

**Gevork B. Gharehpetian, Ph.D.**  
**Professor**

Amirkabir University of Technology  
(Tehran Polytechnic)  
Electrical Engineering Department  
No. 424, Hafez Ave., 15914 Tehran, Iran

Tel: (+98) 21 6646 6009, (+98) 21 6649  
8442 or 3

Tel (direct ): (+98) 21 6454 3341

Fax: (+98) 21 6640 6469

E-mail: [grptian@aut.ac.ir](mailto:grptian@aut.ac.ir)

<http://ele.aut.ac.ir/~gharehpetian>



**Biography:** **G. B. Gharehpetian** received his BS, MS and Ph.D. degrees in electrical engineering in 1987, 1989 and 1996 from Tabriz University, Tabriz, Iran and Amirkabir University of Technology (AUT), Tehran, Iran and Tehran University, Tehran, Iran, respectively, graduating all with First Class Honors. As a Ph.D. student, he has received scholarship from DAAD (German Academic Exchange Service) from 1993 to 1996 and he was with High Voltage Institute of RWTH Aachen, Aachen, Germany.

He has been holding the Assistant Professor position at AUT from 1997 to 2003, the position of Associate Professor from 2004 to 2007 and has been Professor since 2007. The power engineering group of AUT has been selected as a Center of Excellence on Power Systems in Iran since 2001. He is a member of this center.

He was selected by the Ministry of Science Research and Technology (SMRT) as the distinguished professor of Iran, by IAEEE (Iranian Association of Electrical and Electronics Engineers) as the distinguished researcher of Iran, by Iran Energy Association (IEA) as the best researcher of Iran in the field of energy, by the MSRT as the distinguished researcher of Iran, and by The Academy of Science of the Islamic Republic of Iran as the distinguished professor of electrical engineering and was awarded the National Prize in 2008, 2010, 2018, 2018 and 2019, respectively. Based on the Web of Science database (2005-2015), he is among world's top 1% elite scientists according to ESI (Essential Science Indicators) ranking system.

Prof. Gharehpetian is distinguished, senior and distinguished member of CIGRE, IEEE and IAEEE, respectively. Since 2004, he has been the Editor-in-Chief of the Journal of IAEEE.

He is the author of more than 1100 journal and conference papers. His teaching and research interest include Smart Grid, Microgrids, FACTS and HVDC Systems, Monitoring of Power Transformers and its Transients.

**Education:**

- Ph.D. in Electrical Engineering, Tehran University, Tehran, IRAN, April 1996
- M.S. in Electrical Engineering, Amirkabir University, Tehran, IRAN, Sep. 1989
- B.S. in Electrical Engineering, Tabriz University, Tabriz, IRAN, Feb. 1987

**Academic Positions:**

- Professor (since 2007) AUT, Electrical Engineering Department
- Associate Professor (2004 - 2007) AUT, Electrical Engineering Department
- Assistant Professor (1997 - 2003) AUT, Electrical Engineering Department
- Lecturer (1989–1996), Amirkabir University of Technology (AUT), Electrical Engineering Department

**Teaching:**

Undergraduate Courses: Future Power System Elements, Electric Machinery, Power Plants and Power Electronics

Graduate Courses: Microgrids and Smart Grid, Distributed Generation, HVDC Transmission, FACTS Devices and Power System Transients

**Research Interests:**

Smart Grid, DGs, Monitoring of Power Transformers, FACTS Devices, HVDC Systems, Power Electronic Converters, Power System Transients

**Languages:**

Armenian: Native and bilingual proficiency

Persian: Bilingual proficiency

German: Professional working proficiency

English: Professional working proficiency

**Executive Positions:**

- Vice-Dean for Research and Postgraduate Studies, Electrical Engineering Department, AUT (2018-present)
- Vice President for Research, Niroo Research Institute ([NRI](#)), Ministry of Energy (Oct. 2014-2017)
- Director of Grand (National) Project, Iranian Smart Grid at AUT (Sep. 2012-present)
- Director of Industrial Relation Office of AUT (Nov.2005-2008)
- Head of Iran Grid Secure Operation Research Center at AUT (Oct. 2005-present)

- Director of Electrical Engineering Committee of the [International Khwarizmi Award](#), Iranian Research Organization for Science and Technology (IROST), Ministry of Science Research and Technology (2005)
- Research Deputy of [Center of Excellence on Power Systems](#) at AUT (April 2004-2006)
- Head of Power Engineering Group, Electrical Engineering Department, AUT (Oct. 2001-Oct. 2003)

### **Selected Professional Experiences:**

- Member of board of trustee, Niroo Research Institute (NRI), Ministry of Energy (2014-2018)
- Member of education, research and technology council, Ministry of Energy (2013-present)
- Member of research committee of Iran Power Development Co. ([IPDC](#)) (2011-2015)
- Member of central research committee of Iran Grid Management Co. ([IGMC](#)) (2006-2008)
- Member of research council of Zob-e Ahan Co. (2006-2008)
- Scientific staff member of Tehran Regional Electric Co. ([TREC](#)) (April 2005-Dec. 2017)
- Member of [Center of Excellence on Power Systems](#) (since 2001)
- Senior councilor of [Iran Transformer Research Institute](#) (ITRI) (1999-2005)
- Member of central research committee of Tehran Regional Electric Co. ([TREC](#)) (1999-2004) (2007-2017)
- Member of research council of power generation department of Niroo Research Institute ([NRI](#)), Iran Energy Ministry (1999-2004)
- Senior researcher and project manager, Niroo Research Institute ([NRI](#)) (1998-2006)

### **Academic Awards and Honors:**

- Distinguished Professor of Electrical Engineering selected by [The Academy of Sciences of the Islamic Republic of Iran](#) (2019)
- Distinguished researcher of Iran selected by the Ministry of Science, Research and Technology ([SMRT](#)) and awarded by the Vice-president of Iran (2018)
- Best researcher and prize winner all over Iran in the field of energy, selected by Iran Energy Association ([IEA](#)) (2018)
- Among world's top 1% elite scientists according to ESI (Essential Science Indicators) ranking system based on the ISI Web of Science database (2005-2015)
- Distinguished researcher and prize winner all over Iran, selected by [Iranian Association of Electrical and Electronics Engineers](#) (IAEEE) (2010)
- Distinguished professor and prize winner all over Iran, selected by [MSRT](#) and awarded by the President of Iran (2008)
- Scholarship from German Academic Exchange Service ([DAAD](#)), as a visiting Professor in the University of Stuttgart, Stuttgart, Germany (Summer 2003)
- Scholarship from DAAD, as a visiting Professor in the University of Stuttgart, Stuttgart, Germany (Summer 2000)

- Scholarship from DAAD, as a Ph.D. Student in RWTH Aachen, Aachen, Germany (1993-1996)
- First rank among graduated Ph.D. students, Tehran University, in 1996
- First rank among graduated M.S. students, Amirkabir University of Technology (Tehran Polytechnic), in 1989
- First rank among graduated B.S. students, Tabriz University, in 1987

### **Patents:**

- [26] Image Possessing Procedure for Simultaneous and Accurate Detection of a Few Radial Mechanical Defects in HV Transformer Winding, Registers under No. 97948 in Iran, Feb. 16, 2019
- [25] Sinusoidal Sending Wave Step by Step Procedure in Hyperboloid Method for Detecting Power Transformer HV Winding Radial Defects, Registers under No. 95224 in Iran, March 5, 2018
- [24] Power Transformers Winding Earth Fault Detection System Based on Magnetic Field Measurement, Registers under No. 95021 in Iran, Feb. 17, 2018
- [23] Dielectric Window for Transformer Winding Radar Imaging, Registers under No. 95040 in Iran, Feb. 17, 2018
- [22] Detection of Radial Deformations of Transformers, Registered under No. US 2017-0356733 A1, USPTO, in USA, Dec. 14, 2017
- [21] Sinusoidal Sending Wave Step by Step Variations Procedure for Detection of Power Transformer HV Winding Convex and Concave Mechanical Defects, Registered under No. 91648 in Iran, March 15, 2017
- [20] Hardware System for Reduction of Power Transformer Winding Axial Displacement Wrong Detection Due to PD During Radar Imaging, Registered under No. 90943 in Iran, Jan. 10, 2017
- [19] Automatic Three Phase Current Compensator System Based on Loads Unbalance Recording, Registered under No. 90010 in Iran, Oct. 1, 2016
- [18] Buck-Boost DC-DC Converter with Reduced Voltage Stress, Registered under No. 89543 in Iran, Aug. 9, 2016
- [17] Single Switch DC/DC Converter with Capability of Voltage Increase and Decrease, Registered under No. 89515 in Iran, Aug. 3, 2016
- [16] Fault Detection and HV Transformers Radial Deformation Detection Using Magnetic Fields of Their Winding, Registered under No. 89495 in Iran, Aug. 3, 2016
- [15] Parallel Single Phase Active Filter to Compensate Different Types of Disturbances in Different Operating Conditions, Registered under No. 89416 in Iran, July 25, 2016
- [14] Presentation of New Structure of Modules with 3 Voltage Sources and 4 Switches for Asymmetric/Symmetric Multilevel Voltage Source AC/DC Converters in Order to Reduce Converter Elements, Registered under No. 87819 in Iran, March 1, 2016
- [13] Device of Symmetric/Asymmetric Multi-level Voltage Source Inverter Based on Interleaved 3-Voltage Source and 4-Semiconductor Switch Modules in Order to Reduce Number of Used Devices, Registered under No. 87155 in Iran, Nov. 8, 2015
- [12] Symmetric and Asymmetric Multi-level Voltage Source Inverters Based on 4-Voltage Source and 6-Switch Modules in Order to Reduce Number of Power Electronic Devices, Registered under No. 87157 in Iran, Nov. 8, 2015

- [11] Measurement of Electrical and Magnetic Fields of Transformer HV Winding in and near Tank for Axial Displacement Detection, Registered under No. 85849 in Iran, 2015
- [10] Sensor with Mach–Zehnder Interferometer Fiber Optic Interferometer for Axial Displacement Measurement of Power Transformers, Registered under No. 83503 in Iran, Aug. 6, 2014
- [9] Ferroresonance Overvoltage Clipping Circuit Including Metal-oxide Arresters, Registered under No. 77241 in Iran, Oct. 17, 2012
- [8] Software and Hardware Setup to Measure Axial Displacement of Transformer Winding using UWB Waves in Time Domain, Registered under No. 76808 in Iran, Sep. 18, 2012
- [7] Transformer Winding Radial Deformation Estimation System based on Scattering Parameters Measurements, Registered under No. 76668 in Iran, Sep. 9, 2012
- [6] Mechanical Defects Allocation in Transformer Windings Using Radar Imaging, Registered under No. 390090380 in Iran, Jan. 31, 2012
- [5] Flexible distributed generation interfacing inverter with sliding mode controller, Registered under No. 65010 in Iran, June 6, 2010
- [4] Power supply with a very high power factor, Registered under No. 56622 in Iran, Jan. 31, 2009
- [3] Bidirectional power electronic transformer with maximum power point tracking capability for induction heating applications, Registered under No. 52876 in Iran, Sep. 17, 2008
- [2] High current transformer with equal current distribution in parallel windings, Registered under No. 38305092 in Iran, July 31, 2004
- [1] Passive 1 phase to 3 phase converter, Registered under No. 38012011 in Iran, Feb. 25, 2002

### **Journals Editorial Board Membership:**

#### ***International Journals***

- Editorial board of Journal of Energy and Sustainable Development, Bio-Byword Publication (Jan. 2019 - present)
- Advisory editorial board of International Journal of Electric Power & Energy Systems (JEPE), Elsevier Publications (Nov. 2016- present)
- Editorial board of International Journal of Energy and Environmental Engineering (IJEEE), Associate Editor (2015-present)
- Editorial board of Scientific World Journal, Lead Guest Editor of Special Issue on Smart Grid (2014-2015)
- Editorial board of Journal of Intelligent and Fuzzy Systems (JIFS), Associate Editor (2014-present)
- Editorial board of International Journal of Engineering, Science and Technology (IJEST) (2010- 2012)

#### ***National Journals***

- Editorial board member of Iranian Journal of Power Engineering, Birjand University (2015- present)

- Editorial Board of Journal of Electric Power System Engineering of Azarbaijan Shahid Madani University (2015-present)
- Editorial board of Journal of Operation and Automation in Electrical Engineering of Mohaghegh Ardabili University (2014-present)
- Editorial board member of Journal of Research in Quality, Iranian Society for Quality (2013-present)
- Editorial board member of Journal of Malek Ashtar University (2011- present)
- Editorial board member of Journal of Electrical Engineering, Ferdowsi Mashad University (2011- present)
- Editorial board member of Journal of Energy Management of Kashan University (2010-present)
- Editorial board member of Electrical Engineering Journal of Tabriz University (2009-present)
- Editorial board member of Journal of IAEEE (April 2004- present)
- Editor-in-Chief of Journal of IAEEE (Jan. 2004-present)
- Editorial board member of Bargh Journal (Journal of NRI) (1998-Present)

### **Scientific Societies Membership:**

- IRASA ([Iranian Academics and Specialists Association in Germany](#)), member (since 2014), member of board of directors (since 2016)
- IEEE Iran Section Power Chapter, founder member, secretary (Dec. 2013-June 2015), chair (since July 2015)
- Iranian Power Electronic Association (IPEA), founder member
- Iranian Productivity Association for Power Industry, founder member
- IAEEE ( [Iranian Association of Electrical and Electronics Engineers](#)), member (since 1992), senior member (since 2004), distinguished member (since 2011)
- IAEEE central board member (April 2003-April 2005) (April 2007-present)
- IEEE, Power Energy Society, member (since 2000) and senior member (since 2008)
- CIGRE (International Council on Large Electric Systems), [Iran branch](#), member (since 2008), distinguished member (since 2018)
- [Iranian Society of Advancement of Industry-Academia Collaboration](#), member (since 2007) and member of central board and secretary (2011- 2016)
- Iranian Wind Energy Association (IRWEA), founder member, member (since 2011) and member of central board (2014-2017)
- Iranian National Electrotechnical Committee (INEC), member (2011-2015)
- Iranian Society of Smart Energy Grids, founder member, member (since 2012) and member of central board (2012-2017), vice-chair (2018-present)

## **Funded Industrial Projects**

[1] “Transmission Losses Reduction Using Phase Shifting Transformers with Load Balancing in Parallel Lines”, Tehran Regional Electric Company, Ministry of Energy, Iran, 1998-2000 (Project Manager)

[2] “Optimization of Electrical Energy Consumption in Auxiliary Service System of Steam Power Plants”, NIROO Research Institute, Ministry of Energy, Iran, 1998-2000 (Project Manager).

[3] “Electrical Lab. Planning for Power Plants”, NIROO Research Institute, Ministry of Energy, Iran, 2000-2001 (Project consultant).

[4] “National and Optimal Design of Auxiliary Service Systems for Iran’s Steam Power Plants”, NIROO Research Institute, Ministry of Energy, Iran, 2000-2002 (Project Manager).

[5] “Technical and Economical Evaluation of Different Flow Control Methods of Power Plants Electro-pumps, Basic Studies”, NIROO Research Institute, Ministry of Energy, 2001-2001 (Project consultant).

[6] “PST Locating in Iranian Transmission System for Transmission Losses Reduction Under Off-peak Steady State Condition”, Tehran Regional Electric Company, Ministry of Energy, Iran, 2000-2002 (Project Manager).

[7] “Comparison of Custom Power Devices Considering Tehran Distribution System Specifications”, Tehran Regional Electric Company, Ministry of Energy, Iran, 2002-2003 (Project Manager).

[8] “Determination of Important Indexes for X7 Body Shop, Power Quality Point of View”, Iran-Khodro Company, Industries Ministry, Iran, 2002 (Project Manager).

[9] “Reduction of Electrical Energy Consumption in Auxiliary Service System of Bisotoun Steam Power Plants”, Gharb Regional Electric Company, Ministry of Energy, Iran, 2002-2003 (Project consultant).

[10] “Study on Voltage Problems of Yazd1 and Yazd2 Buses and Suggestion of Improvement methods”, Yazd Regional Electric Company, Ministry of Energy, Iran, 2002 (Project Manager).

[11] “Best Design of Parallel Disks of High Current Transformer Winding, Considering Current Distribution in Parallel Disks”, Research Deputy of Amirkabir University of Technology, Tehran, Iran, 2002 (Project Manager).

[12] "Diversity Management for Different Flow Control Methods of Power Plants Pumps and Fans", Tavanir Company, Ministry of Energy, 2004-2006 (Project consultant).

[13] "PST Locating in Transmission System, Considering Normal and Contingency Operation Conditions", Tehran Regional Electric Company, Ministry of Energy, Iran, 2004-2006, (Project Manager).

[14] "Feasibility Study of On-line Measurement of Transformer Winding Displacement Using UHF waves", Iranian Research Organization for Science and Technology, Ministry of Science Research and Technology, Iran, 2005 (Project Manager).

[15] "Feasibility, Technical and Economic Study of Amorphous Distribution Transformer Production in Iran", Tavanir Co., Ministry of Energy, Iran, 2005 (Project consultant)

[16] "Short Cable Application Impact on Power Transformer Transients", Tavanir Company, Ministry of Energy, Iran, 2005 (Project Manager)

[17] "AUT Internship Research Projects", Iran Khodro Co., Iran, Industries Ministry, Iran, 2005 (Project Manager)

[18] Consulting in the Field of Secure Operation of Iranian Power Systems, Iran Grid Management Company (IGMC), Ministry of Energy, Iran 2005-2010 (Project Manager)

[19] "AUT Small Business Development Center (SBDC) Establishment", Iranian Industries Development and Renovation Organization (IMIDRO), Industries Ministry, Iran, 2006 (Project Manager)

[20] "Feasibility Study of PST application on Dogonbadan-Kazeroon-Malekmakan Transmission Linel", Iran Grid Management Company (IGMC), Ministry of Energy, Iran, 2007-2008 (Project Manager)

[21] "Determination of Strategic Sub-Regions of Transmission and Sub-Transmission Network of Tehran Regional Electric Company in order to Limit the Short Circuit Current Level", Iran Grid Management Company (IGMC), Ministry of Energy, Iran, 2009 (Project Manager)

[22] "CHP-DG Development Studies for Power Sources Greater Than 1MW", Iran Energy Efficiency Organization (IEEO - SABA), Ministry of Energy, Iran, 2010 (Project Manager)

[23] "Measurement of Radial Deformation and Axial Displacement of Transformer Winding On Prototype Using Electromagnetic Waves", Tehran Regional Electric Company (TREC), Ministry of Energy, Iran, 2009-2011 (Project Manager).

[24] "Transmission System Transients Studies of Hormozgan Regional Electric Company", Hormozgan Regional Electric Company (HREC), Ministry of Energy, Iran, 2009-2011 (Project Manager).

[25] "Techno-Economical Studies of HVDC System for Iranian Transmission System", Iran Grid Management Company (IGMC), Ministry of Energy, Iran, 2010-2012 (Project Manager).

[26] "Research on Azarbayjan and Ayat Substations Transients and Suggestion of Solutions to Reduce Side-Effects on Transformers and Solution Extending for Substations of Tehran Regional Electric Company (TREC)", Tehran Regional Electric Company (TREC), Ministry of Energy, Iran, 2011-2013 (Project Manager).

[27] "Simulation Studies of Protection System of Kaveh Substation in Steady State and Transient Conditions and Suggestion of Solutions to Improve Protection System of Existing 20/63kV Kaveh Substation after Connection of 2x25MVA DGs", Hormozgan Regional Electric Company (HREC), Ministry of Energy, Iran, 2011-2012 (Project Manager).

[28] "Design and Construction of Grid-Connected 3kW Wind Turbine Simulator Coupled to AEPMSC Generator", Thermal Power Plants Holding Co., Iran, 2014-2017 (Project Manager)

[29] "Design and Prototyping of a Flywheel Energy Storage System for Instantaneous Frequency Control of Power Grid", Tavanir Co., Ministry of Energy, Iran, 2015-2017 (Project Manager)

[30] "Modeling of Considerations of Wind Farms Interconnection to Iranian Grid", Tavanir Co., Ministry of Energy, Iran, 2015-2017 (Project Manager)

[31] "Study on Overvoltages Applied to Arc Furnace Transformers Primary Path and RC Filters to Suggest Solution for Their Removal", Mobarakeh Steel Company, Industries Ministry, Iran, 2014-2017 (Project Manager)

[32] "Simultaneous Diagnosis of Mechanical Deformation and Partial Discharge in Power Transformer Winding Using UWB Waves", Tehran Regional Electric Company (TREC), Ministry of Energy, Iran, 2014-2017 (Project Manager).

## **Current Projects**

[33] "Iranian Smart Grid and Prototype Implementation", Science, Research and Technology Council of Iran, Iran, 2012-present (AUT Project manager)

## *Invited key Notes*

- [1] G. B. Gharehpetian, “*On-line Monitoring of Power Transformer Mechanical Defects Using UBW Electromagnetic Waves*”, Invited paper, 20th Iranian Conference on Electrical Engineering, Tehran, Iran, 15-17 May 2012
- [2] G. B. Gharehpetian, “*Smart Distribution Systems*”, Invited paper, First Isfahan Electrical Engineering National Conference (IECC), Isfahan, Iran, 3-4 Oct. 2012
- [3] G. B. Gharehpetian, “*Real-Time Simulation*”, Invited paper, Modeling and Simulation of Power Plant Equipments, Karaj, Iran, 24 Oct. 2012
- [4] G. B. Gharehpetian, “*Smart Microgrids*”, Invited paper, 21st Iranian Conference on Electrical Engineering, Mashhad, Iran, 14-16 May 2013
- [5] G. B. Gharehpetian, “*Transformation of Ordinary Grids to Smart Grids through Microgrids*”, Invited Speaker, Engineering Day, Tabriz, Iran, Feb. 24, 2014
- [6] G. B. Gharehpetian, “*Microgrids, Entering Port to Smart Grids*”, Invited Paper, First International Congress on Technology, Communication and Knowledge, ICTCK 2014, (ICCECSG 2014), Mashhad, Iran, 26-27 Nov. 2014
- [7] G. B. Gharehpetian, “*Missed Elements of Smart Microgrids*”, Invited paper, Smart Grid Conference 2014 (SGC'14), Tehran, Iran, Dec. 9-10, 2014
- [8] H. Karami Porzani, G. B. Gharehpetian, Y. Norouzi, M. S. Akhavan Hejazi, “*Feasibility Study on On-line and Simultaneous Transformer Winding Radial Deformation and PD Localization Using Electromagnetic Waves*”, Invited paper, 2nd International Transformer Conference and Exhibition, ITCE 2015, Tehran, Iran, 1-2 Sep., 2015
- [9] M. Ghorat, B. Zaker, G. B. Gharehpetian, “*Advanced Technologies for Iran Future Power System*”, Invited paper, 2nd International Conference and Project Meeting on Advanced Science and Technologies for Sustainable Development in Iran (STSD 2015), Berlin, Germany, 8-12 Sep. 2015
- [10] G. B. Gharehpetian, “*Novel Methods of Power Transformer Monitoring, Interdisciplinary Techniques*”, Invited paper, Future Horizons of Electrical and Computer Engineering, Seminar of The Academy of Sciences of Iran, Tehran, Iran, 29 Feb. 2016
- [11] G. B. Gharehpetian, “*Flywheel Application for Frequency Regulation of Microgrids: Opportunities and Challenges*”, Invited paper, 24th Iranian Conference on Electrical Engineering, Shiraz, Iran, 10-12 May 2016
- [12] G. B. Gharehpetian “*Fiber Optic Sensor Application for PD Detection*”, Invited paper, 3rd International Transformer Conference and Exhibition, ITCE 2016, Tehran, Iran, September 6-7, 2016
- [13] G. B. Gharehpetian “*Application of Flywheel Storage System for Frequency Control of Wind Turbines and Microgrids*”, Invited paper, 3rd National Conference on Energy New Technologies, Mashhad, Iran, Jan. 4-5, 2017

[14] G. B. Gharehpetian "*Power Transformer Winding Mechanical Defects Classification Based on Sampled Differential Currents*", Invited paper, 4<sup>th</sup> International Transformer Conference and Exhibition, ITCE 2018, Tehran, Iran, 23-24- Jan., 2018

[15] G. B. Gharehpetian "*Wind Turbines and Microgrids Frequency Control Using Flywheels*", Invited paper, 4<sup>th</sup> International Conference of Technology and Energy Management , Tehran, Iran, Jan. 30-31, 2018

[16] G. B. Gharehpetian, "*Role of ESSs in Smart Microgrids*", Smart Grid Conference, SGC 2018, Sanandaj, Iran, Nov. 28-29, 2018

[17] G. B. Gharehpetian, "*IoT-based Smart Energy Hubs*", 5<sup>th</sup> International Conference on Technology and Energy Management, Tehran, Iran, 19-20 Feb., 2019

## **Books**

- [1] G. B. Gharehpetian, H. Tadeousion “*Basic and Numerical Mathematic*”, Book, Persian Translation (from English text), 1991, Tehran, Iran
- [2] G. B. Gharehpetian, “*Modellierung von Transformatorwicklungen Zur Untersuchung Schnellveränderlicher Transienter Vorgänge*”, Dissertation, Publication of University of Tehran, 1996, ISBN 964-0309355-X
- [3] H. Alipour, G. B. Gharehpetian, “*Power System Transient Studies Using EMTP*”, Book, Amirkabir University Publication, 1-st Edition 1999, 2-ed Edition 2001, ISBN: 964-463-051-3 (in Persian)
- [4] M. Jourabian, G. B. Gharehpetian and D. Mirabassi, “*Flexiable AC Transmission Systems, Concepts and Applications*”, Book, Chamran University Publication, 1-st Edition 2006, ISBN: 978-964-8659-48-1, 2-ed Edition 2010, ISBN: 978-600-141-000-0 (in Persian)
- [5] G. B. Gharehpetian, A. Ghanizadeh, “*Using EMTP-RV*”, Nahr Danesh Publication, 1-st Edition 2012, 2-ed Edition 2013, ISBN: 978-600-5714-13-5 (in Persian)
- [6] H. R. Baghaee, M. Mirsalim and G. B. Gharehpetian, “*Application of Harmony Search Algorithm in Power Engineering*”, in “*Search Algorithms for Engineering Optimization*”, Taufik Abrão, Publication of InTech, 2013, pp. 201-220, ISBN 978-953-51-0983-9
- [7] M. Jourabian, G. B. Gharehpetian and H. Ghasemi “*Microgrids and Active Distribution Networks*”, Book, Persian Translation (from English text), Chamran University Publication, 2013, ISBN: 978-600-141-124-3 (in Persian)
- [8] M. Jourabian, G. B. Gharehpetian and M. Khalili Fard, “*Concepts and Applications of Flexiable AC Transmission Systems (FACTS) in Transmission and Distribution Systems*”, Book, Niaz Danesh Publication, 1-st Edition 2015, ISBN: 978-600-7724-08-8 (in Persian)
- [9] M. Mokhtari and G. B. Gharehpetian, “*Grounding Systems Transients, Methodology and Modeling*”, LAP Lambert Academic Publishing, 2017, ISBN 978-3-659-88273-9
- [10] G. B. Gharehpetian and S. Mohammad Mousavi Agah, “*Distributed Generation Systems, Design, Operation and Grid Integration*”, Butterworth-Heinemann Publishing, 2017, ISBN 978-0-12-804200-3
- [11] G. B. Gharehpetian, H. Karami, S. A. Ahmadi, “*Optimal Design and Evaluation of Hybrid Energy Systems Using HOMER*”, Nahr Danesh Publication, 2017, ISBN: 978-600-5714-27-2 (in Persian)

[١٢] G. B. Gharehpetian, M. S. Naderi, H. Modaghegh and A. R. Zakariazadeh, "*Iranian Smart Grid Road Map and Iranian National Advanced Metering Infrastructure Plan (FAHAM)*", in "*Application of Smart Grid Technologies, Case Studies in Saving Electricity in Different Parts of the World*", Lisa Lamont and Ali Sayigh, Academic Press, Elsevier, 201٨, Section 1, ISBN 978-012-80-3128-5

[13] G. B. Gharehpetian, M. Zolfaghari, A. A. Khodadoost Arani, "*Advanced Electrical Drives - Analysis, Control and Modeling Using MATLAB/SIMULINK*", Book, Persian Translation (from English text), Amirkabir University Publication, 2018, ISBN: 978-964-463-724-7 (in Persian)

[14] G. B. Gharehpetian, M. Shahidehpour, B. Zaker, "*Smart Grids and Microgrids*", Book, Amirkabir University Publication, 2018 Summer, ISBN: 978-964-463-723-0 (in Persian)

[15] G. B. Gharehpetian, M. Oloomi Baygi, I. Nikoofekr, M. M. Arabshahi, M. Khatami, "*Distributed Generation Fundamentals*", Book, Amirkabir University Publication, 2018 Fall, ISBN: 978-964-469-738-4 (in Persian)

## *More than 400 Journal Papers*

- [1] G.B. Gharehpetian, S.M. Kouhsari “*AC-DC Load Flow*”, Amirkabir Journal, of Science and Technology No. 15, 1990 ( in Persian).
- [2] G. B. Gharehpetian, H. Mohseni, K. Lux, “*Overvoltage Studies of Transformer Windings Using Monte Carlo Simulation of Lightning*”, Journal of Technical Faculty of Tehran University, No. 55, 1995, pp. 73-86 ( in Persian)
- [3] G.B. Gharehpetian, H. Mohseni and K. Moeller, “*Hybrid Modeling of Inhomogeneous Transformer Windings for Very Fast Transient Overvoltage Studies*”, IEEE Trans. on Power Delivery, Vol. 13, No. 1, Jan. 1998, pp. 157-163 (ISI-ranked)
- [4] G.B. Gharehpetian, A. Der Minasian, “*AC/DC Load Flow in Metro Power System*”, Bargh Journal, Niroo Research Institute of Energy Ministry , No. 25, 1998 (in Persian)
- [5] M. Farnad, S. Raie, G.B. Gharehpetian, H. Mohseni “*Price Determination of Losses in Iranian Power System Considering Power Plant Contribution in Generation and Different Fuel Consumption*”, Bargh Journal, NIROO Research Institute of Energy Ministry, No. 28, Winter 1999 ( in Persian)
- [6] G.B. Gharehpetian, et. al. ( FACTS Working Group), “*Flexible AC Transmission System and it's Application in Iranian Power System*”, Bargh Journal, NIROO Research Institute of Energy Ministry, No. 29, Spring 2000 (in Persian)
- [7] R. Barati, G.B. Gharehpetian, E. Sadeghian, S. Sorooshian, A. H. Miragha, “*Suggestion of Methods for Energy Consumption Minimization in Auxiliary Service System of Steam Power Plants and Their Evaluation in NEKA Power Plant*”, Bargh Journal, NIROO Research Institute of Energy Ministry, No. 30., Winter 2000-2001 (in Persian)
- [8] E. Sadeghian, A. Dindar, G.B. Gharehpetian, “*Efficiency and Performance Improvement of Power Plants Electro-pumps With Different Flow Control Methods*”, Bargh Journal, NIROO Research Institute of Energy Ministry, No. 32, Summer 2001 (in Persian)
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