Curriculum Vitae

Personal Details:

Full Name: Raad Z. Homod

Family name: Al-Bnain

Date of birth: 01.07.1969

Place of birth: Basra / IRAQ

Languages: Arabic and English,

Address: Basra/Iraq
E-mail: raad@buog.edu.iq
URL: http://scholar.google.com.my/citations?hl=en&user=PtMvRhUAAAAJ
Tel: +9647821731696

H-index qualification:

Google Scholar	Publons	Research Gate Score	Scopus
h index *29*	**h index *12***	***23.8***	**h index *13***

Academic qualification:

1. Ph.D. Degree in Mechanical Engineering / Thermal Energy, UNITEN, Malaysia.
2. M.Sc. Degree in Mechanical Engineering / Thermal Energy, (1st Class Hons), UM, Kuala Lumpur, Malaysia.
3. B.Sc. Degree in general Mechanical Engineering, (1st Class Hons), Basra University, Iraq.

Professional affiliation/membership:

1. Member of Athens Institute for Education and Research (ATINER, Greece)
2. Member of, Institute of Electrical and Electronics Engineers (IEEE, USA).
3. Member of Institution of Mechanical Engineers (IMechE, UK).

4. Member of Malaysian Society of Engineering and Technology (mSET, Malaysia).
5. Member of Iraqi Engineer's Union (Baghdad, Iraq).

Administrative duties:

2016 Ass. Prof. Dr. at Oil and Gas Engineering, Basra University for Oil and Gas, Iraq.

2014-2017 Dep. Chair, Oil and Gas Engineering, Basra University for Oil and Gas, Iraq.

2013-2014 Department Chair, Petroleum and Gas Engineering, Basra University, Iraq.

2010-2013 Lecturer and Senior Research Assistant in UNITEN, Malaysia.

2007- 2010 Demonstrator and Tutor in UM, Malaysia.

2000-2006 Senior Lecturer in the Higher Centre for Qualifying Trainers, Sebha, Libya.

1997-2000 Senior Lecturer in Sebha Vocational Intermediate Centre, Sebha, Libya.

Areas of expertise:

Identification and nonlinear intelligent control of HVAC systems, Energy efficiency, Renewable Energy and Hybrid sensor modelling.

Recent selected publications and workshops:

This data generated by Google Scholar

1. Books:

[1] **Raad Z. Homod,** K. S. M. Sahari, Intelligent HVAC Control for High Energy Efficiency in Buildings, LAP LAMBERT Academic Publishing, (2014), ISBN: 978-3-8473-0625-2.

[2] **Raad Z. Homod,** "Modeling and Fault-Tolerant Control Developed for HVAC Systems" LAP LAMBERT Academic Publishing, (2014), ISBN: 978-3-659-57392-7.

[3] Maytham S. Ahmed, **Raad. Z. Homod**, (2014) "Energy Saving by Tackling Shaft Voltage in Turbine Generators" LAP LAMBERT Academic Publishing, (2014), ISBN: 978-3-659-58452-7.

https://www.amazon.com/Raad-Z.-Homod/e/B00NKA76P4%3Fref=dbs_a_mng_rwt_scns_share

[4] **Raad Z. Homod,** "Automatic Control for HVAC System" Fakulti Kejuruteraan, Universiti Malaya, 2009- 208 pages. https://books.google.iq/books/about/Automatic_Control_for_HVAC_System.html?id=xxx3AQAACAAJ&redir_esc=y

2. Inventions:

[1] **Raad Z. Homod**, (2018), Measuring Device for Human Comfort Sensation by Converting Fanger Formula Using Applications of Artificial Intelligence, Patent, Iq, April 2, 2018 - He has received a patent number: G01N23/20033 (2018) G05D23/19.

[2] **Raad Z. Homod**, Hussein Togun, H. J. Abd (2021), Measuring Device for the Capacity of HVAC Systems by Giving the Building Specifications, F25B2600/13 (2021), F25B2700/21.

3. Academic Journals:

[1] Wisam Dawood Abdullah, **Raad Z. Homod**, Abdulbasit H Ahmed, Design and implementation of bi-directional converter with internet of things control based reading, Indonesian Journal of Electrical Engineering and Computer Science, 23, 2, August 2021, pp. 938~952. **ISI-cited publication, Q2**.

[2] Tuqa Abdulrazzaq, **Raad Z. Homod**, Hussein Togun, Augmentation of Heat Transfer and AL2O3-Nanofluid Flow Over Vertical Double Forward-Facing Step (DFFS), International Review on Modelling and Simulations (IREMOS), Vol. 14, N. 3, June 2021, **ISI-cited publication, Q2**.

[3] Togun, H., **Raad Z. Homod**, 2021. Hybrid Al2O3-Cu/water nanofluid flow and heat transfer over vertical double forward-facing step. Thermal Science, (00), pp.80-80, **ISI-cited publication, Q3**.

[4] **Raad Z. Homod**, Almusaed, A., Almssad, A., Jaafar, M.K., Goodarzi, M. and Sahari, K.S., 2021. Effect of different building envelope materials on thermal comfort and air-conditioning energy savings: A case study in Basra city, Iraq. Journal of Energy Storage, (34)101975, **ISI-cited publication, Q1**.

[5] Hou, Y.C., Mohamed Sahari, K.S., Weng, L.Y., Foo, H.K., Abd Rahman, N.A., Atikah, N.A., **Raad Z. Homod**, 2020. Development of collision avoidance system for multiple autonomous mobile robots, International Journal of Advanced Robotic Systems, 17(4), p.1729881420923967, **ISI-cited publication, Q1**.

[6] **Raad Z. Homod**, Gaeid, K.S., Dawood, S.M., Hatami, Sahari,K., 2020. Evaluation of energy-saving potential for optimal time response of HVAC control system in smart buildings. Applied Energy, 271, p.115255, **ISI-cited publication, Q1**.

[7] Amjad Almusaed, Asaad Almssad, **Raad Z. Homod**, Ibrahim Yitmen, (2020), Environmental Profile on Building Material Passports for Hot Climates, Sustainability 2020, 12(9), 3720, **ISI-cited publication, Q2**.

[8] **Raad Z. Homod**, Hussein Togun, Haider J. Abd, Khairul S. M. Sahari, (2020), A novel hybrid modelling structure fabricated by using Takagi-Sugeno fuzzy to forecast HVAC systems energy demand in real-time for Basra city, Sustainable Cities and Society, 56 (2020) 102091, **ISI-cited publication, Q1**.

[9] **Raad Z. Homod**, Falah A. Abood, Sana M. Shrama, Ahmed K. Alshara (2019), Empirical Correlations for Mixed Convection Heat Transfer Through a Fin Array

Based on Various Orientations, International Journal of Thermal Sciences, 137 (2019) 627-639, **ISI-cited publication, Q1**.

[10] **Raad Z. Homod**, (2018), Analysis and Optimization of HVAC Control Systems Based on Energy and Performance Considerations for Smart Buildings, Renewable Energy, 126 (2018) 49-64, **ISI-cited publication, Q1**.

[11] M.S. Ahmed, A. Mohamed, T. Khatib, H. Shareef, **Raad Z. Homod**, J.A. Ali, (2017), Real Time Optimal Schedule Controller for Home Energy Management System Using New Binary Backtracking Search Algorithm, Energy and Buildings, 138 (2017) 215–227, **ISI-cited publication, Q1**

[12] MS. Ahmed, A. Mohamed, **Raad Z. Homod**, H. Shareef, (2017), A home energy management algorithm in demand response events for household peak load reduction, Przeglad Elektrotechniczny, R. 93 NR 3/2017.

[13] MS. Ahmed, A. Mohamed, **Raad Z. Homod**, H. Shareef, (2016) Modeling of Electric Water Heater and Air Conditioner for Residential Demand Response Strategy, International Journal of Applied Engineering Research, 11(16) 9037-9046.

[14] M.S. Ahmed; A. Mohamed; H. Shareef; **Raad Z. Homod**; J.A. Ali; K.B. Khalid, (2016), Artificial neural network-based controller for home energy management considering demand response events, conference on Advances of Electrical, Electronic and Systems Engineering, ICAEESE, (2016) 32 - 36.

[15] MS. Ahmed, A. Mohamed, **Raad Z. Homod**, H. Shareef (2017) Awareness on Energy Management in Residential Buildings: A Case Study in Kajang and Putrajaya, Journal of Engineering Science and Technology, , 12 (5) 1280 - 1294.

[16] MS. Ahmed, A. Mohamed, **Raad Z. Homod**, H. Shareef, (2016) Hybrid LSAANN Based Home Energy Management Scheduling Controller for Residential Demand Response Strategy, Energies 2016(9)716.

[17] **Raad Z. Homod**, Khairul Salleh Mohamed Sahari, Haider A.F. Almurib, Farrukh Hafiz Nagi, Double cooling coil model for non-linear HVAC system using RLF

method, Energy and Buildings (ISSN: 0378-7788)-Elsevier, Vol. 43, Issue 9, September 2011, Pp. 2043-2054 (**ISI-cited publication, Q1**).

[18] **Raad Z. Homod**, Khairul Salleh Mohamed Sahari, Haider A.F. Almurib, Farrukh Hafiz Nagi, RLF and TS fuzzy model identification of indoor thermal comfort based on PMV/PPD, Building and Environment (ISSN: 0360-1323)-Elsevier, Vol. 49, Issue (March 2012), Pp. 141e153 (**ISI-cited publication, Q1**).

[19] **Raad Z. Homod**, Khairul Salleh Mohamed Sahari, Haider A.F. Almurib, Farrukh Hafiz Nagi, Gradient auto-tuned Takagi-Sugeno fuzzy forward control of a HVAC system using predicted mean vote index, Energy and Buildings (ISSN: 0378-7788)-Elsevier, Vol. 49, Issue (June 2012), Pp. 254-267 (**ISI-cited publication, Q1**).

[20] **Raad Z. Homod**, Khairul Salleh Mohamed Sahari, Haider A.F. Almurib, Farrukh Hafiz Nagi, (2010) "Hybrid PID-cascade control for HVAC system" international journal of systems control1, (Vol.1-2010/Iss.4), Pp. 170-175 (**SCOPUS indexed cited publication**).

[21] **Raad Z. Homod**, Khairul Salleh Mohamed Sahari, (2013) "Energy Savings by Smart Utilization of Mechanical and Natural Ventilation for Hybrid Residential Building Model in Passive Climate" Energy and Buildings (ISSN: 0360-1323)-Elsevier, Vol. 60, Issue (June 2013), Pp. 310–329, (**ISI-cited publication, Q1**).

[22] **Raad Z. Homod**, (2013) "Review on the HVAC System Modeling Types and the Shortcomings of Their Application" Journal of Energy, (Vol. 2013), ID 768632, 10 pages, (**SCOPUS indexed cited publication**).

[23] **Raad Z. Homod**, K. S. M. Sahari, H. A.F. Almurib, F. H. Nagi, (2012) "Corrigendum to "Double cooling coil model for non-linear HVAC system using RLF method" Energy and Buildings, Volume 43 (2011) 3737, (**ISI-cited publication, Q1**).

[24] **Raad Z. Homod**, (2014) "Assessment regarding energy saving and decoupling for different AHU (air handling unit) and control strategies in the hot-humid climatic region of Iraq" Energy, 74 (2014) 762-774, **ISI-cited publication, Q1**).

[25] **Raad Z. Homod**, K. S. M. Sahari, H. A.F. Almurib (2014) "Energy saving by integrated control of natural ventilation and HVAC systems using model guide for comparison" Renewable Energy,71 (2014) 639–650, **ISI-cited publication, Q1**).

[26] **Raad Z. Homod**, K. S. M. Sahari, H. A.F. Almurib, F. H. Nagi, (2014) "Corrigendum to "Gradient auto-tuned Takagi–Sugeno Fuzzy Forward control of a HVAC system using predicted mean vote index" Energy and Buildings, 82 (2014) 812, **ISI-cited publication, Q1**).

4. Conference proceeding articles:

[1] **Raad Z. Homod**, Khairul Salleh Mohamed Sahari, Haider A.F. Almurib, Farrukh Hafiz Nagi, (2010), Modeling of heat and moisture transfer in building using RLF method, **IEEE** Conference on Research and Development (SCOReD), Digital Object Identifier, 10.1109/SCORED. 2010.5704018, Pp. 287 – 292.

[2] **Raad Z. Homod**, T. M. I. Mahlia, Haider A. F. Mohamed (2009) "PID-Cascade for HVAC System Control" International Conference on Control, Instrumentation and Mechatronic Engineering (CIM09), June 2-3, (2009) 598-603. (**Awarded as a best Paper in the conference**).

[3] **Raad Z. Homod**, T. M. I. Mahlia, Haider A. F. Mohamed (2009) "Rejection of Sensor Deterioration, Noise, Disturbance and Plant Parameters Variation in HVAC System" International Conference on Control, Instrumentation and Mechatronic Engineering (CIM09), June 2-3, (2009) 604-609.

[4] K S Mohamed Sahari, M F Abdul Jalal, **Raad Z Homod** and Y K Eng, (2013) "Dynamic indoor thermal comfort model identification based on neural computing PMV index" conference series: earth and environmental science, IOP, 16 012113.

[5] M.S. Ahmed, A. Mohamed, **Raad Z. Homod**, (2015), Smart plug prototype for monitoring electrical appliances in home energy management system, **IEEE** Conference on Research and Development (SCOReD), Digital Object Identifier.

[6] M.S. Ahmed; A. Mohamed; H. Shareef; **Raad Z. Homod**; (2016), Artificial neural network-based controller for home energy management considering demand response events, conference on Advances of Electrical, Electronic and Systems Engineering, ICAEESE, (2016) 32 - 36.

[7] **Raad Z. Homod**, (2018), First International Conference for Invention, University of Babylon, 28-29-November-2018.

[8] **Raad Z. Homod**, (2019), Innovation Conference and Exhibition, Ministry of Construction and Housing and Municipalities and Public Works, 25-26-February-2019.

[9] **Raad Z. Homod**, (2019), Second Conference and Exhibition of Inventions, Karbala's Donating is a Residence of Science and Scientists, 20-22-March-2019.

[10] **Raad Z. Homod**, (2019), Second Conference and Exhibition of Inventions, Karbala's Donating is a Residence of Science and Scientists, 20-22-3-2019.

[11] **Raad Z. Homod**, (2019), Festival and Exhibition AL-Mustaqbal University College of Patents of invention AL-Mustaqbal University College (Private College) Babylon-Iraq 27-30-April-2019.

[12] **Raad Z. Homod**, (2019), Second International Festival of Invention, Innovation and Copyright, Al-KITAB University-Iraq 4-5-May-2019.

[13] **Raad Z. Homod**, (2019), International Exhibition on Innovation and Technology, Tehran-Iran 9-12-June-2019.

[14] Lubna A. Hussein, Adnan A. Ateeq, **Raad Z. Homod**, Energy Saving by Reinforcement Learning for Multi-Chillers of HVAC Systems, 2nd International Multi-Disciplinary Conference (IMDC), 2, Sptemper 2021, pp. 21~32.

5. Member of the Editorial Board:

[1] Smart Construction Research
http://ojs.whioce.com/index.php/scr/about/editorialTeam

[2] Global illuminators research journals
https://globalilluminators.org/membership-directory/

6. participation in workshops:

[1] Workshop on Research methodology
[2]Workshop on Latex program
[3]Workshop on MatLab program
[4]Workshop on Pro-E program

Referee/Reviewer for Journals Experience:

1- Journal of Building Engineering, ELSEVIER
2- Building and Environment, ELSEVIER
3- Energy policy, ELSEVIER
4- Scientific Research and Essays
5- Energy and Buildings, ELSEVIER
6- Journal of Engineering Research and Design
7- Advancement in Scientific and Engineering Research, ASER.
8- The Progress Electrical & Electronics Engineering, Trade Science Inc
9- Energy and Efficiency Cleentech Community.
10- Applied Energy
11- Metrology and Measurement Systems
12- Energy Efficiency, Springer
13- Journal of Scientific Research and Studies
14- Conference on MATHMOD Vienna
15- IET Journals
16- American Association for Science and Technology (AASCIT)
17- World Journal of Mechanical Engineering
18- International Federation of Automatic Control
19- World Journal of Engineering

20- International Journal of Refrigeration, ELSEVIER
21- Emirates Journal for Engineering Research
22- Energy Engineering and Environmental Protection, EEEP
23- Global illuminators research journals (member of the editorial board)
24- International Journal of Architectural Heritage (Taylor)
25- Energy, ELSEVIER
26- IFAC Journal of Systems and Control, ELSEVIER
27- International Journal of Automation and Control
28- Energy Reports, ELSEVIER

Professional work experience:

1. September, 1997 to August, 2006 – Control development and consultant for HVAC systems in Al-Tomoh Al-Kabir Company as apart-time job, Libya.
2. September, 1997 to August, 2006 – Fixing the broken-down and installation of HVAC systems in workshops for the Mechanical Department of Sebha Vocational Intermediate Centre, Sebha, Libya.
3. January, 1992 to May, 1997 – Installation and maintaining for HVAC systems in Machineries Engineering (EME) then moved to General Establishment of Steel & Iron, Iraq.

Teaching experiences:

1. Heat Transfer 219/2020, Basra University for Oil and Gas
2. Numerical Methods 219/2020, Basra University for Oil and Gas
3. Numerical Methods 218/2019, Basra University for Oil and Gas
4. Engineering Drawing 218/2019, Basra University for Oil and Gas
5. Numerical Methods 217/2018, Basra University for Oil and Gas
6. Engineering Drawing 217/2018, Basra University for Oil and Gas
7. Numerical Methods 216/2017, Basra University for Oil and Gas

8. Engineering Drawing 216/2017, Basra University for Oil and Gas
9. Numerical Methods 215/2016, Basra University for Oil and Gas
10. Engineering Drawing 215/2016, Basra University for Oil and Gas
11. Numerical Methods 214/2015, Basra University for Oil and Gas
12. Engineering Drawing 214/2015, Basra University for Oil and Gas
13. Calculus 213/2014, Basra University
14. Engineering Drawing 213/2014, Basra University
15. Applied heat transfer (MEHB) 211/2012, UNITEN, Malaysia.
16. Thermodynamic (METH) 211/2012, UNITEN, Malaysia.
17. Artificial intelligent control (MEAC) 210/2011, UNITEN, Malaysia.
18. Control system and automation 2007/2008, UM, K. L., Malaysia.
19. Artificial intelligent control 2008/2009, UM, K. L., Malaysia.
20. Control system and automation 2009/2010, UM, K. L., Malaysia.
21. Numerical method for engineering 2005/2006, Higher Centre for Qualifying Trainers, Sebha, Libya.
22. Control and automation 2005/2006, Higher Centre for Qualifying Trainers, Sebha, Libya.
23. Air conditioning and refrigeration 2004/2005, Higher Centre for Qualifying Trainers, Sebha, Libya.
24. Computational mathematics 2004/2005, Higher Centre for Qualifying Trainers, Sebha, Libya.
25. Mathematic 2005/2006, Sebha Vocational Intermediate Centre, Libya.
26. Materials science 2005/2006, Sebha Vocational Intermediate Centre, Libya.
27. Thermodynamics 2004/2005, Sebha Vocational Intermediate Centre, Libya.

28. Metals and Alloys 2004/2005, Sebha Vocational Intermediate Centre, Libya.
29. AutoCAD 2003/2004, Sebha Vocational Intermediate Centre, Libya.
30. Heat transfers 2003/2004, Sebha Vocational Intermediate Centre, Libya.
31. Air conditioning system 2002/2003, Sebha Vocational Intermediate Centre, Libya.
32. Mathematic 2002/2003, Sebha Vocational Intermediate Centre, Libya.
33. Refrigeration system 2001/2002, Sebha Vocational Intermediate Centre, Libya.
34. AutoCAD 2001/2002, Sebha Vocational Intermediate Centre, Libya.
35. Measurement instrument 2000/2001, Sebha Vocational Intermediate Centre, Libya.
36. AutoCAD 2000/2001, Sebha Vocational Intermediate Centre, Libya.
37. Heat exchangers 1999/2000, Sebha Vocational Intermediate Centre, Libya.
38. Thermodynamics1999/2000, Sebha Vocational Intermediate Centre, Libya.
39. Fluid Mechanics 1998/1999, Sebha Vocational Intermediate Centre, Libya.
40. Mechanics of Material 1998/1999, Sebha Vocational Intermediate Centre, Libya.
41. AutoCAD 1997/1998, Sebha Vocational Intermediate Centre, Libya.
42. Engineering Materials 1997/1998, Sebha Vocational Intermediate Centre, Libya.

Supervision of students:

1. Supervising MSc. student 2020-present, Faculty of Engineering, Southern Technical University, Iraq
2. Supervising PhD student 2019-present, Faculty of Engineering, Bu-Ali Sina University, Iran.
3. Supervising PhD student 2014-2018, UKM, Malaysia
4. Undergraduate Students Final Year Projects (1 student) 2011/2012, UNITEN, Malaysia.

5. Undergraduate Students Industrial Training Supervision (3 students) 2010/2011, UNITEN, Malaysia.
6. Undergraduate Students Final Year Projects (3 student) 206/2017, Basra University for Oil and Gas.

Externally funded research projects:

1. Design of smart Energy Level Controller for COE Building in UNITEN.
2. Development of Dexterous Robotic Arm and Hand for Deformable Object.
3. Design and implementation of Industrial Tank's temperature control system Using intelligent Techniques.

Consultation project/consultancy:

(Project title), (Role), (From)-(Until), (Organisation).

1. Cooling heating load distribution of HVAC systems, Consultant, 1998-2006, Sabha (previously 2March) Hospital, Libya.

Awards and recognitions:

(Name of Award), (Awarding Institution), (Year Awarded), (Level).

1. Science Day Award for researcher, issuer Ministry of Higher Education, December 2019.
2. Science Day Award for researcher, issuer Ministry of Higher Education, December 2015.
3. Higher Education Award for Science, issuer Ministry of Higher Education, December 2013.
4. Science Day Award for researcher, issuer Ministry of Higher Education, December 2009.

5. Excellence Award for PHD Completion Period [within 2 years], UNITEN, 2012, (UNIVERSITY).
6. Excellent Lecturer Award in Teaching for subject (MEHB), college of Engineering, UITEN, 2011, (DEPARTMENT).
7. Best paper Award, Instrumentation and Mechatronic Engineering (CIM09), June 2009, Malaysia, (INTERNATIONAL).
8. Excellent Lecturer Award in Teaching for all subjects, mechanical department, Sebha Vocational Intermediate Centre, 2003, (DEPARTMENT).
9. May 19, 2016 - He has received best researcher awards at Science Day Festival, given annually to a high impact factor research, issued by the Ministry of Higher Education
10. May 19, 2016 - He has received award for his academic and research work at Higher Education Festival, one award to be given every 4 years, issued by the Ministry of Higher Education