Faculty Resume

PERSONAL DATA

Name: Dr. Rafid Maallak Hannun Alsalih
Rank : Prof.
Address: Professors Quarter, Nassiriya city, Thi-Qar, Iraq
Place and Date of Birth: Thi-Qar, Iraq, 25.12.1970.
Nationality: Iraqi
Marital status: Married - and I have three boys.
Mob. Phone: 00964(0)7826980584
Email: rafid.alsaleh@gmail.com **and** rafid-m@utq.edu.iq

Education

Ph.D. in Thermal and Power Engineering, College of Engineering, University of Basra, Basra, Iraq 2009.

M.Sc. in Renewable and Solar Energy Engineering, Mechanical Engineering Dept., University of Technology, Baghdad, Iraq, 2005.

B.Sc. in general Mechanics, Mechanical Engineering, College of Engineering, University of Baghdad, Baghdad, Iraq, 1992.

M.Sc. Thesis: Modeling of Solar Thermal Power Plant.
PhD. Thesis: Three Dimensional Aerodynamic And Temperature Predictions For Nassiriya Power Plant Boiler Furnace

Academic Record with CE

2018-present	Professor
2013- 2018	Assist Professor
2010- 2013	Lecturer
2008-2010	Assistant Lecturer

Other related experience: teaching, industrial, etc

Teaching
2008-present Mechanical and Electrical and electronic Engineering Departments /Thi-Qar University
2005-2008 Chemistry science Department / Thi-Qar University
Training at:
Cardiff school of Engineering, Wales, UK, Since 7/10/2008 until 30/3/2009.
Armfield Company for manufacturing the scientific laboratories, UK, 28/3- 16/4/2014.
UNIDO (United Nations for Industrial Development Organization), "Technology Scheming and Production Management", Amman, Jordan, 7-14 March 2014.
UNISCO "Higher Education Quality", Arbil, Iraq, 25/2-1/3/2014.
Research
2005-present several research activities including**:**
1. Renewable and Solar Energy.
2. Thermal Engineering

3. Mechanical Engineering
4. Fluid
5. CFD
6. Quality Management
7. Power plants Engineering
8. Electrical power

Consulting, Patents, etc.

Membership of Thi –Qar Engineering Consulting Bureau since 2012 till 31 Jan.2016.
Manager of consulting Multi- Specialists Services Bureau since 14 Feb. 2016 till now.

Memberships in Scientific and Professional Societies

Membership of Iraqi Engineers Union since 1993 till now.

Honors, Awards, Grants

Academic visitor and honorary of Cardiff School of Engineering, UK, (2008-2009)

Principal publications within last years

1- Hannun R.M., "**Utilization of Solar Energy in Power Production**", conference of solving the electrical power production problems in Iraq, Alshaikh Altusi University, Najaf,7 Feb. 2007.

2- Hannun R.M., Ugla A.A. and Abid G.A., "**Prediction of Power Chimney Parameters Influenced the Operation at Nassiriya City**", Thi-Qar University Journal for Engineering Sciences, 2(2), 2011, 84-105.

3- **Investigation of Natural Convection Heat Transfer Inside an Inclined Porous Partitioned Triangular Enclosure** by Khudheyer S. Mushatet Qasim S. Mehdi Rafid Maallak Hannun, Najaf International scientific Conference, April 2010

4- **Construction of Central Receiver -Type Field of Solar Power Plant Model** by Dr. Rafid Ma'allak Hannun, Ayad K.Khulkhal and Dr.Mushtaq I.Hasan , Thi-Qar University Journal for Engineering sciences, 2011

5- **Effect of Variation in Channel Area on the Performance of Counter Flow Micro channel Heat Exchanger** by Dr. Mushtaq.I.Hasan and Dr. Rafid Maallak Hannun, Thi-Qar University Journal 2011

6- **Dr. Rafid M. Hannun, " The Troubles In Quality Future Inside The Institutes Of Higher Education, The Application And Treatments In Comparison With Quality Experiment In Cardiff (Wales) University/ UK**", The First International Arabic Conference For Quality Assurance Of Higher Education, Jordan, Amman, 10-12/5/2011.

7- **Dr. Rafid M. Hannun, "Utilizing solar energy in electricity production in Iraq"**, 27-5-2011, symposium for the solution of electricity problems in Iraq, Ministry of Higher Education and Scientific Research.

8- **Power Generation by Utilizing the Compound Gases with Spilled Oil at Using POWER CHIMNEY Techniques** by Dr. RafidM Hannun, Iraqi conference for oil and gas, Basrah, 27-28 Oct.2011.

9- **The Temperature Effect of Sensitivity for Direct Detection Optical Receiver Incorporating FET- Amplifier** By Abdulgaffar S. M., Dr.Rafid M.Hannun and Muhannad Sahib Ali

10- "**3-D. Aerodynamics and Thermal Prediction for Nassiriya Power Plant Furnace by Using Crude Oil Fuel**", International Journal of Advances in Science and Technology **,**Vol. 3, No.4, 2011 (UK) by Rafid M.Hannun[1], Salih E.Najim[2], Qais A. Rishack[3], Nick Syred[4,] UK

11- Hannun R.M., "**Modeling Of Two Different Types Of Wind Turbines**" Journal of Al-Qadisiya for Engineering Sciences, Vol.5, No.3, 2012, Iraq.

12- Hannun R.M., "**New Base and Burner Design for Utilizing the Compound Gases with Spilled Oil at Using Power Chimney Techniques**", Thi-Qar University Journal for Engineering Sciences, Vol. , No. , 2012, Iraq.

13- Mushatat K. S., Hannun R. M. , Rishack Q.A. and Hasan M. I. , "**Analysis of Turbulent Free Convection in Enclosure with Conductive Partitions",** Thi-Qar University Journal for Engineering Sciences, Vol. , No. , 2013, Iraq.

14- Mushatat K. S., Rishack Q.A., Hannun R. M. and Hasan M. I., "**Turbulent Natural Convection Inside Square Inclined Cavity with Conductive Partitions",** Thi-Qar University Journal for Engineering Sciences, Vol. , No. , 2013, Iraq.

15- Hasan M. I., Hannun R. M., and Elaikh T.H., "**Study Of The Flow And Heat Transfer In Microchannel Heat Sink With Zigzag Profile Fins**", Najaf International scientific Conference, 20-21/2/2013.

16- Hannun R. M., Najim S. E., Rishack Q. A., Syred Nick., "**Modeling of Pollutants Prediction from fuel burning in oil and gas Refineries",** second conference for modern technologies of oil refining, University of Technology, Baghdad, 14-16/5/2013.

17- Hannun R. M., Najim S. E., Rishack Q. A., Syred Nick., "**3-D. Aerodynamics And Thermal Prediction For Nassiriya Power Plant Furnace By Using Gaseous Fuel",** IOSR Journal of Engineering (IOSRJEN), Vol. 04, Issue 02 (February. 2014), ||V2|| PP 12-26, ISSN (e): 2250-3021, ISSN (p): 2278-8719.

18- Khudheyer S. Mushatet, Rafid Maallak Hannun, Muhannad Sahib Ali, **"Prediction of Turbulent Flow and Heat Transfer Characteristics inside a Channel With Different Shapes Inserts",** first Basrah International Conference on Mechanical Engineering BICME2014, 8-10 April 2014, Basrah, Iraq.

19- Rafid Maallak Hannun, Salih E.Najim, Mohammed H. Khalaf **"The Parameters Change with Different Operation Conditions of Solar Chimney Power Plant Model",** first Basrah International Conference on Mechanical Engineering BICME2014, 8-10 April 2014, Basrah, Iraq.

20- **Rafid M. Hannun, "Take Advantage of The Heavy Water in The Development of Green Zones around Nasiriyah City"**, The First Thi-Qar Development Conference, Thi-Qar University, 20-21/5/2015.

21- Rafid Maallak Hannun**, "The Troubles Of Electrical System Work In Thi-Qar Province And Their Treatments"** , The First Thi-Qar Development Conference, Thi-Qar University, 20-21/5/2015.

22- Rafid Maallak Hannun **, "Effect Of Collector Area And Forced Circulation On The Solar Still System At Nasiriya City",** first Thi –Qar university conference for engineering and technology, 4-5/10/2015.

23- Rafid M. Hannun , Mohammed H. Khalaf, Amel Hashim Husain**, "Solar Chimney and Power Tower Techniques for Power Production in Nasiriya City",** Journal of Petroleum Research and Studies, Issue 18, PP (E63-E76), 2018.

24- Rafid M. Hannun**,** Zainab Adel Lafta," **Modeling Of Solar Adsorption Refrigeration System in Nasiriya city",** Journal of Solar Energy Research, University of Tehran, Iran, Vol 1, No.1, 2016.

25- Rafid M. Hannun**,** Muntadhar N.Salman**, " Thermal behavior of different cooling towers using induced draught cross flow",",** Thi-Qar University Journal for Engineering Sciences, Vol. , No. , 2017, Iraq

26- Rafid M. Hannun**, " Thermal Analysis for Underground Power Cables with Different Arrays in Hot Places", Thi-Qar University Journal for Engineering Sciences, Vol. , No. , 2017, Iraq.**

27- Rafid M. Hannun**, " Solar Water Desalination by Using Parabolic Dish in Hot Climate Weather Conditions",** Thi-Qar University Journal for Engineering Sciences, Vol. , No. , 2017, Iraq**.**

28- Rafid M. Hannun **,** Hazim I. Radhi , Noura A.ESSI **"The Types of Mechanical and Thermal Stresses on the First Stage Rotor Blade of a Turbine" ,** KCST-2019 , the 5th Kurdistan International Conference on Science and Technology, Duhok University, Innovaciencia journal, Iraq.

29- Rafid M. Hannun , Salman H. Hammadi, Mohammed H. Khalaf **"Modeling Different Nanofluid Particles and Underground EAHE System to Decrease the Power Transformer Temperature",** International Review of Mechanical Engineering, SCOPUS, Vol 12, No. 7, July 2018. PP 627-634.

30- Rafid M. HANNUN, Salman H. HAMMADI, Mohammed H. KHALAF, "**HEAT TRANSFER ENHANCEMENT FROM POWER TRANSFORMER IMMERSED IN OIL BY EARTH AIR HEAT EXCHANGER", Thermal Science, SCOPUS, 2018.**

31- Rafid M. HANNUN, Salman H. HAMMADI, Mohammed H. KHALAF "**Effect of location and direct solar radiation on the performance of electric power Transformer",** International conference of Technical southern University, 2018.

32- Rafid Hannun, Hussein Togun, Mohammed Khalaf and Tariq Abed, **"The effect of solar chimney dimensions on its performance in Nasiriya city weather conditions",** International journal of Engineering and technology, SCOPUS, 8(1,5) (2019) 419-424.

33- Rafid Hannun, Mohammed M. Salih."**Converting Zubair oil field permanent power generation from single cycle into combined-cycle with plant exergy analysis",** Conference of Alayn University, SCOPUS Journal, ISCAU2019.

34- Rafid Hannun, Noor Sabah**, "Evaluation of thermal state for overhead lines in Nasiriyah city",** Arab scientists Conference, 18 August 2019, Cairo, Egypt.

35- Rafid Hannun, Noor Sabah**, "Comparison of thermal state for overhead and underground lines in Nasiriyah city",** Thi-Qar engineering Journal, 2019.

36- Rafid Hannun, Sara Qaiser Hamza**, "Improving Coefficient Of Thermal Performance And Electricity Saving In The Air-Chiller System",** Thi-Qar engineering Journal, Vol. 10 (2) Sept. 2019.

37- Rafid Hannun, Muwaffaq M. Julood, "**Sizing, Design and Installation of a 400W Renewable Energy Hybrid System",** First South Oil Refining company conference, Basra, Iraq.

38- Rafid M. Hannun **,** Hazim I. Radhi , Noura A.ESSI **"Operation Condition effects on thermal parameters of Nasiriya Power Plant steam turbine",** 3rd international conference on recent innovations in Engineering (ICRIE), Duhok, 2020.

39- Rafid M. Hannun, Noor Sabah, **"Evaluation of Thermal State for Overhead Lines in Nasiriyah City",** 2nd international scientific conference, Azerbaijan, 2020.

40- Rafid Hannun, Sara Qaiser Hamza**, "Modeling Efficient Hybrid Air Conditioning System",** 5th international conference for Southern Technical University, Iraq, 2020.

41- Rafid Hannun, Saba J. Mohseen, **"Computational fluid dynamic analysis of blood flow through critical stenosis of the right coronary artery in human",** Thi_Qar University Journal for Engineering Sciences , ISSN 2075 – 9764, 2020.

42- Rafid Hannun, Saba J. Mohseen, **"Computational Fluid Dynamic Analysis of Blood Flow into Normal Right Coronary Artery"**, J. Mechanical Engineering Research Developments, Vol. 43, No. 5, *pp. 460-471* , 2020.

43- Rafid Hannun, Muwaffaq M. Julood, "**The practical impact of wind turbine in the hybrid sustainable energy system**", journal of innovative systems design and engineering, 2020.

44- Rafid Hannun, Qasim A. Alanbari, Abbas Q. Muhammed, "**Introducing newly developed nomadic people optimizer (NPO) algorithm to find optimal sizing of a hybrid renewable energy",** 2nd international scientific conference of ALAIN university, Iraq, 15 July 2020.

45- Rafid Hannun, Qasim A. Alanbari, Abbas Q. Muhammed, **"Optimal sizing of a hybrid pv/wind/diesel/battery power system by Nomadic People Optimizer (NPO)",** IEEE ACCESS Journal, 2020.

46- Rafid M. Hannun **,** Hazim I. Radhi , Hashim H. Zugair, **"Design and Evaluation of A combined (Humidification, Dehumidification) system to extract fresh water from the air in the arid area", scientific.net- JERA- Vol52-pp115-123 (2021)**

47- Rafid M. Hannun **,** Hazim I. Radhi , Hashim H. Zugair, **"Design and fabrication combined system to extract water from the air fits with the hot climatic conditions", scientific.net- JERA- Vol52-pp115-123 (2021)**

48- Rafid M. Hannun**,** Muayad, Firas**, Photovoltaic Thermal Solar Energy Systems – harvesting of Nanofluids: A review**

49- Rafid M. Hannun**,** Raheem M. Koban**," Thermal Study of Solar Parabolic Cooker in Nasiriya city, Iraq", International conference for Renewable Energy, University of Thi-Qar, 2021.**

50- RAFID M. Hannun, HAZIM I. Radhi , SALIH K. Alrebeh , ABDULGAFFAR S. Muhawis, NOURA Essi, ANSAM S. Jabbar**, "Operation Condition Effects on**

Thermal Parameters of Nasiriya Power Plant Steam Turbine", Alkafeel Scientific Conference, March 2021.

51- Rafid Hannun, Qasim A. Alanbari, Abbas Q. Muhammed, **Multi-objective NPO Minimizing the Total Cost and CO_2 Emissions for a Stand-Alone Hybrid Energy System,** Lecture Notes on Data Engineering and Communications Technologies, 2021, 72, pp. 351–363.

52- Rafid M. Hannun, Ali H. Abdul Razzaq **"Air Pollution Resulted from Coal, Oil and Gas Firing in Thermal Power Plants and Treatment: A Review",** 2022 *IOP Conf. Ser.: Earth Environ. Sci.* **1002** 012008.

53- Rafid M. Hannun, Haider A. Abdulkareem, "A Review of the Use of Hydrogen Gas in Internal Combustion Engines", AIP Scopus Journal, 2023.

54- Rafid M. Hannun, Haider A. Abdulkareem, **"Experimental investigation of the effects of HHO gas on the performance and emissions of a single-cylinder gasoline engine (PRODIT)",** Eurasian Journal of Engineering and Technology (EJET), Vol (16) (ISSN: 2795-7640).

Institutional and Professional services in the last 5 years

Institutional service activities

Memberships of committees at department of Electrical and Electronic Dept.

1. Head of Exam committee.
2. Head of salary Limitation committee in College of Engineering.
3. Member of Engineering Consulting Bureau in Thi-Qar University
4. Head of purchases order committees of opening and analysing in Thi-Qar University
5. Head of storage materials calculation committee in College of Engineering.
6. Member of Central Exam committee in College of Engineering
7. Corporation with colleagues in academic and scientific committees.
8. Counsellor in UNIDO (United Nations for Industrial Development Organization) for different many projects.
9. Trainer for many courses in: HSE, OHS, Engineering planning, English language, Solar Energy, Safety and Risks, Power plants maintenance, administration, Projects, Environmental Assessments reports, Visibility, …etc.
10. Trainer of Trainers in Management of disasters, risks and resilience from United Nations Organization.
11. Head of teams for many projects in GARRAF OIL FIELD, NASSIRIYA OIL FIELD, SUBA OIL FIELD, GARRAF BRIDGE REHABILITATION and many projects outside the oil fields.
12. Head of team for NDT project with SEPCO III IN GARRAF OIL FIELD.
13. Head of team for boring ANODE for CATHODIC PROTECTION of pipe line with GRAND ENERGY DEVELOPMENT COMPANY.

Academic courses taught at Mechanical and Electrical and Electronic engineering departments and chemical science

1. Power plants engineering
2. Electrical power
3. Engineering Mathematics I and II
4. Computer sciences

Professional society activities

Refereed projects and research papers for the following journals:

1. Reviewing scientific paper for many peers journal
2. Reviewing project s
3. Reviewing many scientific theses of MSc.

Professional development activities in the last 5 years

1. Attending many conferences and workshops
2. Attending lectures

Percentage of time available for research or scholarly activities

20% Teaching, 10% project, 40% Research, 20% administrative activities,10% consultant

EMPLOYMENT RECORD:

1- Lecturer in Thi-Qar University, College of Engineering, 21/7/2008 till now.
2- Lecturer in Thi-Qar University, College of Science- (2005-2008).

ADMINISTRATIVE TASKS:

- Head of Electrical and Electronic Engineering department, College of Engineering, Thi-Qar University- (12/1/2010 -2/9/2012).
- Deputy dean of College of Engineering, Thi-Qar University- (20/12/2010 – 7/8/2016).
- Manager of Multi- specialists consulting bureau – Thi-Qar University (14/2/2016 till now).

THESIS VIVA (member and chairman of committee):

1. Gas Turbine blade study by the MSc Student Ghaith Najim Obaid
2. Modeling of solar chimney power plant in Nasiriya city by the MSc Student Muhammed Hameed Khalaf
3. Modeling of air conditioning unit in cabin by the MSc Student Ali Hussain
4. Optimization of the energy recovery system of the crude distillation unit by Farah Abd Al-salam Ibrahim (Basrah Engineering Technical college), 8/6/2017.
5. Ayat Latif Thi-Qar University
6. Ala Muhammed Lafta Thi-Qar University
7. Mudhaffer Abdulzahra PhD Thesis Basra University
8. Muntadhar Nahi Salman - MSc Thi-Qar University- 19-3-2018

9. Iltifat Lazim Edan MSc Thi-Qar University- 22-3-2018
10. Dhay Lafta, Higher diploma, 15-3-2019
11. Many viva

SUPERVISION OF POST GRADUATE STUDENTS:

1- MSc. Student: Zainab Adel Lafta (Modeling of Solar Refrigeration System) -2015-2017
2- MSc. Student: Muntadhar Nahi Selman (Modeling of Wet Cross-Current Cooling Tower by Using New Technology) 2016-2017-2018.
3- MSc. Student: Nura Ashoor Easa (Prediction of Thermal and Mechanical Stresses for Steam Turbine Rotating Parts of Nasiriya Power Plant) 2016-2017-2018.
4- PhD Student: Muhammed Hameed Khalaf (Enhancement and optimization of heat transfer for different electrical transformers) 2017-2018
5- MSc. Student: Noor Sabah Dodan (Prediction of Stresses on underground and overhead power Cables in Nasiriya city) 2017-2018-2019.
6- MSc. Student: Sara Qaiser Hamza (Modeling of efficient hybrid refrigeration system using R-134a and water with low humidity and power) 2017-2018.
7- Higher Diploma: Muhammed Mahdi Salih (Studying The Modern Methods for Increasing Power Plants Efficiency) 2017-2018.
8- MSc. Student: Mowaffaq Muhammed Jalood (Energy and Exergy study for Practical Hybrid Solar Collectors and Wind Turbine) 2018.
9- Higher Diploma: Saba Jameel Muhsin (Modeling of blood flow in the arteries and veins of the human body for different cases and diseases) 2019-2020.
10- MSc. Student: Hashim Husain Zugair (The utilization of solar energy for generation cold water from atmosphere) 2019.
11- MSc. Student: Abbas Qasim Muhammed (Optimal sizing of a hybrid renewable energy system by an artificial intelligence technique), University of Mustansiriya, Electrical engineering dept., 2019.
12- MSc. Student: Kadhim Fakhir Oudah (An artificial intelligence technique optimization of power load by using hybrid sustainable sources with grid network), AZAD Islamic University of Iran, Electrical engineering dept., 2020.
13- MSc. Student: Ahmed Habeeb ( ), Chamran University of Ahvaz Iran, Electrical engineering dept., 2020.
14- MSc. Student: Raheem Mutar Koban (The utilization of solar energy in cooking food and boiling water), 2020.
15- MSc. Student: Ali Husain Abdulrazaq (Modeling the Effect of Combustion Products of Nassiriya Power Plant on the Ambient Air of Nassiriya City), 2020.
16- PhD Student (Maseer Muayad Mohsin Maseer) Malaysia, (Solar Energy Harvesting Using Nanofluids – Based Photovoltaic Thermally Solar Collector)
17- H. D. Student: Mustafa (Comparison study for the utilization of Solar power with different positions lie in Iraq and on the equator and northern earth), 2020.
18- MSc. Student: Haider Abdulwahid Abdulkareem (Thermal Analysis Simulation for IC engines by using the produced Hydrogen fuel), 2021.
19- PhD Student (Udai) Iran, ( )2022
20- PhD Student (Udai Kadhum) , Basra University, ( )2022.

21- PhD Student (Noor Kareem Alkhursan) , Technical college Baghdad, ( )2022
22- MSc. Student: Sarmed Alaa Jasim (Separation of Hydrogen Fuel from Water by Using Solar Energy), 2022.
23-

Patents:

I have Five patents in Engineering:

1- Fabrication for Modeling of Solar Refrigeration System under Nasiriya climate conditions.
2- The device (R4) of Neuromuscular Balance for Measurement and Development in Sports.
3- Fabrication of Model for Cooling of Power Transformers by Using Geothermal Energy.
4- Modeling of New Cylindrical Cooling Tower Depends Cross Flow with High Performance.
5- Design and fabrication combined system to extract water from the air fits with the hot climatic conditions.
6- Designing and manufacturing a device for developing the speed of movement response and focusing attention under the control of muscular balance in sports

Book Authorization:

Two books in (Solar Energy Principles), 2021, Iraq,
And (Renewable Energy Principles), 2023, Iraq.