

## C. V.

### □ Personal Information

Name: **Majid**

Last name: **Shahabi**

Date of birth: **19.08.1975**      Gender: **Male**

Place of birth: **Babol - Iran**      Nationality: **Iranian**      Marriage: **Married**

**Associate professor** in Electrical Power Engineering

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Language : Persian (*native*), English (*good*)

### □ Education

- PhD in Electrical Engineering (Power)

Tarbiat Modares University

Faculty of Electrical and Computer Engineering

Tehran - Iran      (Sep. 2003 – Sep. 2009)

PhD thesis title: “*Planning of a Decision Maker and Controller for Distribution System with DGs in Islanding Operation*”

#### **ABSTRACT:**

In this research to realize the islanded operation of a portion of distribution system that contain DGs after an event, an operation algorithm via DGs' controllers is prepared to get full benefit of DGs. In order to realize the capability of islanded operation of microgrid in a medium voltage distribution system, a protection scheme is proposed. This protection scheme can operate after fault occurrence and isolate the faulted section in minimum time. Therefore, the remaining microgrid can be operated in islanding mode. Control and power management strategies for DG units are proposed in two operation modes, i.e. grid connected mode and islanding (microgrid) mode, based on local measured parameters. With the proposed control and operation algorithm, the remaining microgrid subject to a planned islanding event or an unplanned islanding event is capable of supplying the loads with voltage and frequency within standard level.

- M. Sc. in Electrical Engineering (Power)

Tarbiat Modares University

Faculty of Engineering

Tehran - Iran      (Sep. 1998 – March 2001)

M. Sc. thesis title: “*Optimal Placement of Sub-transmission Substations*”

#### **ABSTRACT:**

Optimal locating, sizing and determining the service area of HV/MV substations is one of the principle problems in expansion of distribution systems. In our research, a method was proposed for optimal locating, sizing and determining the service area of HV/MV substations among the candidate substations in planning period. Uncertainty in forecasting of load in problem formulation is considered by an efficient fuzzy based model. Genetic algorithm (with fuzzy numbers) was applied in our proposed method for optimization. In proposed method, static,

consecutive and pseudo dynamic methods were used to expansion problem for different time interval from base year to horizon year.

➤ **Honor:** Selection of M.sc. thesis as a *superior thesis* in research field in 20<sup>th</sup> anniversary celebration of Tarbiat Modarres University. (Oct. 2002)

➤ M. Sc. Seminar title: “A study on methods to optimal locating of FACTS devices in power system”, Tarbiat Modarres University, Tehran, Iran.

- B.Sc. in Electrical Engineering (Power)  
Tabriz University  
Faculty of Engineering  
Tabriz - Iran (Jan. 1994 – May 1998)  
B.Sc. final project: “*Maintenance planning for electrical equipment in Neka steam power plant (north of Iran)*”

#### □ **Apprenticeship**

*Neka* steam power plant (north of Iran) 4\*440 MW

Electrical & instrument Dept. and Operation Dept.

➤ A special study was done on ABB excitation system. (July 1997 - Sep. 1997)

#### □ **Memberships**

- Student member of IEEE (1999-2002, 2005-2008)
- Member of IEEE (from 2009 till now)

#### □ **Journal Papers**

- 1- M. Ganjian-Aboukheili, **M. Shahabi**, Q. Shafiee, Josep M. Guerrero, “Seamless Transition of Microgrids Operation from Grid-Connected to Islanded Mode”, IEEE Transactions on Smart Grid, Vol. 11, issue 3, 2106 – 2114, May 2020.
- 2- Milad Biazar Ghadikolaei, **Majid Shahabi**, Taghi Barforoushi, “Expansion planning of energy storages in microgrid under uncertainties and demand response”, International Transactions on Electrical Energy Systems, 29: 1 - 20, 2019.
- 3- Behzad Hashemi, **Majid Shahabi**, Payam Teimourzadeh-baboli, “Stochastic based Optimal Charging Strategy for Plug-in Electric Vehicles Aggregator under Incentive and Regulatory Policies of DSO”, IEEE Transactions on Vehicular Technology, 68 : 3234 - 3245, 2019.
- 4- Mohammad Mansourlakouraj, **Majid Shahabi**, “Comprehensive analysis of risk-based energy management for dependent micro-grid under normal and emergency operations”, ENERGY, 171: 928 - 943, 2019.
- 5- M. H. Shams, **M. Shahabi**, M. E. Khodayar, “Risk-Averse Optimal Operation of Multiple-Energy Carrier Systems Considering Network Constraints”, ELSEVIER, Electric Power System Research journal, 164 (2018) 1-10.
- 6- M. H. Shams, **M. Shahabi**, M. E. Khodayar, “Stochastic Day-ahead Scheduling of Multiple Energy Carrier Microgrids with Demand Response”, ELSEVIER, Energy Journal, 155 (2018) 326-338.
- 7- M. Navaei, A.A. Abdoos, **M. Shahabi**, “A new control unit for electronic ferroresonance suppression circuit in capacitor voltage transformer”, ELSEVIER, International Journal of Electrical Power and Energy Systems, July 2018, 99 (2018) 281-289.
- 8- H. Geramifar, **M. Shahabi**, T. Barforoushi, “Coordination of energy storage systems and DR resources for optimal scheduling of microgrids under uncertainties”, IET Renewable Power Generation, Vol. 11, Issue 2, pp. 378-388 , 2017.

- 9- M. Mohammadi-Rostam, **M. Shahabi**, "Modeling induction motor for prediction of high frequency problems", Springer, Iranian Journal of Science and Technology, Transaction of Electrical Engineering, Vol. 40, Issue 1, pp. 13-22, June 2016.
- 10- R. Gholami, **M. Shahabi**, M.-R. Haghifam, "An efficient optimal capacitor allocation in DG embedded distribution networks with islanding operation capability of micro-grid using a new genetic based algorithm", ELSEVIER, International Journal of Electrical Power and Energy Systems, March 2015, 71 (2015) 335-343.
- 11- A. Babaie Lajimi, S. A. Gholamian, **M. Shahabi**, "Modeling and control of a DFIG-Based wind turbine during a grid voltage drop", ETASR, Engineering, Technology & Applied Research, Vol.1, No.5, 2011, pp.121-125.
- 12- **M. Shahabi**, M.R. Haghifam, M. Mohamadian, S.A. Nabavi-Niaki, "Microgrid dynamic performance improvement using doubly fed induction wind generator", IEEE Transaction on Energy Conversion, Vol. 24, No. 1, pp. 137- 145, March 2009.

۱۳- علیرضا صالحی نیا، محمودرضا حق‌فام و **مجید شهابی**، "کنترل توان راکتیو شبکه‌های توزیع بار متغیر در حضور منابع تولید پراکنده با استفاده از الگوریتم ژنتیک بهبودیافته"، نشریه انرژی ایران، دوره ۱۴، شماره ۳، پاییز ۱۳۹۰ (ژورنال ISC)

### □ Conference Papers

- 14- A.R. Salehinia, M. R. Haghifam and **M. Shahabi**, "Volt/Var Control in a Microgrid with Consideration of Uncertainty of Generation in Both Grid-Connected and Islanded Modes of Operation", in Proc. of CIREN Workshop, May 2012.
- 15- A.R.Salehinia, M.R. Haghifam, **M. Shahabi**, "Reactive power control in a micro-grid in both grid-connected and islanding modes of operation", in Proc. of CIREN 2011 conference, June 2011, Frankfurt, Germany.
- 16- A.R.Salehinia, M.R. Haghifam, **M. Shahabi**, F. Mahdloo, "Energy loss Reduction in distribution systems using GA-based optimal allocation of fixed and switched capacitors", in Proc. of IEEE EnergyCon 2010 conference, Bahrain.
- 17- **M. Shahabi**, M.R. Haghifam, S.A. Nabavi-Niaki, M. Mohamadian, "Dynamic behavior improvement in a microgrid with multiple DG units using a power sharing approach", in Proc. of IEEE PowerTech 2009 conference, Bucharest, Romania.
- 18- **M. Shahabi**, M.R. Haghifam, S.A. Nabavi-Niaki, M. Mohamadian, "Transient mitigation in a microgrid system using doubly fed induction wind generator", International Power System Transients Conference (IPST 2009), Japan.

۱۹- الیاس زارع آبندانشی و **مجید شهابی**، "هوشمندسازی ریزشبکه به منظور افزایش قابلیت اطمینان در حالت راه اندازی و عملکرد در حالت مستقل"، دومین کنفرانس شبکه‌های الکتریکی هوشمند، ۳-۴ خرداد ۹۱.

۲۰- الیاس زارع آبندانشی و **مجید شهابی**، "بازیابی مجدد ریزشبکه پس از وقوع خطا در شبکه اصلی در حضور یا عدم حضور بستر مخابراتی"، دومین کنفرانس انرژی‌های تجدید پذیر و تولید پراکنده ایران، ۱۶-۱۸ اسفند ۹۰.

۲۱- **مجید شهابی**، سیدعلی نبوی نیایکی و غلامحسین رضایی، "مدلسازی سیستم محدود کننده زیرتحریریک واحدهای حرارتی نیروگاه نکا و بررسی تعامل آن با عملکرد پایدارساز سیستم قدرت"، چهارمین کنفرانس نیروگاه‌های برق، ۲۵-۲۶ بهمن ماه ۹۰.

۲۲- سید مجید میری لاریمی، محسن پارسا مقدم و **مجید شهابی**، "بهره برداری بهینه از سیستم توسعه یافته تولید همزمان برق، حرارت و سرما"، بیست و ششمین کنفرانس بین المللی برق (PSC2011)، آبان ۹۰.

۲۳- سید علی نبوی نیایکی، **مجید شهابی**، غلامحسین رضایی، "بررسی و تنظیم مجدد پارامترهای پایدارساز سیستم قدرت (PSS) نیروگاه نکا و مطالعه هماهنگی عملکرد آن با محدود ساز زیرتحریریک (UEL)"، بیست و ششمین کنفرانس بین المللی برق (PSC2011)، آبان ۹۰.

۲۴- عبدالرضا بابایی لاجیمی، سید اصغر غلامیان، **مجید شهابی** و کسری دستجانی فراهانی، "ارائه مدل جدید از ژنراتورهای القایی دو سو تغذیه جهت کنترل جریان به هنگام بروز خطا"، هشتمین همایش بین المللی انرژی، ۳-۴ خرداد ۹۰.

۲۵- عبدالرضا بابایی لاجیمی، سید اصغر غلامیان، **مجید شهبابی** و کسری دستجانی فراهانی، "مدلسازی و کنترل ژنراتورهای القایی دو سو تغذیه توربین بادی در هنگام افت ولتاژ شبکه"، هشتمین همایش بین المللی انرژی، ۳-۴ خرداد ۹۰.

۲۶- محدثه باقری، عبدالرضا شیخ الاسلامی و **مجید شهبابی**، "برنامه ریزی مشارکت واحدها با در نظر گرفتن عدم قطعیت تولید توان بادی و انتشار گازهای آلاینده‌ی هوا"، نوزدهمین کنفرانس مهندسی برق ایران (ICEE2011)، اردیبهشت ۹۰.

#### □ **Research Activities and Experiences**

- Director of research project entitled "Comprehensive dynamics studies of MREC subtransmission system in presence of small scale DGs". MREC & Babol Noshirvani University of Technology.
- Research assistant in "power system stabilizer (PSS) analysis, tuning and its coordination with UEL for Neka steam power plant" project, MREC & Babol Noshirvani University of Technology (Director: *Dr. Nabavi Niaki*).
- Research assistant in "capacitor and substation placement in Mazandaran's transmission and subtransmission elec. network" project (especially for substation allocation), MREC & Tarbiat Modares University (Director: *Dr. Haghifam*).
- Research assistant in "Increasing Transmission system capability using new technologies (specially for Monitoring and Dynamic Thermal Circuit Rating method)" project, MREC & Mazandaran University (Director: *Dr. Nabavi Niaki*).
- Cooperation in "comprehensive studies of Hormozgan's 63kV electric network" project (includes Voltage stability, Capacitor placement, Reliability assessment, optimal substation location and Load forecasting), HREC & Tarbiat Modares University (Director: *Dr. Haghifam*).
- Cooperation in "comprehensive studies of Tehran South-East medium voltage distribution network" project, TREC & Tarbiat Modarres University (Director: *Dr. Haghifam*).
- Cooperation in great consulting company in power system operation, MOSHANIR Co., as a power system designer and consultant, Tehran, Iran.
- Cooperation in Cement Industry consulting company, *EHDOS Control Co.*, Tehran, Iran.

#### □ **Research Interests**

- ◆ Micro-Grid Operation and Control.
- ◆ Power System Operation and Control in Presence of Embedded Generation Resources.
- ◆ Power System Dynamics and Control.
- ◆ Expert Systems and GA based optimization methods Application in Power.

#### □ **Skills**

- ❖ Object Oriented Programming.
- ❖ MATLAB software (Simulink, Power system, Fuzzy, ... Toolboxes)
- ❖ EMTP-ATP, EMTP-RV, PSCAD/EMTDC (*Transient and dynamic analysis of power system*)
- ❖ CYME/PSAF, Power World Simulator, ETAP power station, DigSILENT power factory (*power system analysis software*)
- ❖ Good knowledge of fuzzy systems and control, genetic and heuristic based optimization algorithms.