

CURRICULUM VITAE

1. PERSONAL DATA

Name: Hegazy Rezk Ahmed

Date of Birth: 15.10.1979

Place of Birth: Al Minia- Egypt

Nationality: Egypt

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National/Iqama ID: 2422600847

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2. ACADEMIC/PROFESSIONAL PARTICULARS

(a) Field of Specialization:

Major Field of Specialization: *Electrical Power Engineering*

Fine Field Specialization: *Renewable Energy*

(b) Academic Qualifications

- **Ph. D–** Power Plants based on Renewable Energy, *April 2012, National Research University* (Moscow power Engineering Institute), Moscow, Russia. **Thesis Title:** “Optimal parameters determination of stand-alone photovoltaic power system”.
- **Master of Engineering–** Electrical Power Engineering, June 2006, Faculty of Engineering, Minia University, Egypt. **Thesis Title:** "Applications of power electronics in interfacing wind turbine generator with photovoltaic to build hybrid electric power system".

(c) Academic Honors and Awards

	Academic Honors and Awards	Moht/Tear
1	Distinguished Publishing Award- Prince Sattam University	May/2021
2	Most Cited Research.Award- Prince Sattam University	Sept./2020
3	International Publications Award Minia University (Egypt)	Sept./2020
4	Award for Young Research's in the field of artificial intelligence- Federation of Arab Scientific Research Councils	Sept. /2019
5	International Publications Award Minia University (Egypt)	May/2019

6	Outstanding Performance Award- Collage of Engineering at Wadi Addwaser, Prince Sattam University	Sept./2018
7	Best Researcher Award- Collage of Engineering at Wadi Addwaser, Prince Sattam University	June/2018
8	Outstanding Performance Award - Collage of Engineering at Wadi Addwaser, Prince Sattam University	Sept./2017
9	International publications Award Minia University (Egypt)	May/2018
10	Outstanding reviewer- Solar Energy Journal-within the top 10 th percentile of reviewers for the Journal	June/2017
11	International Publications Award Minia University (Egypt)	May/2017
12	International Publications Award Minia University (Egypt)	May/2016
13	International Publications Award Minia University (Egypt)	May/2015
14	International Publications Award Minia University (Egypt)	May/2014
15	Doctoral Scholarship from the Egyptian ministry of higher education to do Ph.D. study in Renewable Energy. Dec. 2008 – April 2012	Dec/2012
16	Postdoctoral Scholarship from the Egyptian ministry of higher education to do research in field of Renewable Energy. Dec. 2014 – June 2015	Dec/2014

(d) Membership of Professional Bodies

ISES, International Solar Energy Society, *Joining Date* Aug. 2017.

EES, Egyptian Engineers Syndicate, *Joining Date* 2002

(e) Language Proficiency

- Arabic **Mother tongue**
- English **Very good**
- Russian **Very good**

3. CAREER DETAILS

(a) Academic Positions Held

- **Teaching Assistant** in Electrical Engineering Department, Faculty of Engineering, Minia University, *Egypt. Period* (November 2001-June, 2006)
- **Assistant Lecturer** in Electrical Engineering Department, Faculty of Engineering, Minia University, *Egypt. Period* (June2006 - Aug. 2008)
- **PhD Student** in Renewable Energy Department, Moscow power Engineering Institute., *Moscow*, Russia, *Period* (Aug. 2008 to May 2012)
- **Assistant Professor** in Electrical Engineering Department, Faculty of Engineering, Minia University, *Egypt. Period* (June 2012- December 2014)

- **Postdoctoral Research Fellow** in UNESCO Chair “Ecologically Clean Engineering”, Institute of Environmental Engineering, *Moscow State University of Mechanical Engineering*, Russia. *Period* (December 2014- June 2015)
- **Visiting Professor** in Department of Electrical Engineering, Faculty of Information Science and Electrical Engineering, *Kyushu University*, Fukuoka, *Japan*. *Period* (June 2014- April 2015)
- **Assistant Professor** in Electrical Engineering Department, Faculty of Engineering, Minia University, *Egypt*. *Period* (April 2015- Aug. 2017)
- **Associate Professor** in Electrical Engineering Department, Faculty of Engineering, Minia University, *Egypt*. *Period* (Aug. 2017- present)
- **Assistant Professor** in Electrical Engineering Department, Collage of Engineering at Wadi Addwaser, Prince Sattam University, *Saudi Arabia*. *Period* (Oct 2016- present)

(b) Professional/Industrial Positions Held

Member of Consult and Engineering Studies Center, Minia University Egypt. Period (May 2012 -2016 October)

Consultant, Solar Energy Department, Sun Way Egypt, Egypt, Period: (December 2014- June 2015)

Member and coordinator of *Community Service Unit*, Collage of Engineering at Wadi Addwaser, Prince Sattam University, Saudi Arabia. *Period* (Oct 2016- Sept 2017), the following tasks has been done;

- Starting establishment of Consult and Engineering Studies Center
- Formulate Internal Rules and Regulations of Consult and Engineering Studies Center
- Arrange various seminars and training courses for community
- Three field trips to Chamber of Commerce, Municipality of Wadi Al – Dawasir and Electricity Company in order to coordinate and give them the first draft of a memorandum of agreements
- Coordinating the first carrier job

(c) Administrative Positions Held

Head of Statistical and Information Unit, Collage of Engineering at Wadi Addwaser, Prince Sattam University, *Saudi Arabia*. *Period* (November 2016- present)

4. Teaching

(a) Summary of Courses Taught

[1] Renewable Energy

[3] Electrical Power

- [4] High Voltage Engineering
- [5] Electrical Machines
- [6] Power Electronics
- [7] Electrical and Electronic Circuits
- [8] Control in Industrial Processes
- [9] Introduction to Information Technology
- [10] Introduction to Computer

I taught the following courses for **post graduate students**

- [1] Renewable energy sources
- [2] Control in Electrical Power Systems
- [3] Computer Simulation of Electrical Power Systems
- [4] Electrical Power (II)
- [5] Special Topics in Solar Energy
- [6] Modern optimization techniques

Senior Design Project (I and II)

1. Simulation and hardware implementation of Maximum Power Point Tracker for Photovoltaic System
2. Solar Thermoelectric Generator (STEG)
3. Sizing of Grid-Connected Photovoltaic Power System: Case study of College of Engineering at Wadi-Addawaser
4. Automatic Room Light Controller (Smart Home)
5. Solar photovoltaic panel cooling systems

(b) Participation in Academic Accreditation

1. Electrical Engineering Program, **Role**; member of **ABET** Accreditation Unit, Collage of Engineering at Wadi Addwaser, Prince Sattam University, Saudi Arabia. **Accreditation Board for Engineering and Technology (ABET)**, Period; (Oct. 2016- present).
2. Electrical Engineering Program, **Role**; member of NCAAA Accreditation Unit, Collage of Engineering at Wadi Addwaser, Prince Sattam University, Saudi Arabia. **National Commission for Academic Accreditation and Assessment (NCAAA)**, Period; (Oct. 2016- present).
3. Electrical Engineering Program, **Role**; member of Quality Unit, Faculty of Engineering Minia University, Egypt. **National Authority for Quality Assurance and accreditation of Education**, Period; (Aug. 2012- Dec. 2014).

(c) Research Students Supervised/Trained

<u>Level</u>	<u>Number of Trainees</u>
PhD Students	1
Master Students	10
Undergraduate Students	60

(d) Participation in Thesis and Oral Examination Committees

<u>Level</u>	Number of Examinations
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(e) Training

SN	Program	Location	Date
1	TOT Training of Trainers	KSA	25/4/2017
2	Senior Design Project Training Program	KSA	Oct. 2017
3	Power Systems Laboratory commissioning training program	KSA	Spring 2017
4	Electrical Machines Laboratory commissioning training program	KSA	Spring 2017
5	Industrial Control Training Program	KSA	Spring 2017
6	Pneumatic and hydraulic Training Program	KSA	Spring 2016
7	Time Management	KSA	March 2017
8	Administrative Management	KSA	April 2017
9	Job Interview Skills	KSA	April 2017
10	Black Board Elearn platform	KSA	Oct 2017
11	Statistical analysis using SPSS	Egypt	2015/11/15
12	Advanced word processing	Egypt, Minia	2016/7/17
13	2D animation macromedia flash	Egypt, Minia	20/1/2013
14	Advanced power point	Egypt, Minia	18/11/2012
15	Advanced spreadsheets excel	Egypt, Minia	6/1/2013
16	Statistical analysis using SPSS	Egypt, Minia	29/11/2012
17	Endnote training program	Egypt, Minia	2015/11/15

5. RESEARCH**(a) Research Interests**

- Renewable Energy – Solar photovoltaic, wind energy, fuel Cell, Thermo-electric generation
- Energy efficiency through modern optimization techniques
- Energy management
- Energy storage systems
- Hybrid renewable energy
- Engineering applications of artificial intelligence
- Solar photovoltaic water pumping systems
- Maximum power point tracking

(b) Publications/Citations Data

<u>Type of Publication</u>	<u>Number of Publications</u>
Articles in International Refereed Journals	158
Conference Papers	15
Books/Book Chapters	1

Others (specify)

<u>Citation Source</u>	<u>Number of Citations</u>
Google scholar	2928
Scopus	2421
Research-gate	2846

(c) Research Grants

1. Funded Research Project, **Role: Consultant, Title:** AI-Enabled Control for Distribution Systems with High Penetration of Renewable Energy and Electric Vehicles: **Awarding Body: KFUPM University; Duration:** (9/2019-9/2022), **Amount:** 300000 Saudi Riyal.
2. High Impact Research Publication, **Role: Cp-PI, Title:** Optimal Parameter Estimation of Solid Oxide Fuel Cell Considering Static and Dynamic Models. **Awarding Body: King Abdulaziz University; Duration:** (11/2020-11/2021), **Amount:** 20000 Saudi Riyal.
3. Research Group, **Role: Principle- Investigator, Title:** Renewable and Sustainable Energy Group, **Awarding Body:** PSAU University; **Duration:** (4/2020-10/2021), **Amount:** 15000 Saudi Riyal.
4. Research Group, **Role:** Principle- Investigator, **Title:** An Effective Energy Management Strategy for Hybrid Fuel cell/Supercapacitor/Batteries Electric Power System, **Awarding Body:** PSAU University; **Duration:** (7/2019-6/2020), **Amount:** 30000 Saudi Riyal.
5. Funded Research Project, **Role:** Co- Investigator, **Title:** Hybrid Integrated Clean Energy System, **Awarding Body:** PSAU University; **Duration:** (6/2017-6/2018), **Amount:** 42000 Saudi Riyal.
6. Funded Research Project, **Role:** Co- Investigator, **Title:** Dynamic Voltage Restorer with Integrated Photovoltaic System, **Awarding Body:** PSAU University; **Duration:** (6/2017-6/2018), **Amount:** 42000 Saudi Riyal.
7. Funded Research Project, **Role:** Consultant, **Title:** Developing a reliable micro-inverter for PV systems. **Awarding Body:** JOUF University; **Duration:** (6/2017-6/2018), **Amount:** 90000 Saudi Riyal.

(d) Participation in Regional & International Conferences

1	September 2020	2020 7th International Conference on Power and Energy Systems Engineering (CPESE 2020), 26-29 September 2020, Fukuoka, Japan
2	December 2018	20 th International Middle-East Power Systems Conference, (MEPCON), Cairo University, Cairo , Egypt, December 18-20, 2018
3	December 2016	18 th International Middle East Power System Conference, MEPCON'16 Helwan University, Egypt, December 2016.
4	November 2-5, 2015	GCC Power 2015 Conference– Jeddah -Kingdom of Saudi Arabia

5	December 15-17, 2015	17 th International Middle East Power System Conference, MEPCON'15 Mansoura University, Egypt, December 15-17, 2015.
6	December 1-3, 2014	2014 IEEE International Conference on Power and Energy (PECon), Sarawak , Malaysia
7	June, 2014	The Asian Conference on Sustainability, Energy and the Environment, Osaka , Japan 2014
8	July 2014	43 rd ASES National Solar Conference 2014, SOLAR 2014, San Francisco, California, USA

6. SERVICE

(a) Service as Reviewer

Journals

	Journal	Publisher	ISSN	Since
1	Solar Energy	Elsevier	1364-0321	Oct./2013
2	Ain Shams Engineering Journal	Elsevier	2090-4479	Dec/2014
3	Renewables: Wind, Water, and Solar	Springer	2198-994X	Jun/2015
4	Energy Conversion and Management	Elsevier	0196-8904	Aug/2015
5	IET Renewable Power Generation	IET	1752-1416	Aug/2015
6	Journal of Renewable and Sustainable Energy	AIP	1941-7012	Jun/2016
7	Electrical Engineering	Springer	0948-7921	Mar/2017
8	ALEXANDRIA ENGINEERING JOURNAL	Elsevier	1110-0168	Nov/2017
9	Measurement	Elsevier	0263-2241	April/2018
10	Renewable & Sustainable Energy Reviews	Elsevier	1364-0321	July/2018
11	International Journal of Circuit Theory and Applications	John Wiley & Sons	097-007X	Oct/2018
12	Energy Reports	Elsevier	2352-4847	Oct/2018
13	IETE Journal of Research	Taylor and Francis	0377-2063	Nov/2018
14	IEEE Access	IEEE	2169-3536	Feb/2019
15	International Journal of Electronics and Communications	Elsevier	1434-8411	Feb/2019
16	Measurement and Control	SAGE	0020-2940	Feb/2019
17	International Journal of Energy Research	Wiley	1099-114X	March/2019

Conferences

1. 2020 7th International Conference on Power and Energy Systems Engineering (CPESE 2020), 26-29 September 2020, Fukuoka, Japan
2. The 1st IEEE 2019 International youth conference on radio electronics, electrical and power engineering (REEPE), (IEEE REEPE 2019), Russia, Moscow, March 14-15, 2019
3. 2014 IEEE International Conference on Power and Energy (PECon), Sarawak, Malaysia
4. 18th International Middle East Power System Conference, MEPCON'16 Helwan University, Egypt, December 2016.
5. 19th International Middle East Power System Conference, MEPCON'17 Menoufia University, Egypt, December 2017.

(b) University Service

1. Chair of Statistical and Information Unit, Collage of Engineering at Wadi Addwaser, Prince Sattam University, *Saudi Arabia. Period* (November 2016- present)

- Arrange online surveys for students
- Analyze the various NCAAA surveys data for Academic year 2016/2017
- Prepare final report with statistical analysis and information data of NCAAA surveys and submitted to head of NCAAA Accreditation Committee
- Analyze the various ABET surveys data for Academic year 2016/2017
- Prepare final report with statistical analysis and information data of ABET surveys and submitted to head of ABET Accreditation Committee

2. Academic Affairs (Registration) Committees, member, Collage of Engineering at Wadi Addwaser, Prince Sattam University, *Saudi Arabia. Period* (Oct 2016- Sept. 2017)

- Participation in the formulation of committee vision, mission and goals
- Help students with the Addition /withdrawal of courses process
- Participation in discussion for solving different problems regarding student's registration

3. Student Activities Committees, member and Coordinator , Collage of Engineering at Wadi Addwaser, Prince Sattam University, *Saudi Arabia. Period* (Oct 2016- present)

Coordinator of student's activities since Oct. 2016-present

- Participation in the formulation of committee vision, mission and goals
- Prepare minutes of meeting, contact with Committee members and write reports to the Charmian of the Committee
- Arrange various seminars and training courses
- Supervision of sports activity

4. Community & Alumni Committees, member and Coordinator , Collage of Engineering at Wadi Addwaser, Prince Sattam University, *Saudi Arabia. Period* (Oct 2016- Sept 2017)

- Participation in the formulation of committee vision, mission and goals
- Managing and arranging meeting
- Prepare minutes of meeting, contact with Committee members and write reports to the Charmian of the Committee.
- Presentation regarding establishment of Consult and Engineering Studies Center
- Formulate Internal Rules and Regulations of Consult and Engineering Studies Center
- Arrange various seminars and training courses for both alumni and community
- Three field trips to Chamber of Commerce, Municipality of Wadi Al – Dawasir and Electricity Company in order to coordinate and give them the first draft of a memorandum of agreements.
- Coordinating the mock job fair
- Participation in the first job fair

5. Coordinator of electrical department council meetings, Collage of Engineering at Wadi Addwaser, Prince Sattam University, *Saudi Arabia. Period* (Oct 2016- present)

6. Member of electrical engineering Board, faculty of engineering, Minia University, Egypt 2013/2014, 2015/2016.

7. Member of Committee of Instruments and Laboratories, faculty of engineering, Minia University, Egypt 2015/2016 academic year.

7. List of Publications (in chronological order, starting with most recent)

(a) International Refereed Journals

1. **Hegazy Rezk**, Mokhtar Aly, and Ahmed Fathy. "A Novel Strategy Based on Recent Equilibrium Optimizer to Enhance the Performance of PEM Fuel Cell System through Optimized Fuzzy Logic MPPT." *Energy* (2021): 121267.
2. Houssein, Essam H., Mohamed A. Mahdy, Ahmed Fathy, and **Hegazy Rezk**. "A modified Marine Predator Algorithm based on opposition based learning for tracking the global MPP of shaded PV system." *Expert Systems with Applications* 183 (2021): 115253.
3. Salameh, Tareq, Enas Taha Sayed, Mohammad Ali Abdelkareem, A. G. Olabi, and **Hegazy Rezk**. "Optimal selection and management of hybrid renewable energy System: Neom city as a case study." *Energy Conversion and Management* 244 (2021): 114434.
4. **Hegazy Rezk**, Ahmed Fathy, and Mokhtar Aly. "A robust photovoltaic array reconfiguration strategy based on coyote optimization algorithm for enhancing the extracted power under partial shadow condition." *Energy Reports* 7 (2021): 109-124.
5. Yousri, Dalia, Ahmed Fathy, **Hegazy Rezk**, Thanikanti Sudhakar Babu, and Mohamed R. Berber. "A reliable approach for modeling the photovoltaic system under partial shading conditions using three diode model and hybrid marine predators-slime mould algorithm." *Energy Conversion and Management* 243 (2021): 114269.
6. **Hegazy Rezk**, Thanikanti Sudhakar Babu, Mujahed Al-Dhaifallah, and Hamdy A. Ziedan. "A robust parameter estimation approach based on stochastic fractal search optimization algorithm applied to solar PV parameters." *Energy Reports* 7 (2021): 620-640.
7. Houssein, Essam H., Fatma A. Hashim, Seydali Ferahtia, and **Hegazy Rezk**. "An efficient modified artificial electric field algorithm for solving optimization problems and parameter estimation of fuel cell." *International Journal of Energy Research*.
8. Ferahtia, Seydali, Ali Djeroui, **Hegazy Rezk**, Aissa Chouder, Azeddine Houari, and Mohamed Machmoum. "Optimal parameter identification strategy applied to lithium-ion battery model." *International Journal of Energy Research* (2021).
9. Harrag, Abdelghani, and **Hegazy Rezk**. "Indirect P&O type-2 fuzzy-based adaptive step MPPT for proton exchange membrane fuel cell." *Neural Computing and Applications* (2021): 1-14.
10. Alhumade, Hesham, **Hegazy Rezk**, Abdulrahim A. Al-Zahrani, Sharif F. Zaman, and Ahmed Askalany. "Artificial Intelligence Based Modelling of Adsorption Water Desalination System." *Mathematics* 9, no. 14 (2021): 1674.
11. Aly, Mokhtar, and **Hegazy Rezk**. "A MPPT based on optimized FLC using manta ray foraging optimization algorithm for thermo-electric generation systems." *International Journal of Energy Research* (2021).
12. Afifi, Mohamed, **Hegazy Rezk**, Mohamed Ibrahim, and Mohamed El-Nemr. "Multi-Objective Optimization of Switched Reluctance Machine Design Using Jaya Algorithm (MO-Jaya)." *Mathematics* 9, no. 10 (2021): 1107.
13. Houssein, Essam H., Bahaa El-din Helmy, **Hegazy Rezk**, and Ahmed M. Nassef. "An enhanced Archimedes optimization algorithm based on Local escaping operator and Orthogonal learning for PEM fuel cell parameter identification." *Engineering Applications of Artificial Intelligence* 103 (2021): 104309.
14. **Rezk, Hegazy**, Irik Z. Mukhametzyanov, Mujahed Al-Dhaifallah, and Hamdy A. Ziedan. "Optimal Selection of Hybrid Renewable Energy System Using Multi-Criteria Decision-Making Algorithms." *CMC-COMPUTERS MATERIALS & CONTINUA* 68, no. 2 (2021): 2001-2027.
15. Fathy, Ahmed, Shady HE Abdel Aleem, and **Hegazy Rezk**. "A novel approach for PEM fuel cell parameter estimation using LSHADE-EpSin optimization algorithm." *International Journal of Energy Research* 45, no. 5 (2021): 6922-6942.
16. Alhumade, Hesham, Ahmed Fathy, Abdulrahim Al-Zahrani, Muhyaddin Jamal Rawa, and **Hegazy Rezk**. "Optimal Parameter Estimation Methodology of Solid Oxide Fuel Cell Using Modern Optimization." *Mathematics* 9, no. 9 (2021): 1066.
17. **Rezk, H.**, Al-Dhaifallah, M., Hassan, Y. B., & Ziedan, H. A. (2020). Optimization and Energy Management of Hybrid Photovoltaic-Diesel-Battery System to Pump and Desalinate Water at Isolated Regions. *IEEE Access*, 8, 102512-102529.
18. Mostafa, Manar, **Hegazy Rezk**, Mokhtar Aly, and Emad M. Ahmed. "A new strategy based on slime mould algorithm to extract the optimal model parameters of solar PV panel." *Sustainable Energy Technologies and Assessments* 42 (2020): 100849.
19. Zaky, Alaa A., Mohamed N. Ibrahim, **Hegazy Rezk**, Eleftherios Christopoulos, Ragab A. El Sehiemy, Evangelos Hristoforou, Antonios Kladas, Peter Sergeant, and Polycarpos Falaras. "Energy efficiency improvement of water

- pumping system using synchronous reluctance motor fed by perovskite solar cells." *International Journal of Energy Research* 44, no. 14 (2020): 11629-11642.
20. Yousri, Dalia, **Hegazy Rezk**, and Ahmed Fathy. "Identifying the parameters of different configurations of photovoltaic models based on recent artificial ecosystem-based optimization approach." *International Journal of Energy Research* 44, no. 14 (2020): 11302-11322.
 21. Aly, Mokhtar, and **Hegazy Rezk**. "A Differential Evolution-Based Optimized Fuzzy Logic MPPT Method for Enhancing the Maximum Power Extraction of Proton Exchange Membrane Fuel Cells." *IEEE Access* 8 (2020): 172219-172232.
 22. Kamel, Ahmed A., **Hegazy Rezk**, and Mohammad Ali Abdelkareem. "Enhancing the operation of fuel cell-photovoltaic-battery-supercapacitor renewable system through a hybrid energy management strategy." *International Journal of Hydrogen Energy* (2020).
 23. **Rezk, Hegazy**, Muhammad Wajid Saleem, Mohammad Ali Abdelkareem, and Mujahed Al-Dhaifallah. "Radial Movement Optimization Based Optimal Operating Parameters of a Capacitive Deionization Desalination System." *Processes* 8, no. 8 (2020): 964.
 24. Fathy, Ahmed, and **Hegazy Rezk**. "Robust electrical parameter extraction methodology based on Interior Search Optimization Algorithm applied to supercapacitor." *ISA Transactions* (2020).
 25. Fathy, Ahmed, **Hegazy Rezk**, and Haitham Saad Mohamed Ramadan. "Recent moth-flame optimizer for enhanced solid oxide fuel cell output power via optimal parameters extraction process." *Energy* 207 (2020): 118326.
 26. Salameh, Tareq, Mohammad Ali Abdelkareem, A. G. Olabi, Enas Taha Sayed, Monadhil Al-Chaderchi, and **Hegazy Rezk**. "Integrated standalone hybrid solar PV, fuel cell and diesel generator power system for battery or supercapacitor storage systems in Khorfakkan, United Arab Emirates." *International Journal of Hydrogen Energy* (2020).
 27. Said, Zafar, L. Syam Sundar, **Hegazy Rezk**, Ahmed M. Nassef, Hafiz Muhammad Ali, and Mohsen Sheikholeslami. "Optimizing density, dynamic viscosity, thermal conductivity and specific heat of a hybrid nanofluid obtained experimentally via ANFIS-based model and modern optimization." *Journal of Molecular Liquids* (2020): 114287.
 28. Fathy, Ahmed, **Hegazy Rezk**, and Dalia Yousri. "A robust global MPPT to mitigate partial shading of triple-junction solar cell-based system using manta ray foraging optimization algorithm." *Solar Energy* 207 (2020): 305-316.
 29. Yousef, Bashria AA, **Hegazy Rezk**, Mohammad Ali Abdelkareem, Abdul G. Olabi, and Ahmed M. Nassef. "Fuzzy modeling and particle swarm optimization for determining the optimal operating parameters to enhance the bio-methanol production from sugar cane bagasse." *International Journal of Energy Research* 44, no. 11 (2020): 8964-8973.
 30. Tanveer, W. H., **Rezk, H.**, Nassef, A., Abdelkareem, M. A., Kolosz, B., Karuppasamy, K., ... & Gilani, S. O. (2020). Improving fuel cell performance via optimal parameters identification through fuzzy logic based-modeling and optimization. *Energy*, 117976.
 31. Fathy, A., **Rezk, H.**, & Ramadan, H. S. M. (2020). Recent moth-flame optimizer for enhanced solid oxide fuel cell output power via optimal parameters extraction process. *Energy*, 207, 118326.
 32. Yousri, D., **Rezk, H.**, & Fathy, A. (2020). Identifying the parameters of different configurations of photovoltaic models based on recent artificial ecosystem-based optimization approach. *International Journal of Energy Research*.
 33. Ibrahim, M. N., **Rezk, H.**, Al-Dhaifallah, M., & Sergeant, P. (2020). Modelling and Design Methodology of an Improved Performance Photovoltaic Pumping System Employing Ferrite Magnet Synchronous Reluctance Motors. *Mathematics*, 8(9), 1429.
 34. **Rezk, H.**, Saleem, M. W., Abdelkareem, M. A., & Al-Dhaifallah, M. (2020). Radial Movement Optimization Based Optimal Operating Parameters of a Capacitive Deionization Desalination System. *Processes*, 8(8), 964.
 35. Kamel, A. A., **Rezk, H.**, & Abdelkareem, M. A. (2020). Enhancing the operation of fuel cell-photovoltaic-battery-supercapacitor renewable system through a hybrid energy management strategy. *International Journal of Hydrogen Energy*.
 36. Zaky, A. A., Ibrahim, M. N., **Rezk, H.**, Christopoulos, E., El Sehiemy, R. A., Hristoforou, E., ... & Falaras, P. (2020). Energy efficiency improvement of water pumping system using synchronous reluctance motor fed by perovskite solar cells. *International Journal of Energy Research*.
 37. Yousef, B. A., **Rezk, H.**, Abdelkareem, M. A., Olabi, A. G., & Nassef, A. M. (2020). Fuzzy modeling and particle swarm optimization for determining the optimal operating parameters to enhance the bio-methanol production from sugar cane bagasse. *International Journal of Energy Research*.
 38. Fathy, A., **Rezk, H.**, & Yousri, D. (2020). A robust global MPPT to mitigate partial shading of triple-junction solar cell-based system using manta ray foraging optimization algorithm. *Solar Energy*, 207, 305-316.
 39. **Rezk, H.**, Al-Dhaifallah, M., Hassan, Y. B., & Ziedan, H. A. (2020). Optimization and Energy Management of Hybrid Photovoltaic-Diesel-Battery System to Pump and Desalinate Water at Isolated Regions. *IEEE Access*, 8, 102512-102529.

40. Said, Z., Sundar, L. S., **Rezk, H.**, Nassef, A. M., Ali, H. M., & Sheikholeslami, M. (2020). Optimizing density, dynamic viscosity, thermal conductivity and specific heat of a hybrid nanofluid obtained experimentally via ANFIS-based model and modern optimization. *Journal of Molecular Liquids*, 114287.
41. Tanveer, W. H., Rezk, H., Nassef, A., Abdelkareem, M. A., Kolosz, B., Karuppasamy, K. & Gilani, S. O. (2020). Improving fuel cell performance via optimal parameters identification through fuzzy logic based-modeling and optimization. *Energy*, 117976.
42. Alamri, H. R., **Rezk, H.**, Abd-Elbary, H., Ziedan, H. A., & Elnozahy, A. (2020). Experimental Investigation to Improve the Energy Efficiency of Solar PV Panels Using Hydrophobic SiO₂ Nanomaterial. *Coatings*, 10(5), 503.
43. Ghasemi, M., Nassef, A. M., Al-Dhaifallah, M., & **Rezk, H.** (2020). Performance improvement of microbial fuel cell through artificial intelligence. *International Journal of Energy Research*.
44. Olabi, A. G., Nassef, A. M., Rodriguez, C., Abdelkareem, M. A., & **Rezk, H.** (2020). Application of artificial intelligence to maximize methane production from waste paper. *International Journal of Energy Research*.
45. **Rezk, H.**, Alghassab, M., & Ziedan, H. A. (2020). An optimal sizing of stand-alone hybrid PV-fuel cell-battery to desalinate seawater at Saudi NEOM city. *Processes*, 8(4), 382.
46. Fathy, A., Abdelkareem, M. A., Olabi, A. G., & **Rezk, H.** (2020). A novel strategy based on salp swarm algorithm for extracting the maximum power of proton exchange membrane fuel cell. *International Journal of Hydrogen Energy*.
47. Abdelwanis, M. I., Abaza, A., El-Sehiemy, R. A., Ibrahim, M. N., & **Rezk, H.** (2020). Parameter Estimation of Electric Power Transformers Using Coyote Optimization Algorithm With Experimental Verification. *IEEE Access*, 8, 50036-50044.
48. Gomaa, M. R., Al-Dhaifallah, M., Alahmer, A., & **Rezk, H.** (2020). Design, Modeling, and Experimental Investigation of Active Water Cooling Concentrating Photovoltaic System. *Sustainability*, 12(13), 5392.
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