

## *Curriculum Vitae*

### **Personal Details:**

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**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>

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### **H-index qualification:**

Google Scholar	Research Gate Score	Scopus
<b>H Index 13</b>	<b>22.3</b>	<b>h index 9</b>

### **Academic qualification:**

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

### **Professional affiliation/membership:**

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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:**

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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.  
2010-2012 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:**

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

### **Recent selected publications and workshops:**

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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.

[4] **Raad Z. Homod**, “Automatic Control for HVAC System” Fakulti Kejuruteraan, Universiti Malaya, 2009- 208 pages.

## **2. Academic Journals:**

- [1] **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**.
- [2] **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**.
- [3] 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**
- [4] MS. Ahmed, A. Mohamed, **Raad Z. Homod**, H. Shareef, (2017), A home energy management algorithm in demand response events for household peak load reduction, Przegląd Elektrotechniczny, R. 93 NR 3/2017.
- [5] 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.
- [6] 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, ICAEESSE, (2016) 32 - 36.
- [7] 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.

- [8] 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.
- [9] **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**).
- [10] **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**).
- [11] **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**).
- [12] **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**).
- [13] **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**).
- [14] **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**).

- [15] **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**).
- [16] **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**.
- [17] **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**.
- [18] **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**).

### **3. 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.

#### **4. 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:**

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- 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

### **Professional work experience:**

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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:**

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1. Numerical Methods 216/2017, Basra University for Oil and Gas
2. Engineering Drawing 216/2017, Basra University for Oil and Gas
3. Numerical Methods 215/2016, Basra University for Oil and Ga
4. Engineering Drawing 215/2016, Basra University for Oil and Gas
5. Numerical Methods 214/2015, Basra University for Oil and Gas
6. Engineering Drawing 214/2015, Basra University for Oil and Gas
7. Calculus 213/2014, Basra University
8. Engineering Drawing 213/2014, Basra University
9. Applied heat transfer (MEHB) 211/2012, UNITEN, Malaysia.
10. Thermodynamic (METH) 211/2012, UNITEN, Malaysia.

11. Artificial intelligent control (MEAC) 210/2011, UNITEN, Malaysia.
12. Control system and automation 2007/2008, UM, K. L., Malaysia.
13. Artificial intelligent control 2008/2009, UM, K. L., Malaysia.
14. Control system and automation 2009/2010, UM, K. L., Malaysia.
15. Numerical method for engineering 2005/2006, Higher Centre for Qualifying Trainers, Sebha, Libya.
16. Control and automation 2005/2006, Higher Centre for Qualifying Trainers, Sebha, Libya.
17. Air conditioning and refrigeration 2004/2005, Higher Centre for Qualifying Trainers, Sebha, Libya.
18. Computational mathematics 2004/2005, Higher Centre for Qualifying Trainers, Sebha, Libya.
19. Mathematic 2005/2006, Sebha Vocational Intermediate Centre, Libya.
20. Materials science 2005/2006, Sebha Vocational Intermediate Centre, Libya.
21. Thermodynamics 2004/2005, Sebha Vocational Intermediate Centre, Libya.
22. Metals and Alloys 2004/2005, Sebha Vocational Intermediate Centre, Libya.
23. AutoCAD 2003/2004, Sebha Vocational Intermediate Centre, Libya.
24. Heat transfers 2003/2004, Sebha Vocational Intermediate Centre, Libya.
25. Air conditioning system 2002/2003, Sebha Vocational Intermediate Centre, Libya.
26. Mathematic 2002/2003, Sebha Vocational Intermediate Centre, Libya.
27. Refrigeration system 2001/2002, Sebha Vocational Intermediate Centre, Libya.
28. AutoCAD 2001/2002, Sebha Vocational Intermediate Centre, Libya.
29. Measurement instrument 2000/2001, Sebha Vocational Intermediate Centre, Libya.



30. AutoCAD 2000/2001, Sebha Vocational Intermediate Centre, Libya.
31. Heat exchangers 1999/2000, Sebha Vocational Intermediate Centre, Libya.
32. Thermodynamics 1999/2000, Sebha Vocational Intermediate Centre, Libya.
33. Fluid Mechanics 1998/1999, Sebha Vocational Intermediate Centre, Libya.
34. Mechanics of Material 1998/1999, Sebha Vocational Intermediate Centre, Libya.
35. AutoCAD 1997/1998, Sebha Vocational Intermediate Centre, Libya.
36. Engineering Materials 1997/1998, Sebha Vocational Intermediate Centre, Libya.

### **Supervision of students:**

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1. supervising PhD student 2014-present, UKM, Malaysia.
2. Undergraduate Students Final Year Projects (1 student) 2011/2012, UNITEN, Malaysia.
3. Undergraduate Students Industrial Training Supervision (3 students) 2010/2011, UNITEN, Malaysia.
4. Undergraduate Students Final Year Projects (3 student) 206/2017, Basra University for Oil and Gas.

### **Externally funded research projects:**

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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).**

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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).**

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1. Science Day Award for researcher, issuer Ministry of Higher Education, December 2015.
2. Higher Education Award for Science, issuer Ministry of Higher Education, December 2013.
3. Science Day Award for researcher, issuer Ministry of Higher Education, December 2009.
4. Excellence Award for PHD Completion Period [within 2 years], UNITEN, 2012, (UNIVERSITY).
5. Excellent Lecturer Award in Teaching for subject (MEHB), college of Engineering, UITEN, 2011, (DEPARTMENT).
6. Best paper Award, Instrumentation and Mechatronic Engineering (CIM09), June 2009, Malaysia, (INTERNATIONAL).
7. Excellent Lecturer Award in Teaching for all subjects, mechanical department, Sebha Vocational Intermediate Centre, 2003, (DEPARTMENT).

April 2, 2018 - He has received a patent number:

[1] **Raad Z. Homod**, (2018), Measuring Device for Human Comfort Sensation by Converting Fanger Formula Using Applications of Artificial Intelligence, Patent, Iq, G01N23/20033 (2018) G05D23/19.

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

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