

Name: Ahmed Eid Moussa Shahin

Current Title: Associate Professor, Electrical Engineering Department, Faculty of Engineering, Mansoura University

Address: University campus, Main gate, 35516, Mansoura , Egypt.

Phone: (002)-01016362479

Email: ahshein@mans.edu.eg



FIELDS OF SPECIALIZATION

- Power Electronics and renewable energy

DEGREES

- **Ph.D.**, ENSEM-University of Lorraine, Nancy, France, 2011, Contribution to the Optimization of Structures of non-Isolated DC/DC Conversion.
- **M.S.**, University of Mansoura, Faculty of Engineering, Electrical Department, Mansoura, Egypt, 2004, Evaluation of Photovoltaic Generation Systems Using Microcontrollers
- **B.S.E.E.**, University of Mansoura, Faculty of Engineering, Electrical Department, Mansoura, Egypt, 2000

ACADEMIC AND INDUSTRIAL POSITIONS

(2001-2004), (2005-2007), Assistant lecturer, Electrical engineering dept. Mansoura university-Egypt

Responsibilities:

- Taught lectures and lab to the students at Electrical engineering dept. for all levels.
- Responsible for the course content.
- Developed lab exercise based on the course contents for electrical and electronics circuits.
- Developed solar energy lab exercise based on the course content of photovoltaic courses.
- Evaluated highly by students for stimulating independent thinking and for demonstrating an interest in them.
- Led discussion of research articles.
- Supervised semi-independent graduation projects for students.

(2011-2012), Postdoctoral fellow, Electrical engineering, ENSEM-University of Lorraine-Nancy-France

Responsibilities:

- Lab experiments of Power Electronics converters and Inverter and electrical machine.
- Lab experiments of Control Systems.

(2012-2013), Lecturer, Electrical engineering dept. Mansoura University-Egypt.

Responsibilities:

- Taught power electronics courses for graduation students.

- Taught numerical analysis courses for master and diploma students
- Supervisor for the graduation students projects.

(2013-2019), Fellow Researcher, ENSEM-University of Lorraine-Nancy-France Temporary teaching and researcher (2014-2015):

Responsibilities:

- Lab experiments of Power Electronics converters and Inverter and electrical machine.
- Lab experiments of Control Systems.
- Working for optimization, DC/AC network, power sharing, estimation, fault detection.

(2019- till now), Associate Professor, Electrical engineering dept. Mansoura University-Egypt.

Responsibilities:

- Taught power electronics courses for graduation students.
- Taught numerical analysis courses for master and diploma students
- Supervisor for master, doctoral and graduation students' projects.

RESEARCH PROJECTS

- (2011-2012), (2013-2018), Active Filter application for Fuel cells, Converters DC/DC or DC/AC, Optimization of Parallel Inverters, Power Management, Faults Detection, Parameters Estimation. ENSEM-University of Lorraine-Nancy-France

CONSULTANT

- 2020-2021, Committee member, Mansoura university, Faculty of Engineering, renew and reformation of the Sunlab at electrical department.
- 2022, Committee member, Mansoura university, Faculty of Engineering, estimation of operation and defaults diagnosis for GEMSA PV station.

AWARDS

- Certification of excellence for 5 years of studies, 2000
- Prof. Ashor Certification of excellent students, 2001
- Four years postdoctoral fellow researcher at University of Lorraine, (2011-2012), (2013-2016)
- IEEE senior member degree award in 2014.
- Associate Professor, Scientific Excellence, Mansoura University, 2019
- Certification of excellent research at GRREN- ENSEM-University of Lorraine-Nancy-France.

PROFESSIONAL RECOGNITION

- Between 2001-2007, works as demonstrator, assistant lecturer and monitor in electrical engineering department, students' graduations projects, teaching courses for the students of electrical engineering department, Faculty of engineering, Mansoura University, Egypt.
- PhD at GREEN-ENSEM-INPL-Nancy University-France, 2007-2011.

- Teaching assistant and fellow researcher (ATER) at GREEN-ENSEM- University of Lorraine-France, 2011-2012.
- Lecturer at electrical engineering dept., faculty of engineering, Mansoura University, Egypt-2012-2013.
- Fellow research at GREEN-ENSEM-INPL- University of Lorraine -France, 2013-2019.
- Associate Professor at electrical engineering dept., faculty of engineering, Mansoura University, Egypt-2019

PATENTS, PUBLICATIONS

Patents and disclosures:

Journal Papers

IEEE format

Transaction

- 1) A. Shahin, B. Huang, J.-P. Martin, S. Pierfederici and B. Davat, "New non-Linear Control Strategy for non-Isolated DC/DC Converter with High Voltage Ratio", Energy Conversion and Management, vol. 51, iss. 1, pp. 56-63, January 2010.
- 2) A. Shahin, M. Hinaje, J.-P. Martin, S. Pierfederici, S. Rael and B. Davat, "High Voltage Ratio DC-DC Converter for Fuel-Cell Applications", IEEE Transactions on Industrial Electronics, vol.57, no.12, pp.3944-3955, December 2010.
- 3) A. Shahin, R. Gavagsaz-Ghoachani, J.-P. MARTIN, S. Pierfederici, B. DAVAT and F. Meibody-Tabar, "New Method to Filter HF Current Ripples Generated by Current Fed DC/DC Converters," IEEE Transactions on Power Electronics, vol. 26, no. 12, pp. 3832-3842, December 2011.
- 4) H. Renaudineau, H. HOUARI, A. Shahin, J. Martin, S. Pierfederici, F. Meibody-Tabar, B. Gerardin, "Efficiency Optimization through Current-Sharing for Paralleled DC-DC Boost Converters with Parameter Estimation," IEEE Transactions on Power Electronics, vol.29, no.2, pp.759,767, February. 2014.
- 5) A. Shahin, H. Moussa, I. Forrasi, J.-P. Martin, B. Nahid-Mobarakeh, S. Pierfederici, , "Reliability Improvement Approach Based on Flatness Control of Parallel Connected Inverters," IEEE Transactions on Power Electronics, vol. 32, no. 1, pp. 681-692, Jan. 2017.
- 6) H. Moussa, A. Shahin, J. P. Martin, S. Pierfederici, N. Moubayed, "Optimal Angle Droop for Power Sharing Enhancement with Stability Improvement in Islanded Microgrids," in IEEE Transactions on Smart Grid, 2017.
- 7) H. Moussa, A. Shahin, J. P. Martin, B. Nahid-Mobarakeh, S. Pierfederici, N. Nazih Moubayed, "Harmonic Power Sharing with Voltage Distortion Compensation of Droop controlled Islanded microgrids," IEEE Transactions on Smart Grid , 2017.
- 8) A. Shahin, "Cross-Correlation Based Open-Switch Fault Detection Method in Parallel Inverters System", International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE), vol. 7, no. 1, Jan. 2018.
- 9) Ahmed Shahin, Jean-Philippe Martin, Serge Pierfederici "Zero-Sequence Current Based Diagnostic Method for Open-Switch Fault Detection in Parallel Inverters System", IEEE Transactions on Power Electronics, vol. 34, no. 4, pp. 3750-3764, April 2019.
- 10) Saad Eskander, Alaa Mghames, Mohamad Adel Elsayess, Hanan Hasan Al-Baihani, Ahmed Shahin, "Design of Stand-Alone Solar PV Power System Installed Atal-Mansoura-Egypt Driving 5.5 KW Elevator.", MEJ, Volume 46, Issue 3, Summer 2021, Page 11-20.
- 11) Alaa Mghames, Saad Eskander, Mohamad Adel Elsayess, Ahmed Shahin, "Design the Boost Converter of Solar Photovoltaic Power System", AJCT, vol 7 no 1 (2021): volume 7 issue i .

- 12) A. Shahin et al., "Sensorless Robust Flatness-Based Control with Nonlinear Observer for Non-Ideal Parallel DC-AC Inverters," in IEEE Access, 2022.

Conference publications:

- 1) B. Huang, A. Shahin, J.-P. Martin, S. Pierfederici and B. Davat, "High Voltage Ratio non-Isolated DC-DC Converter for Fuel Cell Power Source Applications", Power Electronics Specialists Conference, 2008. PESC 2008. IEEE, pp.1277-1283, 15-19 June 2008.
- 2) A. Shahin, R. Gavagsaz-Ghoachani, J.-P. Martin, S. Pierfederici, B. Davat and F. Meibody-Tabar, "New Method to Cancel HF Current Undulations Generated by DC/DC Converter", Energy Conversion Congress and Exposition, 2009. ECCE 2009. IEEE, pp.2847-2853, 20-24 September 2009.
- 3) A. Shahin, A. Payman, J.-P. Martin, S. Pierfederici and F. Meibody-Tabar, "Approximate Novel Loss Formulae Estimation for Optimization of Power Controller of DC/DC Converter", IECON 2010 - 36th Annual Conference on IEEE Industrial Electronics Society, pp.373-378, 7-10 November 2010.
- 4) A. Shahin, J.-P. Martin, M. Hinaje, S. Pierfederici, B. Davat, "Convertisseur statique non isolé à haut rapport d'élévation pour système pile à combustible. Technique de réduction des ondulations du courant délivré par la pile," Journées du GDR Pile à Combustible, Systèmes (PACS), Nantes, France, 7-9 June 2011.
- 5) A. Shahin, M. Zandi, M. Phattanasak, H. Renaudineau, J.-P. Martin, B. Nahid-Mobarakeh, S. Pierfederici, B. Davat, "Flatness Based Control of Hybrid Systems for Fuel Cell Applications," Power Plant and Power System Control Symposium, IFAC PPPSC 2012, 2/9/2012-5/9/2012, Toulouse, France.
- 6) H. Renaudineau, H. azeddine, A. Shahin, J.-P. MARTIN, S. Pierfederici, F. MEIBODY-TABAR, "Optimization on Current-Sharing for Paralleled DC-DC Boost Converters through Parameter Estimation," IEEE-IAS Annual Meeting, Las Vegas, NV, USA, 7-11 October 2012.
- 7) A. Shahin, Jean-Phillipe Martin, Serge Pierfederici, "Optimal Efficiency Operation of Non-Isolated DC/DC Converter for High Voltage Ratio Applications," IEEE Industrial Electronics Society (IECON 2013), Vienna, AUSTRIA, November 11-13, 2013.
- 8) R. Ghoachani, M. Zandi, M. Phattanasak, W. Kaewmanee, P. Sethakul, A. Shahin, J.-P. Martin, S. Pierfederici, B. Nahid-Mobarakeh, B. Davat, Phatiphat Thounthong, F. Meibody-Tabar, "Stability study of a nonlinear current controller via averaged model" ICTech2013, Bangkok, Thailand, 28th to 29th November 2013.
- 9) A. Shahin, H. Moussa, H. Renaudineau, A. Houari, J.-P. Martin, B. Nahid-Mobarakeh, S. Pierfederici, Adel M. Sharaf, "Optimal Efficiency Optimization through Power-Sharing for Paralleled DC-AC Inverters with Parameters Estimator", ELECTRIMACS-2014, Valencia, Spain, 19-22 May, 2014.
- 10) A. Shahin, A. Abdelhaleim, "Flatness Based Diagnostic Method of Simultaneous Circulating Current Minimization/Open-Switch Faults Detection in Parallel Inverters", IEEE- MEPCON-2015, Egypt, December 15-17, 2015.
- 11) H. Moussa, A. Shahin, F. Sharif, J.-P., Martin, S. Pierfederici, "Optimal angle droop power sharing control for autonomous microgrid," in Proc. 2015 IEEE-ECCE, Montreal, Canada, 20-24 September 2015.
- 12) A. Shahin, S. Eskander, H. Moussa, J.-P., Martin, B. Nahid-Mobarakeh, S. Pierfederici, "A new approach based on flatness control to improve reliability of parallel connected inverters," in Proc. 2015 IEEE-ECCE, Montreal, Canada, 20-24 September 2015.
- 13) A. Shahin, J.-P. Martin, S. Pierfederici and A. M. Sharaf, "Integration of Renewable Energy Sources to Wireless Charger of Electrical Vehicle," 2021 22nd IEEE International Conference on Industrial Technology (ICIT), 2021, pp. 397-402,

- 14) A. Shahin, A. Ghanem, W. Hu and S. Abulanwar, "Robust Flatness Controller for DC/DC Converter for Fuel Cell under Constant Power Load," 2022 4th Asia Energy and Electrical Engineering Symposium (AEEES), 2022, pp. 587-593

