# Dr. Mohd. Hasan Ali

Research Assistant Professor
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## Objective

To maintain a faculty position in the area of electric power and energy systems.

## Education

**Ph.D.**, Electrical & Electronic Engineering, Kitami Institute of Technology (KIT), Japan, March 2004.
*Thesis title:* A Fuzzy Logic Controlled Braking Resistor for Power System Transient Stability Enhancement.
*Thesis supervisor:* Dr. Junji Tamura, Professor.

**M. Sc.**, Electrical & Electronic Engineering, Kitami Institute of Technology (KIT), Japan, March 2001.
*Thesis title:* Study of Power System Stabilization by Fuzzy Logic Controlled Braking Resistor.
*Thesis supervisor:* Dr. Junji Tamura, Professor.

**B. Sc.**, Electrical & Electronic Engineering, Rajshahi University of Engineering and Technology (RUET) [former BIT-Rajshahi], Bangladesh, January 1995.
*Thesis title:* Fault Current Analysis.
*Thesis supervisor:* Dr. Md. Yeakub Hussain, Professor.

## Research Interests

- Advanced power system analysis, dynamics, stability, control, modeling, and simulation.
- Smart grid and micro-grid systems.
- Renewable energy systems, especially wind power & photovoltaic power generation systems, and fuel cells.
- Energy storage systems (superconductive magnetic energy storage [SMES], flywheel energy storage, super-capacitors energy storage, battery energy storage, hydrogen energy storage, thermal energy storage, compressed air energy storage, and vehicle-to-grid energy storage).
- Electrical machines and motor drive.
- Application of power electronics to power systems.

## Current Research Activity

-Electric ship power systems modeling and analysis.
-Stability analysis of high-speed generator in high-frequency ac power systems.
-Optimization of fuel efficiency for medium voltage DC (MVDC) system.
-Fuel cells modeling and analysis.

-Green power node (GPN) analysis.
-Wind energy system.
-Energy storage systems.
-Fault current limiter.

# Work Experience

## Research Assistant Professor

University of South Carolina (USC), Department of Electrical Engineering, 301 South Main Street, Columbia, SC 29208, USA

Employment Period: July 01, 2009 – Present

Job Duties: Conducting and supervising research in electrical engineering, teaching, developing new research projects and proposals in cooperation with other members of the group, documenting research in scholarly journals, developing simulation models of power system components using various simulation tools, developing control strategies for advanced electric systems, and designing advanced electric systems and assembling simulation models to represent those systems.

## Postdoctoral Research Fellow

Ryerson University, Department of Electrical and Computer Engineering, George Vari Engineering & Computing Center, 245 Church Street, Toronto, Ontario, M5B 1Z2 Canada

Employment Period: January 01, 2008 – June 30, 2009

Job Duties: Performing research works in electrical engineering with a focus on application of high power converters to advanced power systems, wind power generation systems and superconducting magnetic energy storage (SMES) systems; and producing publications.

## Research Professor

Changwon National University (CNU), Department of Electrical Engineering, 9 Sarim-Dong, Changwon, Gyeongnam, 641-773 South Korea

Employment Period: February 01, 2007 – December 31, 2007

Job Duties: Teaching and supervising graduate students in electrical engineering with a focus on EMTDC simulation & RTDS operation technology engineering and advanced power systems; performing researches on advanced power and wind energy systems; producing publications; and participating in academic works.

## JSPS (Japan Society for the Promotion of Science) Postdoctoral Research Fellow

Kitami Institute of Technology (KIT), Department of Electrical and Electronic Engineering, 165 Koen-cho, Kitami, Hokkaido, 090-8507 Japan

Employment Period: November 19, 2004 –January 31, 2007

Job Duties: Performing researches in electrical and electronic engineering with a focus on advanced power and wind energy systems using fuzzy logic-controlled superconducting magnetic energy storage (SMES); producing publications; and advising graduate students.

## Assistant Professor

Rajshahi University of Engineering and Technology (RUET) [former BIT-Rajshahi], Department of Electrical and Electronic Engineering, P.O. kazla, Rajshahi-6204, Bangladesh

Employment Period: September 21, 2004 – November 04, 2004

Job Duties: Teaching and supervising undergraduate and graduate students in electrical and electronic engineering with a focus on advanced power systems, electrical machines, electrical circuits and intelligent control techniques; performing research works on advanced power systems; producing publications; participating in curriculum development; and providing service to the department, university and profession.

## Lecturer

Rajshahi University of Engineering and Technology (RUET) [former BIT-Rajshahi], Department of Electrical and Electronic Engineering, P.O. kazla, Rajshahi-6204, Bangladesh

Employment Period: August 01, 1996 –September 20, 2004 (Granted leave for M.Sc. Engg. and Ph.D. study programs in Japan from November 15, 1998–March 28, 2004)

Job Duties: Teaching and supervising undergraduate students in electrical and electronic engineering with a focus on advanced power systems, electrical machines, electrical circuits and basic electronics; performing research works on advanced power systems; producing publications; participating in curriculum development; and providing service to the department, university and profession.

## Part-Time Lecturer

Rajshahi University of Engineering and Technology (RUET) [former BIT-Rajshahi], Department of Electrical and Electronic Engineering, P.O. kazla, Rajshahi-6204, Bangladesh

Employment Period: March 08, 1995 –July 31, 1996

Job Duties: Teaching undergraduate students in electrical and electronic engineering with a focus on electrical machines, advanced power systems, electrical circuits, basic electronics and power electronics; performing research works on advanced power systems; producing publications; and providing service to the department, university and profession.

# Academic Awards and Scholarships

[1] Outstanding Paper Awards in the International Conference on Electrical Machines and Systems 2007 (ICEMS 2007) held at Seoul, Korea, October 08-11, 2007 (Paper titles: "Improvement of Wind Generator Stability by Fuzzy Logic-Controlled SMES" and "The Experimental Analysis of the Grid-Connected PV System Applied by POS MPPT" ).

[2] IEEE Sapporo Section Student Paper Contest Award 2002, Japan (Paper title: Improvement of Transient Stability by Fuzzy Logic Controlled Braking Resistor (Effect of temperature rise of braking resistor)).

[3] JSPS (Japan Society for the Promotion of Science) Postdoctoral Fellowship (the most competitive and prestigious postdoctoral fellowship in the world) since November 2004 to January 2007.

[4] MINT (Academic Excellence) Award 2002 from Kitami Institute of Technology, Japan.

[5] Japan Government (Monbukagakusho) Scholarship since November 1998 to March 2004.

# List of Publications

## Papers in Refereed Journals (Total 37)

[1] **M. H. Ali,** B. Wu, and R. A. Dougal, "An Overview of SMES Applications in Power and Energy Systems," *IEEE Transactions on Sustainable Energy*, vol. 1, no.1, pp. 38-47, April 2010.

[2] **M. H. Ali**, B. Wu, J. Tamura, and R. A. Dougal, "Minimization of Shaft Oscillations by Fuzzy Controlled SMES Considering Time Delay," *Journal of Electric Power Systems Research*, vol. 80, pp. 770-777, July 2010.

[3] **M. H. Ali** and B. Wu, "Comparison of Stabilization Methods for Fixed-Speed Wind Generator Systems," *IEEE Transactions on Power Delivery*, Vol. 25, No. 1, pp. 323-331, January 2010.

[4] **M. H. Ali**, M. Park, I. -k. Yu, T. Murata, J. Tamura, and B. Wu, "Enhancement of Transient Stability by Fuzzy Logic-Controlled SMES Considering Communication Delay," *International Journal of Electrical Power and Energy Systems*, Vol. 31, Issues 7-8, pp. 402-408, September 2009.

[5] **M. H. Ali**, M. Park, I. -k. Yu, T. Murata, and J. Tamura, "Improvement of Wind Generator Stability by Fuzzy Logic-Controlled SMES," *IEEE Transactions on Industry Applications*, Vol. 45, No. 3, pp. 1045-1051, May/June 2009.

[6] S. M. Muyeen, R. Takahashi, T. Murata, J. Tamura, **M. H. Ali**, Y. Matsumura, A. Kuwayama, and T. Matsumoto, "Low Voltage Ride Through Capability Enhancement of Wind Turbine Generator System During Network Disturbance," *Journal of IET Renewable Power Generation*, 2009, Vol. 3, No. 1, pp. 65-74, March 2009.

[7] S. M. Muyeen, R. Takahashi, T. Murata, J. Tamura, and **M. H. Ali**, "Application of STATCOM/BESS for Wind Power Smoothening and Hydrogen Generation," *Journal of Electric Power Systems Research*, Vol. 79, Issue 2, pp. 365-373, February 2009.

[8] **M. H. Ali**, T. Murata, and J. Tamura, "Influence of Communication Delay on the Performance of Fuzzy Logic-Controlled Braking Resistor Against Transient Stability," *IEEE Transactions on Control Systems Technology*, Vol. 16, No. 6, pp. 1232-1241, November 2008.

[9] J. H. Kim, M. Park, **M. H. Ali**, A. R. Kim, S. R. Lee, J. Y. Yoon, J. Cho, K. D. Sim, S. H. Kim, and I. K. Yu, "A SFCL Modeling and Application with Real HTS Material Connecting to Real Time Simulator," *Journal of Physica C*: *Superconductivity and Its Applications*, Vol. 468, Issues 15-20, pp. 2067-2071, September 2008.

[10] A.R. Kim, H.Y. Jung, J.H Kim , **M. H. Ali**, M. Park, I. K. Yu, H.J. Kim, S.H. Kim, and K.C. Seong, "A Study on the Operation Analysis of the Power Conditioning System with Real HTS SMES Coil," *Journal of Physica C*: *Superconductivity and Its Applications*, Vol. 468, Issues 15-20, pp. 2104-2110, September 2008.

[11] S. M. Muyeen, R. Takahashi, **M. H. Ali**, T. Murata, and J. Tamura, "Transient Stability Augmentation of Power System Including Wind Farms by Using ECS," *IEEE Transactions on Power Systems*, Vol. 23, No. 3, pp. 1179-1187, August 2008.

[12] S. M. Muyeen, S. Shishido, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Application of Energy Capacitor System to Wind Power Generation," *Journal of Wind Energy*, Vol. 11, Issue 4, pp. 335-350, July/August 2008.

[13] D. -J. Park, Y. -J. Kim, H. -R. Seo, M. Park, I. -K. Yu, and **M. H. Ali**, "Comparison of PSCAD/EMTDC & RTDS-based Simulations of a Pitch Controlled Wind Power Generation System," *Pulse, The Manitoba HVDC Research Centre Journal*, pp. 10-12, June 2008.

[14] J. -H. Kim, M. Park, **M. H. Ali**, J. Cho, K. Sim, S. Kim, H. -J. Kim, S. J. Lee, and I. -K. Yu, "Investigation of the Over Current Characteristics of HTS Tapes Considering the Application for HTS Power Device," *IEEE Transactions on Applied Superconductivity*, Vol. 18, No. 2, pp. 1139-1142, June 2008.

[15] J.-Ho Kim, M. Park, **M. H. Ali**, J. Cho, J.-Y. Yoon, S. R. Lee, and I.-K. Yu, "RTDS Analysis of the Fault Currents Characteristics of HTS Power Cable in Utility Power Network," *IEEE Transactions on Applied Superconductivity*, Vol. 18, No. 2, pp. 684-688, June 2008.

[16] A.-R. Kim, K.-H. Kim, J.-H. Kim, **M. H. Ali**, M. Park, I.-K. Yu, H.-J. Kim, S.-H. Kim, and K.-C. Seong, "Operational Characteristic of the High Quality Power Conditioner with SMES," *IEEE Transactions on Applied Superconductivity*, Vol. 18, No. 2, pp. 705-708, June 2008.

[17] **M. H. Ali**, T. Murata, and J. Tamura, "Transient Stability Enhancement by Fuzzy Logic-Controlled SMES Considering Coordination with Optimal Reclosing of Circuit Breakers," *IEEE Transactions on Power Systems*, Vol. 23, No. 2, pp. 631- 640, May 2008.

[18] **M. H. Ali**, M. Park, and I.-K. Yu, "Minimization of Shaft Torsional Oscillations by Fuzzy Controlled Braking Resistor Considering Communication Delay," *WSEAS Transactions on Power Systems*, Issue 3, Vol. 3, pp. 82-89, March 2008.

[19] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, J. Tamura, Y. Tomaki, A. Sakahara, and E. Sasano, "Damping of Blade-Shaft Torsional Oscillations of Wind Turbine Generator System," *Journal of Electric Power Components and Systems*, Vol. 36, No. 2, pp. 195-211, February 2008.

[20] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Wind Generator Output Power Smoothing by Using Pitch Controller," *International Review of Electrical Engineering (IREE)*, Vol.2, No. 3, pp. 310-321, June 2007.

[21] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, J. Tamura, Y. Tomaki, A. Sakahara, and E. Sasano, "Comparative Study on Transient Stability Analysis of Wind Turbine Generator System Using Different Drive Train Models," *Journal of IET Renewable Power Generation*, 2007, Vol. 1, No.2, pp. 131-141, June 2007.

[22] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, J. Tamura, Y. Tomaki, A. Sakahara, and E. Sasano, "Analysis of Wind Generator Transient Stability Considering Six-Mass Drive Train Model," *International Review of Electrical Engineering (IREE)***,** Vol.2, No. 1, pp. 91-102, February 2007.

[23] **M. H. Ali**, T. Murata, and J. Tamura, "A Fuzzy Logic-Controlled Superconducting Magnetic Energy Storage (SMES) for Transient Stability Augmentation," *IEEE Transactions on Control Systems Technology*, Vol. 15, No.1, pp. 144-150, January 2007.

[24] **M. H. Ali**, T. Murata, and J. Tamura, "Effect of Fuzzy Controlled Braking Resistor on Damping Turbine Generator Shaft Torsional Oscillations During Unsuccessful Reclosing," *International Review of Electrical Engineering (IREE)***,** Vol. 1, No. 5, pp. 711-718, December 2006.

[25] **M. H. Ali**, T. Murata, and J. Tamura, "Minimization of Fluctuations of Line Power and Terminal Voltage of Wind Generator by Fuzzy Logic-Controlled SMES," *International Review of Electrical Engineering (IREE)*, Vol. 1, No. 4, pp. 559-566, October 2006.

[26] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, J. Tamura, Y. Tomaki, A. Sakahara, and E. Sasano, "Transient Stability Analysis of Grid Connected Wind Turbine Generator System Considering Multi-Mass Shaft Modeling," *Journal of Electric Power Components and Systems*, Vol. 34, No. 10, pp. 1121-1138, October 2006.

[27] S. M. Muyeen, M. A. Mannan, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Stabilization of Wind Turbine Generator System by STATCOM," *IEEJ Transactions on Power and Energy*, Vol.126, No.10, pp.1073-1082, October 2006.

[28] **M. H. Ali**, T. Murata, and J. Tamura, "Effect of Coordination of Optimal Reclosing and Fuzzy Controlled Braking Resistor on Transient Stability During Unsuccessful Reclosing," *IEEE Transactions on Power Systems***,** Vol. 21, No. 3, pp.1321- 1330, August 2006.

[29] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Transient Stability Enhancement of Wind Generator by a New Logical Pitch Controller," *IEEJ Transactions on Power and Energy*, Vol.126, No.8, pp. 742-752, August 2006.

[30] **M. H. Ali**, T. Murata, and J. Tamura, "A Fuzzy Logic-Controlled SMES for Damping Shaft Torsional Oscillations of Synchronous Generator," Letter, *IEEJ Transactions on Electrical and Electronic Engineering, John Wiley & Sons*, Vol.1, pp. 116-120, May 2006.

[31] **M. H. Ali**, Y. Soma, T. Murata and J. Tamura, "Transient Stability Improvement By Fuzzy Logic Controlled Braking Resistor," *International Journal of Power and Energy Systems*, Vol. 25, No 3, pp. 143-150, October 2005.

[32] **M. H. Ali**, T. Murata, and J. Tamura, "Determination of Reduced Number and Suitable Locations of Fuzzy Logic Controlled Braking Resistors for Transient Stability Enhancement," *IEEJ Transactions on Power and Energy*, Vol. 125, No. 1, pp. 65-72, January 2005.

[33] **M. H. Ali**, T. Murata and J. Tamura, "The Effect of Temperature Rise of the Fuzzy Logic Controlled Braking Resistors on Transient Stability," *IEEE Transactions on Power Systems*, Vol. 19, No. 2, pp. 1085-1095, May 2004.

[34] **M. H. Ali**, T. Murata, and J. Tamura, "An Analysis of the Fuzzy Logic Controlled Braking Resistor for Transient Stability Improvement in Multi-Machine Power System," *IEEJ Transactions on Power and Energy***,** Vol. 124, No. 4, pp. 553-560, April 2004.

[35] **M. H. Ali**, T. Mikami, T. Murata, and J. Tamura, "A Fuzzy Logic Controlled Braking Resistor Scheme for Damping Shaft Torsional Oscillations," *IEEJ Transactions on Power and Energy*, Vol. 124, No. 2, pp. 207-214, February 2004.

[36] **M. H. Ali**, T. Murata, and J. Tamura, "Braking Resistor Switching By Genetic Algorithm Optimized Fuzzy Logic Controller In Multi-Machine Power System," *IEEJ Transactions on Power and Energy*, Vol.123, No.3, pp.315-323, March 2003.

[37] **M. H. Ali**, Y. Soma, T. Murata, and J. Tamura, "A Fuzzy Logic Controlled Braking Resistor Scheme For Transient Stability Enhancement," *Transactions of IEE of Japan*, *Power and Energy Society*, Vol.122-B, No.1, pp.113-120, January 2002.

## Papers in International Conference Proceedings (Refereed) [Total 45]

[1] **M. H**. **Ali**, Roger Dougal, Bob Hebner, James Langston, Karl Schoder, Mischa Steurer, Mike Andrus, Omar Faruque, and Rob Hovsapian, "Cross-Platform Validation of Notional Baseline Architecture Models of Naval Electric Ship Power Systems," *Proceedings of the IEEE Electric Ship Technologies Symposium* (*ESTS*) *2011*, pp.78-83, April 10-13, Virginia, USA.

[2] Y. Zhang, R.A. Dougal, and **M. H. Ali**, "Soft Reclosing of Fault Current Limiters in Electric Ship Power Systems," *Proceedings of the IEEE Electric Ship Technologies Symposium* (*ESTS*) *2011*, pp.244-247, April 10-13, Virginia, USA.

[3] **M. H. Ali** and R. A. Dougal, "Comparison of SMES and SFCL for Transient Stability Enhancement of Wind Generator System", *Proceedings of the IEEE Energy Conversion Congress and Exposition (ECCE 2010)*, Atlanta, Georgia, USA, September 12-16, 2010, pp. 3382-3387.

[4] **M. H. Ali**, R. A. Dougal, M. Steurer, L. Graber, J. Ciezki, M. Andrus, D. Infante, Robert Hebner, H. Ouroua, and D. Weeks, "Guidelines for the Specification of Models to be Used in Design-Oriented Simulations," *Proceedings of the International Conference on Grand Challenges in Modeling and Simulation (GCMS 2010)*, Ottowa, Canada, July 11-14, 2010, pp. 367-374.

[5] **M. H. Ali** and R. A. Dougal, "A Closed-Loop Control Based Braking Resistor for Stabilization of Wind Generator System," *Proceedings of the IEEE SoutheastCon 2010*, March 18-21, 2010, North Carolina, USA, pp. 264-267.

[6] A. Anwar, **M. H. Ali**, and R. A. Dougal, "Supercapacitor Energy Storage for Low-Voltage Ride Through in a 13.8KV AC System," *Proceedings of the IEEE SoutheastCon 2010*, March 18-21, 2010, North Carolina, USA, pp. 189-192.

[7] **M. H. Ali** and B. Wu, "Comparison among Stabilization Methods of Fixed-Speed Wind Generator System," *Proceedings of the IEEE Energy Conversion Congress and Exposition* (*ECCE 2009*), September 20-24, 2009, San Jose, California, USA, pp. 2667-2674.

[8] **M. H. Ali**, J. Tamura, and B. Wu, "SMES strategy to Minimize Frequency Fluctuations of Wind Generator System," *Proceedings of the 34th Annual Conference of the IEEE Industrial Electronics Society (IECON 2008),* 10-13 November 2008, Orlando, Florida, USA, pp. 3382-3387.

[9] D.-J. Park, Y.-J. Kim, **M. H. Ali**, M. Park, and I.-K. Yu, "RTDS-based Modelling and Analysis of Grid-Connected Fixed Speed Wind Generator System," *Proceedings of the Fourth IASTED Asian Conference on Power and Energy Systems (AsiaPES 2008),* Paper No. 606-112, pp. 37-41, April 2 – 4, 2008, Langkawi, Malaysia.

[10] **M. H. Ali**, M. Park, I.-k. Yu, T. Murata, and J. Tamura, "Improvement of Wind Generator Stability by Fuzzy Logic-Controlled SMES," *Proceeding of the International Conference on Electrical Machines and Systems 2007 (ICEMS 2007), Seoul, Korea*, October 08-11, 2007, pp. 1753-1758.

[11] **M. H. Ali**, M. Park, I.-k. Yu, T. Murata, and J. Tamura, "Coordination of Fuzzy Controlled Braking Resistor and Optimal Reclosing for Damping Shaft-Torsional Oscillations of Synchronous Generator," *Proceeding of the International Conference on Electrical Machines and Systems 2007 (ICEMS 2007), Seoul, Korea*, October 08-11, 2007, pp. 1259-1264.

[12] S. M. Muyeen, R. Takahashi, T. Murata, J. Tamura, and **M. H. Ali**, "Stabilization of Wind Farms Connected with Multi-Machine Power System by Using STATCOM/BESS," *Proceeding of the International Conference on Electrical Machines and Systems 2007 (ICEMS 2007), Seoul, Korea*, October 08-11, 2007, pp. 232-237.

[13] S. M. Muyeen, R. Takahashi, T. Murata, J. Tamura, and **M. H. Ali**, "Transient Stability Analysis of Permanent Magnet Variable Speed Synchronous Wind Generator," *Proceeding of the International Conference on Electrical Machines and Systems 2007 (ICEMS 2007), Seoul, Korea*, October 08-11, 2007, pp. 288-293.

[14] S.-J. Lee, H.-Y. Park, G.-H. Kim, H.-R. Seo, **M. H. Ali**, M. Park, and I.-k. Yu, "The Experimental Analysis of the Grid-Connected PV System Applied by POS MPPT," *Proceeding of the International Conference on Electrical Machines and Systems 2007 (ICEMS 2007), Seoul, Korea*, October 08-11, 2007.

[15] D.-J. Park, Y.-J. Kim, **M. H. Ali**, M. Park, and I.-k. Yu, "A Novel Real Time Simulation Method for Grid-Connected Wind Generator System by Using RTDS," *Proceeding of the International Conference on Electrical Machines and Systems 2007 (ICEMS 2007), Seoul, Korea*, October 08-11, 2007, pp. 1936-1941.

[16] H.-R. Seo, **M. H. Ali**, G.-H. Kim, M. Park, and I.-k. Yu, "A study on the Performance Analysis of the Grid-Connected PV-AF System," *Proceeding of the International Conference on Electrical Machines and Systems 2007 (ICEMS 2007), Seoul, Korea*, October 08-11, 2007, pp. 371-375.

[17] **M. H. Ali**, M. Park, and I.-K. Yu, "Minimization of Shaft Torsional Oscillations by Fuzzy Controlled Braking Resistor Considering Communication Delay," *Proceedings of the 7th WSEAS International Conference on Power Systems, pp. 174-179, Beijing, China*, September 15-17, 2007.

[18] H.-Y. Jung, D.-J. Park, J.-H. Kim, **M. H. Ali**, M. Park, I.-K. Yu, S.-H. Kim, K.-D. Sim, H.-J. Kim, and K.-C. Seong, "A Study of the SMES Model Algorithm in RTDS," *Presented in the IEEE International Conference on Magnet Technology, 2007, Philadelphia, USA*, August 27-31, 2007.

[19] A.-R. Kim, K.-H. Kim, J.-H. Kim, **M. H. Ali**, M. Park, I.-K. Yu, H.-J. Kim, S.-H. Kim, and K.-C. Seong, "Operational Characteristic of the High Quality Power Conditioner with SMES," *Presented in the IEEE International Conference on Magnet Technology, 2007, Philadelphia, USA*, August 27-31, 2007.

[20] J.-H. Kim, M. Park, **M. H. Ali**, J. Cho, K. Sim, S. Kim, H.-J. Kim, S. J. Lee, and I.-K. Yu, "Investigation of the Over Current Characteristics of HTS Tapes Considering the Application for HTS Power Device," *Presented in the IEEE International Conference on Magnet Technology, 2007, Philadelphia, USA*, August 27-31, 2007.

[21] J.-Ho Kim, M. Park, **M. H. Ali**, J. Cho, J.-Y. Yoon, S. R. Lee, and I.-K. Yu, "RTDS Analysis of the Fault Currents Characteristics of HTS Power Cable in Utility Power Network," *Presented in the IEEE International Conference on Magnet Technology, 2007, Philadelphia, USA*, August 27-31, 2007.

[22] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Stabilization of Wind Farms Connected with Multi Machine Power System by Using STATCOM," Paper ID: 152, *CD record of the IEEE Power Tech 2007 conference, 1-5 July 2007, Lausanne, Switzerland*.

[23] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Wind Generator Output Power Smoothing and Terminal Voltage Regulation by Using STATCOM/ESS, Paper ID: 258, *CD record of the IEEE Power Tech 2007 conference, 1-5 July 2007, Lausanne, Switzerland*.

[24] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, J. Tamura, Y. Tomaki, A. Sakahara, and E. Sasano, "Blade-Shaft Torsional Oscillation Minimization of Wind Turbine Generator System by Using STATCOM/ESS," Paper ID: 538, *CD record of the IEEE Power Tech 2007 conference, 1-5 July 2007, Lausanne, Switzerland*.

[25] S. M. Muyeen, M. A. Mannan, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Simulation Technique & Application of Space-Vector PWM Method in PSCAD/EMTDC," Paper ID: 041, *Proceeding of the International Conference on Information and Communication Technology (ICICT 2007)*, 7-9 March 2007, pp.1-4, *Dhaka, Bangladesh*.

[26] S. M. Muyeen, M. A. Mannan, **M. H. Ali**, R. Takahashi, T. Murata, J. Tamura, Y. Tomaki, A. Sakahara, and E. Sasano, "Fault Analysis of Wind Turbine Generator System Considering Six-Mass Drive Train Model", *Proceeding of the 4th International Conference on Electrical and Computer Engineering (ICECE 2006)*, 19-21 December 2006, pp. 205-208, *Dhaka, Bangladesh*.

[27] **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Stabilization of Wind Generator by PWM Voltage Source Converter and Chopper controlled SMES," Ref No. 0074, *CD record of ICEMS (International Conference on Electrical Machines and Systems) 2006, Nagasaki, Japan*, November 20-23, 2006.

[28] **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Synchronous Generator Stabilization by Fuzzy Logic-Controlled Braking Resistor During Unsuccessful Reclosing," Ref No. 0073, *CD record of ICEMS (International Conference on Electrical Machines and Systems) 2006, Nagasaki, Japan*, November 20-23, 2006.

[29] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Wind Generator Output Power

Smoothing by Using Pitch Controller," Ref No. 0076, *CD record of ICEMS (International Conference on Electrical Machines and Systems) 2006, Nagasaki, Japan*, November 20-23, 2006.

[30] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, J. Tamura, Y. Tomaki, A. Sakahara, and E. Sasano, "Transient Stability Analysis of Wind Generator by Using Six-Mass Drive Train Model," Ref No. 0082, *CD record of ICEMS (International Conference on Electrical Machines and Systems) 2006, Nagasaki, Japan*, November 20-23, 2006.

[31] **M. H. Ali**, T. Murata, and J. Tamura, "Wind Generator Stabilization by PWM Voltage Source Converter and Chopper controlled SMES," Ref. No. 248, *CD record of ICEM (International Conference on Electrical Machines) 2006, September 2006, Chania, Greece*.

[32] **M. H. Ali**, T. Murata, and J. Tamura, "Damping Shaft Torsional Oscillation of Synchronous Generator by Fuzzy Logic-Controlled SMES," Ref. No. 247, *CD record of ICEM (International Conference on Electrical Machines) 2006, September 2006, Chania, Greece*.

[33] S. M. Muyeen, M. A. Mannan, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Application of Fuzzy Logic Control Based STATCOM to Stabilize Wind Turbine Generator System," Ref. No. 198, *CD record of ICEM (International Conference on Electrical Machines) 2006, September 2006, Chania, Greece*.

[34] **M. H. Ali**, T. Murata, and J. Tamura, "Stabilization of Power System Including Wind Generator by Fuzzy Logic-Controlled Superconducting Magnetic Energy Storage," *Proceedings of the Sixth International Conference on Power Electronics and Drive Systems (PEDS 2005)*, Nov-Dec 2005, pp. 1611-1616, *Kuala Lumpur, Malaysia*.

[35] **M. H. Ali**, T. Murata, and J. Tamura, "A Fuzzy Logic-Controlled Superconducting Magnetic Energy Storage (SMES) Unit for Augmentation of Transient Stability," *Proceedings of the Sixth International Conference on Power Electronics and Drive Systems (PEDS 2005)*, Nov-Dec 2005, pp. 1566-1571, *Kuala Lumpur, Malaysia*.

[36] S. M. Muyeen, **M. H. Ali**, R. Takahashi, Y. Tomaki, A. Sakahara, E. Sasano, T. Murata, and J. Tamura, "Transient Stability Analysis of Wind Generator System with the Consideration of Multi-Mass Shaft Model", *Proceedings of the Sixth International Conference on Power Electronics and Drive Systems (PEDS 2005)*, Nov-Dec 2005, pp. 511-516, *Kuala Lumpur, Malaysia*.

[37] S. M. Muyeen, M. A. Mannan, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Stabilization of Grid Connected Wind Generator by STATCOM", *Proceedings of the Sixth International Conference on Power Electronics and Drive Systems (PEDS 2005)*, Nov-Dec 2005, pp. 1584-1589, *Kuala Lumpur, Malaysia*.

[38] A. Inoue, **M. H. Ali**, R. Takahashi, M. Kimura, M. Futami, M. Ichinose, K. Ide, T. Murata, and J. Tamura, "A calculation Method of the Total Efficiency of Wind Generator", *Proceedings of the Sixth International Conference on Power Electronics and Drive Systems (PEDS 2005)*, Nov-Dec 2005, pp. 1595-1600, *Kuala Lumpur, Malaysia*.

[39] **M. H. Ali**, T. Murata, and J. Tamura, "Augmentation of Transient Stability by Fuzzy-Logic Controlled Braking Resistor in Multi-Machine Power System," *Proceedings of the IEEE PowerTech 2005 conference*, June 2005, Paper No. 61, *St. Petersburg, Russia*.

[40] **M. H. Ali**, M. A. Hossain, and J. Tamura, "Fuzzy Control of Braking Resistor by Time Derivative of

TKED," *Proceedings of ICECE (International Conference on Electrical and Computer Engineering) 2004*, December 2004, pp.202-205, *Dhaka, Bangladesh*.

[41] M. A. Mannan, **M. H. Ali**, T. Murata, J. Tamura, and T. Tsuchiya, "Fuzzy-Logic-Based High-Performance Control of Induction Motor Including Core Loss," *CD Record of ICEM (International Conference on Electrical Machines) 2004*, September 2004, Paper No. 256, *Cracow, Poland*.

[42] **M. H. Ali**, T. Murata, and J. Tamura, "Transient Stability Augmentation By Fuzzy Logic Controlled Braking Resistor In Multi-Machine Power System," *Proceedings of IEEE/PES Transmission and Distribution Conference and Exhibition 2002: Asia Pacific*, Vol. 2, October 2002, pp.1332-1337, *Yokohama, Japan*.

[43] **M. H. Ali**, T. Murata, and J. Tamura, "Synchronous Generator Stabilization By Braking Resistor Based On The Genetic Algorithm Optimized Fuzzy Logic Controller," *CD Record of ICEM (International Conference on Electrical Machines) 2002*, August 2002, Paper No. 149, *Brugge, Belgium*.

[44] **M. H. Ali**, Y. Soma, T. Murata, and J. Tamura, "A Fuzzy Logic Controlled Braking Resistor Scheme for Stabilization of Synchronous Generator," *Proceedings of IEMDC (IEEE International Electric Machines and Drives Conference) 2001*, June 2001, pp. 548-550, *MIT, USA*.

[45] **M. H. Ali**, T. Funamoto, T. Murata, and J.Tamura, "Stabilization of Synchronous Generator by Fuzzy Logic Controlled Braking Resistor," *Proceedings of ICEM (International Conference on Electrical Machines) 2000*, August 2000, pp. 964-968, *Espoo, Finland*.

## Papers in National Conference Proceedings [Total 20]

[1] D. Park, Y. Kim, **M. H. Ali**, M. Park, and I.-K. Yu, "Modelling of 3MW Wind Power Generation System Using RTDS," The *Proceedings of the 38th the KIEE (Korean Institute of Electrical Engineers) Summer Conference 2007, Yong-Pyeong, Korea*, July 18-20, 2007, pp. 190-191.

[2] D. Park, Y. Kim, **M. H. Ali**, M. Park, and I.-K. Yu, "Simulation Method of 3MW Wind Power Generation System Using RTDS", The *Proceedings of the Spring Conference of the Korean Institute of Electrical Engineers, Ulsan Branch, Korea*, May 19, 2007, pp. 213-214.

[3] **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Effect of Fuzzy Logic-Controlled SMES on Transient Stability During Unsuccessful Reclosing of Circuit Breakers," The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan*, October 28-29, 2006, Paper no. 12, pp. 19-20.

[4] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Blade-Shaft Torsional Oscillation Minimization of Wind Turbine Generator System by Using STATCOM", The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan*, October 28-29, 2006, Paper no. 162, pp. 217-218.

[5] **M. H. Ali**, T. Murata, and J. Tamura, "A Comparative Study Between Fuzzy Logic-Controlled Superconducting Magnetic Energy Storage and Braking Resistor", The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan*, October 2005, Paper no. 24.

[6] S. M. Muyeen, **M. H. Ali**, R. Takahashi, Y. Tomaki, A. Sakahara, E. Sasano, T. Murata, and J. Tamura, "Effect of Multi-Mass Shaft Model on Transient Stability Analysis of Wind Turbine Generator System",

The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan*, October 2005, Paper no. 170.

[7] **M. H. Ali**, T. Murata, and J. Tamura, "Total Kinetic Energy Deviation As Input To Fuzzy Logic Controller for Braking Resistor Switching," The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan, IEEE Organized Session*, October 2003, pp. 280-281.

[8] S. M. Muyeen, **M. H. Ali**, R. Takahashi, T. Murata, and J. Tamura, "Transient Stability Analysis of a Multi-Machine Power System Including Wind Power Stations," The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan, IEEE Organized Session*, October 2003, pp. 282-283.

[9] **M. H. Ali**, T. Murata, and J. Tamura, "Stabilization of Synchronous Generators by Fewer Fuzzy Logic Controlled Braking Resistors," The *Papers of Technical Meeting on Rotating Machinery, IEE of Japan*, October 2003, pp. 41-46.

[10] **M. H. Ali**, T. Mikami, T. Murata, and J. Tamura, "A Fuzzy Logic Controlled Braking Resistor Scheme for Damping Shaft Torsional Oscillations," *Proceedings of the Fourteenth Annual Conference of Power & Energy Society, IEE of Japan,* Volume A, August 2003, pp. 64-69.

[11] **M. H. Ali**, T. Murata, and J. Tamura, "An Analysis of The Fuzzy Logic Controlled Braking Resistor For Transient Stability Improvement In Multi-Machine Power System," *Proceedings of the Fourteenth Annual Conference of Power & Energy Society, IEE of Japan,* Volume A, August 2003, pp. 58-63.

[12] **M. H. Ali**, T. Murata, and J. Tamura, "Improvement of Transient Stability By Fuzzy Logic Controlled Braking Resistor (Effect of temperature rise of braking resistor)," The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan, IEEE Organized Session*, October 2002, pp. 325-326.

[13] **M. H. Ali**, T. Murata, and J. Tamura, "Transient Stability Enhancement By Fuzzy Logic Controlled Braking Resistor in Multi-Machine Power System (Effect of temperature rise of braking resistor)," The *Papers of the Joint Convention of Power Engineering and Power System Engineering, IEE of Japan*, Paper No. PE-02-106 PSE-02-116, September 2002, pp.7-12.

[14] **M. H. Ali**, T. Murata, and J. Tamura, "Braking Resistor Switching By Genetic Algorithm Optimized Fuzzy Logic Controller In Multi-Machine Power System," *Proceedings of the Thirteenth Annual Conference of Power & Energy Society, IEE of Japan,* Volume A, August 2002, pp.247-252.

[15] **M. H. Ali**, T. Murata, and J. Tamura, "Genetic Algorithm Optimized Fuzzy Logic Controller For Braking Resistor Switching To Improve Transient Stability," The *Proceedings of the SICE (Society of Instrument and Control Engineers), Japan*, January 2002, pp.45-48.

[16] **M. H. Ali**, T. Murata, and J. Tamura, "A Genetic Algorithm Technique To Design An Optimal Fuzzy Logic Controller for Braking Resistor Switching," The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan, IEEE Organized Session*, October 2001, pp.401-402.

[17] **M. H. Ali**, T. Murata, and J. Tamura, "Enhancement of Transient Stability By Fuzzy Logic Controlled Braking Resistor," The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan*, October 2000, pp. 40-41.

[18] **M. H. Ali**, T. Murata, and J. Tamura, "A Performance Comparison Between Fuzzy Logic And PID Controlled Braking Resistor Scheme For Transient Stability Enhancement," The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan*, October 2000, pp. 38-39.

[19] **M. H. Ali**, T. Funamoto, T. Murata, and J. Tamura, "Power System Stabilization by Fuzzy Logic Controlled Braking Resistor," *Proceedings of the Eleventh Annual Conference of Power & Energy Society, IEE of Japan*, August 2000, pp. 51-56.

[20] **M. H. Ali**, T. Funamoto, M. Yagami, T. Murata, and J. Tamura, "Study of Power System Stabilization by Fuzzy Logic Controlled Braking Resistor," The *Proceedings of the Hokkaido Chapters of the Institutes of Electrical and Information Engineers, Japan*, October 1999, pp. 108-109.

# Courses Taught

## Graduate Courses

[1] Directed Individual Study-ELCT897 (Summer I & II 2011 Semester, USC)

[2] Power Systems Grounding and Transients-ELCT752 (Spring 2011 Semester, USC)

[3] Electrical Drives-ELCT753 (Spring 2010 Semester, USC)

[4] RTDS Operation Technology Engineering (CNU, South Korea)

[5] EMTDC Simulation Engineering (CNU, South Korea)

[6] Application of Fuzzy Logic Control to Power Systems (RUET, Bangladesh)

[7] Generalized Machine Theory (RUET, Bangladesh)

## Undergraduate Courses

[1] Power Systems Design and Analysis-ELCT551 (Fall 2011 Semester, USC)

[2] Signals and Systems-ELCT222 (Fall 2009 Semester, USC)

[3] Electrical Machines [including laboratory classes] (RUET, Bangladesh)

[4] Basic AC and DC Circuits [including laboratory classes] (RUET, Bangladesh)

[5] Basic Electronics [including laboratory classes] (RUET, Bangladesh)

[6] Power Electronics (RUET, Bangladesh)

[7] Feedback Control Theory (RUET, Bangladesh)

# Research Grant Obtaining and Proposal Writing Experience

[1] Obtained research grant of about 12.5 million Japanese Yen from JSPS.

[2] Involved in writing LEDAR (Laboratory for Electric Drive and Application Research) Wind-Tech Project Proposal in Canada.

[3] Currently writing grant proposals.

# Scholarly Activities

[1] **Reviewer (Transactions/Journals)**

- IEEE Transactions on Power Systems
- IEEE Transactions on Energy Conversion

- IEEE Transactions on Power Delivery
- IEEE Transactions on Sustainable Energy
- IEEE Transactions on Smart Grid
- IEEE Transactions on Industry Applications
- IEEE Transactions on Control Systems Technology
- IEEE Transactions on Industrial Electronics
- IEEE Transactions on Power Electronics
- International Journal of Electrical Power and Energy Systems
- Journal of IET Renewable Power Generation,
- Journal of IET Generation, Transmission and Distribution
- International Journal of Automation and Control (IJAAC)
- World Scientific and Engineering Academy and Society (WSEAS) Journal
- Journal of Zhejiang University-SCIENCE A
- Journal of Control Engineering Practice.

[2] **Reviewer (International Conferences)**

-Sixth International Conference on Power Electronics and Drive Systems (PEDS 2005), 28 Nov-1 Dec 2005, Kuala Lumpur, Malaysia

- IEEE CCECE (Canadian Conference on Electrical and Computer Engineering) 2008

- IEEE International Symposium on Circuits and Systems (ISCAS 2010), May 30-June 02, 2010, Paris, France.

- IEEE Electric Ship Technologies Symposium (ESTS) 2011, April 10-13, Virginia, USA.

[3] **Chairman** of the Session titled "Fuzzy control and intelligent techniques"-7th WSEAS International Conference on Power Systems, Beijing, China, September 15-17, 2007.

[4] **Selected Chairman** of the Session titled "Power Generation and Distribution-TP-PG-5"-IEEE International Conference on Industrial Technology (ICIT), Gippsland, Australia, February 10-13, 2009.

[5] **Invited Lecture** on "Wind Energy Systems", Invited by Dr. Krishna Chandra Mandal, University of South Carolina, USA, February 03, 2010 and February 10, 2011.

[6] **Special Lecture** on "Improvement of Presentation Skills for International Papers", Changwon National University, South Korea, August 22, 2007.

[7] **Special Lecture** on "International Collaboration Research for Minimization of Frequency Fluctuations of Wind Power System at Ulleong Island of South Korea", Renewable Energy Foreign Professional Workshop-2007, Ramada Plaza Hotel, Jeju Island, October 12-13, 2007.

## Membership in Professional Organizations

[1] **Senior Member**

Institute of Electrical and Electronics Engineers (IEEE), USA, June 2008 to present.

[2] **Member**

Institute of Electrical Engineers of Japan (IEEJ), 1999-2007.

[3] **Member**

Institution of Engineers in Bangladesh (IEB), 2004-2005.

## Some Service Experience

[1] **Advisory Committee Member**

Ph.D. degree, Dept. of Electrical Engineering, USC, 2009-2010.

[2] **Course Coordinator**

Undergraduate EEE Program, RUET, Bangladesh, April 2004-November 2004.

[3] **Treasurer**

EEE Society and Central Students Union, RUET, Bangladesh, 1996-1998.

## Other Skills and Information

[1] **Software Knowledge**

MATLAB/SIMULINK, ATP/EMTP, PSCAD/EMTDC, VTB, C++, FORTRAN, Microsoft Word, Microsoft Power Point, Excel, and Microcal Origin.

[2] **Industrial Training**

30 Days' industrial training taken in Regional Training Centre of Bangladesh Power Development Board (BPDB), Rajshahi, Bangladesh, at the end of 3rd year and 4th year of B.Sc. Engineering studies.

[3] Because of the reference value of my outstanding achievements, **Marquis Who's Who** has included my biographical profile in the *25th Silver Anniversary Edition* of **Who's Who in the World**, pp. 147, 2008, and also in 2009 and 2010 Editions.

[4] **Languages Known**

English, Bangla, Japanese.

[5] **Countries Visited**

USA, Canada, Korea, Japan, Finland, Belgium, Russia, Malaysia, Greece, China.