PES Transactions on Energy Conversion, IEEE-IAS Energy Systems, Neural Computing and Applications Journal, Journal of Electrical Engineering & Technology, International Transactions on Electrical Energy Systems.

TRAINING/
WORKSHOP

- 2018 NSF Smart and Connected Communities (S&CC) Aspiring PI Workshop, Kansas City, MO, USA, Sept. 17, 2018.
- Reinventing Power Programs through Sustainability-focused Curriculum, NSF-Sponsored Faculty/Industry Workshop, University of Minnesota, Minneapolis, MN, June 15 - 17, 2017.
- CECS Faculty Teaching Workshop, UTC, March 24, 2017. Presented: "The Successful Assessment of Student Teamwork Through CATME."
- Spring Faculty Showcase of Teaching and Learning, UTC, January 29, 2016. Presented: "Sharing Content with Students Using a Tablet and OneNote in Class."
- Engineering Scholars Training, Electric Power Board, August 24 - 28, 2015.
- The First-Year Engineering Experience (FYEE) Conference, Virginia Tech, VA, August 2 - 4, 2015.
- NI LabVIEW Academy Workshop, UTC, March 12 - 14, 2015.
- ABET Workshop, Fundamentals of Program Assessment, Houston, TX, February 15, 2014.
- ASEE Sustainable Virtual Community of Practice (ASEE-VCP) – Online Research-Based Instructional Approaches workshop sponsored by ASEE funded by NSF, fall 2013 - spring 2014.
- OMICRON Substation Grounding Seminar, Chattanooga, Tennessee, October 3, 2013.
- ETAP 115 Power System Engineering I, Chattanooga, Tennessee, August 12 - 16, 2013.
- NSF/ONR/DOE Workshop on Electric Energy Systems Curriculum, Napa, CA, February 8 - 9, 2013.
- UTC Smart Grid Workshop 2012 (USW 2012), Chattanooga, Tennessee, October 3, 2012.
- Transformer Diagnostic Seminar, UTC, Chattanooga, Tennessee, August 16, 2012.

- OPAL-RT Commissioning and Training, UTC, Chattanooga, Tennessee, May 1 - 4, 2012.
- UTC Smart Grid Workshop 2011 (USW 2011), Chattanooga, Tennessee, October 12, 2011.
- UTC Faculty Development Seminars by D. Rockquomore, “Tenure & Time Management: How to Manage Your Time so You Can Publish Prolifically and Have a Life Beyond the Ivory Tower” and “Every Semester Needs a Plan: How to Create a Strategic Plan for Your Research and Writing & the Secret to Actually Doing It!” September 29, 2011.
- NSF-ECEDHA Energy and Power Summer Program, Atlanta, Georgia, July 8 - 12, 2011.
- Introduction to the Wien Automatic System Planning Package (WASP-IV), Argonne National Laboratory, Argonne, Illinois, June 20 - 24, 2011.
- NASA Academy of Aerospace Quality (AAQ) Mini-Workshop, Cape Canaveral, Florida, March 17, 2011.
- ONR/EPRI/AEP-Sponsored Faculty Workshop on Integrated Electric Energy Systems Curriculum, Oregon State University, Corvallis, Oregon, July 21 - 25, 2009.
- NFPA 70E Electrical Safety Training, Alabama Technology Network, December 12, 2007.
- A One-Day Workshop on Supplementing a Course with Online Technologies, University of South Alabama, October 23, 2007.