



Chemical Engineering Department, College of Engineering,  
University of Diyala, Baqubah, Diyala, Iraq

## CURRICULUM VITE (CV)



### 1. Personal Particulars:

Name	Prof. Dr. Ahmed Daham Wiheeb
Gender	Male
Date and place of birth	24. March. 1976 / Iraq – Diyala – Khalis – Al Mansouryah
Nationality	Iraqi
Marital Status	Married
Spoken languages	Arabic and English
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### 2. A. Academic and Professional Qualifications:

Qualification	Major	Institution	Country	Grade	Date earned
Bachelors (BSc)	Chemical Engineering	Baghdad University	Iraq	Good	1999
Master (MSc)	Chemical Engineering	Baghdad University	Iraq	Very good	2002
Doctoral (PhD)	Chemical Engineering	Universiti Sains Malaysia	Malaysia	Excellence	2013

### B. Titles of Postgraduate Theses:

**MSc Thesis:** Study the Factors Affecting Cells of Sodium Perchlorate Production.

**PhD Thesis:** Development and Analysis of Hydrotalcite-Modified Porous Membranes for Carbon Dioxide Separation.

### 3. Academic rank:

Rank	Date of obtained	Place of Work
Assistant Lecturer	2002	Chemical Engineering Department, College of Engineering, Tikrit University
Lecturer	2005	Chemical Engineering Department, College of Engineering, Tikrit University
Assistant Professor	2009	Chemical Engineering Department, College of Engineering, Tikrit University
Professor	2017	Chemical Engineering Department, College of Engineering, Tikrit University

### 4. Teaching Experience:

Subject Title	Class	Year
Mass Transfer	Third	2002-2009 2013-2019
Numerical Methods	Fourth	2003-2009
Engineering Drawing	First	2002-2003
Mathematics	First	2002-2003
Mass Transfer Laboratory	Third	2003-2006 2014-2015
Unit Operations Laboratory	Year	2015-2016
Numerical Methods Laboratory	Fourth	2003-2009
Principles of Chemical Engineering	First	2013-2019
Engineering Analysis	Third	2014-2016
Unit Operations	Fourth	2015-2016
Advanced Mass Transfer	MSc	2015-2019
Advanced Heat Transfer	MSc	2020-2021

### 5. Main Current Research Areas:

- I. Mass Transfer/ Separation processes/ Membrane Technology For gas Separation
- II. Ceramic/Inorganic Material Engineering / Characterization / Sol-Gel Processing  
Absorption / Adsorption.
- III. Electrochemical Engineering / Electrodepositing.

### 6. Administrative Posts:

Major	Institution	Date held
Head of Chemical Engineering Department	Tikrit University	27/11/2016 until 4/8/2019
Head of Chemical Engineering Department	Diyala University	2020 until now

## 7. Committees:

Committee Type	Position in committee
Higher studies committee	Head
Examination committee	Head
Scientific committee	Head
International Editorial Board of Journal of Chemical Engineering and Industrial Biotechnology (JCEIB)	Member
Quality insurance committee	Member
Engineering Advisory Bureau	Member

## 8. Post Graduate Supervision:

1. Rana Isam Ahmed (MSc) (Completed in **2019**), *Amino acid salt promoted aqueous potassium carbonate solution for carbon dioxide absorption from flue gas.*
2. Ramzia Majid Noori (MSc) (Completed in **2019**), *Evaluation of activated carbons derived from waste polymers via microwave irradiated for medical dyes removal from synthetic wastewater.*
3. Sanaa Rabie Ali (MSc) (Completed in **2018**), *Experimental investigation of carbon dioxide capture characteristics into binding organic liquids.*
4. Safa Waleed Shakir (MSc) (Completed in **2017**), *Experimental study of carbon dioxide removal from flue gas using aqueous solutions of amine blends in a packed column.*
5. Taif Emad Mohammed (MSc) (Completed in **2016**), *Mathematical Modeling of the Carbon Dioxide Separation from Binary Gas Mixtures through Hydrotalcite-Silica Membrane.*
6. Marwa Majeed Jumaa (MSc) (Completed in **2016**), *Parametric Experimental Study of Biodiesel Production from Vegetable Oils.*

## 9. Thesis Examiner:

1. Dnya Sharif Mohammed (**2022**), MSc, Chemical Engineering Department, Soran University, *Modeling and optimization the effect of some operating variables including feed water temperature and pressure on salt rejection % and water flux of reverse osmosis process.*
2. Alyaa Mohammed Awad (**2022**), PhD, Chemical Engineering Department, University of Technology, *Modified rheological and heat transfer characteristics of lubricating-oil produced from local refineries by nano-additions.*

3. Diyaa Jumaa Jassim (2022), PhD, Chemical Engineering Department, University of Technology, *Study on CO<sub>2</sub> capture from natural gas.*
4. Zainab Abdulmaged Khalaf (2021), PhD, Chemical Engineering Department, College of Engineering, University of Baghdad, *An optimization study on bulk liquid membrane and its resistance in heavy metal removal and recovery from wastewater.*
5. Marwa Abdul-Aziz (2021), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *Experimental Study of CO<sub>2</sub> Absorption Using Nanofluids Composed of Different Nanoparticles in Hollow Fiber Membrane Contactor*
6. Junbut Husamaldeen Mahmood (2020), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *Experimental Study of CO<sub>2</sub> Absorption Using Nanofluid in Membrane Contactor*
7. Yusra Ali Abd Al-Kodor (2019), MSc, Chemical Engineering Department, University of Technology, *Optimization and experimental evaluation for desulfurization of actual heavy crude oil.*
8. Sarmad Kamel Mohammed (2019), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *Improving of Light Fuel Quality by Air in a Batch Reactor based on a Synthetic Composite Nano Catalyst*
9. Safe Salah Hussian (2018), MSc, Chemical Engineering Department, University of Technology, *Desalting high saline oilfield produced water using membrane distillation.*
10. Ahmed Mohammed Ahmed (2017), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *Optimal design and operation of isomerization process.*
11. Haneen Thamer Shatab (2017), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *CFD analysis of circulating Fluidized bed.*
12. Sanarya Kamel Kamal (2016), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *Simulation model for improving cooling tower performance.*
13. Ewad Esa Mohamed (2016), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *Optimal design of trickle bed reactor for phenol oxidation.*
14. Sahar Adnan Ahmed (2016), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *The Dynamic Behavior and Control of Absorption column.*
15. Amer Talal Nawaf (2015), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *Experimental and Modeling Study for Desulfurization of Light Gas Oil by Catalytic Wet Air Oxidation Process.*
16. Sarah Talib Tawfeeq (2014), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *Mathematical Modeling of Polymeric membrane for CO<sub>2</sub> Separation from Natural Gas.*

17. Hiba Alaa Abdulkareem (2014), MSc, Chemical Engineering Department, College of Engineering, Tikrit University, *Effect of Distributor Design on Hydrodynamics and Mass Transfer Coefficient of Slurry Bubble Column*.

## 10. Publications:

### A. Published Papers in International Journals:

1. A.D. Wiheeb, T.E. Mohammed, S.W. Shakir, M.R. Othman. (2021). Localized molecular occupancy in membrane micropores during methane enrichment. *Special Topics & Reviews in Porous Media: An International Journal*. 12 (6)
2. Safa Waleed Shakir, Safaa Mohammed Rasheed Ahmed, Ahmed Daham Wiheeb. (2021). Improvement of CO<sub>2</sub> Absorption/Desorption Rate Using New Nano-Fluid. *International Journal of Heat and Technology*. 39 (3), pp. 851-857
3. Safa Waleed Shakir, Ahmed Daham Wiheeb, Sahar Adnan Ahmed. (2021). Tertiary amine blend for CO<sub>2</sub> capture: A kinetic investigation using Monoethanolamine, Triethanolamine and Piperazine. *IOP Conference Series: Materials Science and Engineering*. 1076 (1), 012019. [doi:10.1088/1757-899X/1076/1/012019](https://doi.org/10.1088/1757-899X/1076/1/012019)
4. S. A. Ahmed, S. W. Shakir, A. K. Mohammed, A.D. Wiheeb, Z. A. Khalaf. (2020). Improved carbon dioxide capture by nanofluids containing inorganic nanoparticles and binding organic liquid. *PERIÓDICO TCHÊ QUÍMICA*. 17 (36), 688-705.
5. S. A. Ahmed, S. W. Shakir, A. K. Mohammed, A.D. Wiheeb, Z. A. Khalaf. (2020). Improving a New binding organic liquid of nonaqueous Alkanolamine for Capturing Carbon Dioxide Using Saturated Cell. *Solid State Technology*. 63 (6).
6. R. M. Noori, A. D. Wiheeb, A. S. Othman. (2020). Adsorption of Dye Yellow No.6 from Synthetic Wastewater by Activated Carbon Derived from Waste Polymer via Microwave Irradiated. *IOP Conference Series: Materials Science and Engineering*. 2213 (1), 020106. <https://doi.org/10.1063/5.0000085>.
7. R. E. Ahmed, A. D. Wiheeb. (2019). Enhancement of carbon dioxide absorption into aqueous potassium carbonate by adding amino acid salts. *Materials Today: Proceedings*, doi.org/10.1016/j.matpr.2019.09.198.
8. A. D. Wiheeb, S. W. Shakir, M. R. Othman. (2018). Synthesis and Characterization of Mesoporous Hydrotalcite-Alumina Membrane for Carbon Dioxide Enrichment. *IOP Conference Series: Materials Science and Engineering*. 454 (1), 012107.
9. A. D. Wiheeb, S. W. Shakir, M. A. Ahmed, E. A. Rajab. (2018). Experimental Investigation of Carbon Dioxide Capturing into Aqueous Carbonate Solution Promoted

- by Alkanolamine in a Packed Absorber. *IEEE, Engineering Sciences*, DOI.10.1109/ISCES.2018.8340545.
10. A. D. Wiheeb, T.E. Mohammed, Z.A. Abdel-Rahman, M.R. Othman. (2017). Flow dynamics of gases inside hydrotalcite-silica micropores. *Microporous and Mesoporous Materials*, 264, 37-42.
  11. A. D. Wiheeb, Z. Helwani, J. Kim, M. R. Othman. (2016). Pressure swing adsorption technologies for carbon dioxide capture. *Separation & Purification Reviews*. 45(2), 108-121.
  12. Z. Helwani, A. D. Wiheeb, J. Kim, M. R. Othman. (2016). In-situ mineralization of carbon dioxide in a coal-fired power plant. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*. 38(4), 606–611.
  13. H. T Tan, Z. Helwani, A. D. Wiheeb, J. Kim, M. R. Othman. (2015). Conversion of Saga Seeds into Adsorbent and Liquid Fuel from Pyrolysis and Solvent Extraction. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*. 37, 2437–2442.
  14. Ahmed Daham Wiheeb, Mohd Azmier Ahmad, Muhamad Nazri Murat, Jin-Soo Kim, Mohd Roslee Othman. (2015). Surface Affinity and Interdiffusivity of Carbon Dioxide inside Hydrotalcite–Silica Micropores: CO<sub>2</sub> Interdiffusion inside HT– Si Micropores. *Journal of Porous Media*. 18(4), 379-388.
  15. A. D. Wiheeb, J. Kim, M. R. Othman. (2015). Highly perm-selective micro-porous hydrotalcite-silica membrane for improved carbon dioxide-methane separation. *Separation Science and Technology*. 50, 1701-1708.
  16. Z. Helwani, A. D. Wiheeb, I.K. Shamsudin, J. Kim, M. R. Othman. (2014). The Effects of Fractality on Hydrogen Permeability Across Meso-Porous Membrane. *Heat and Mass Transfer*. 51(6), 751-758.
  17. A. D. Wiheeb, M. A. Ahmad, M. N. Murat, J. Kim, M. R. Othman. (2014). Identification of Molecular Transport Mechanisms in Micro-Porous Hydrotalcite–Silica Membrane. *Transp. Porous Med.* 104(1), 133-144.
  18. A. D. Wiheeb, M. A. Ahmad, M. N. Murat, J. Kim, M. R. Othman. (2014). Predominant Gas Transport in Microporous Hydrotalcite–Silica Membrane. *Transp. Porous Med.* 102(1), 59-70.
  19. A. D. Wiheeb, M. A. Ahmad, M. N. Murat, J. Kim, M. R. Othman. (2014). The effect of hydrotalcite content in microporous composite membrane on gas permeability and permselectivity. *Separation Science and Technology*. 49(9), 1309-1316.

20. A. D. Wiheeb, M. A. Ahmad, M. N. Murat, J. Kim, M. R. Othman. (2014). The Declining Affinity of Microporous Hydrotalcite-Silica Membrane for Carbon Dioxide. *Journal of Porous Media*. 17(2), 159-167.
21. Ahmed Daham Wiheeb, Ili Khairunnisa Shamsudin, Mohd Azmier Ahmad, Muhamad Nazri Murat, Jinsoo Kim and Mohd Roslee Othman. (2013). Present technologies for hydrogen sulfide removal from gaseous mixtures. *Reviews in Chemical Engineering*, 29(6), 449 – 470.
22. A.D. Wiheeb, Martunus, Z. Helwani, I.K. Shamsudin, J. Kim, M.R. Othman. (2013). Pore morphological identification of hydrotalcite from nitrogen adsorption. *Chaos, Solitons & Fractals*, 49, 7-15.
23. Shamsudin I.K, Helwani Z, Abdullah A.Z, Wiheeb A.D, Othman M.R. (2013). Glycine as Alternative Fuel in Making Hydrotalcite Compound by Means of Combustion Method. *The Malaysian Journal of Analytical Sciences*. 17(1), 171-175.
24. Martunus, Helwani Z., Wiheeb A.D., Kim J., Othman M.R. (2012). A flow through behavior of gas across meso-porous membranes. *Microporous and Mesoporous Materials*, 163, 115-121.
25. Martunus, Helwani, Z., Wiheeb, A.D., Kim, J., Othman, M.R. (2012). Improved carbon dioxide capture using metal reinforced hydrotalcite under wet conditions. *International Journal of Greenhouse Gas Control*, 7, 127-136.
26. Martunus, Helwani, Z., Wiheeb, A.D., Kim, J., Othman, M.R. (2012). In situ carbon dioxide capture and fixation from a hot flue gas. *International Journal of Greenhouse Gas Control*, 6, 179-188.

## **B. Published Papers in Local Journals:**

1. Sanaa Rabie Saleh, Ahmed Daham Wiheeb. (2019). Kinetic Study of Carbon Dioxide Reaction with Binding Organic Liquids. *Tikrit Journal of Eng. Sciences*. 26(1), 26-32. DOI: <http://dx.doi.org/10.25130/tjes.26.1.04>
2. Ahmed Daham Wiheeb. (2018). Modeling and Optimization on the Carbon Dioxide Separation from Natural Gas Using Hydrotalcite-Silica Membrane. *Diyala Journal of Engineering Sciences*, 21(3), 39-46.
3. Zaid Adnan Abdel-Rahman, Ahmed Daham Wiheeb, Marwa Majeed Jumaa. (2017). Commercial CaO Catalyzed Biodiesel Production Process. *Al-Nahrain Journal for Engineering Sciences*, 20(4), 846-852.



4. Ahmed Daham Wiheeb, Abdul Mun'em A. Karim, Taif Emad Mohammed, Mohd Roslee Othman. (2015). Hydrogen Purification Using a Microporous Hydrotalcite-Silica Composite Membrane. *Diyala Journal of Engineering Sciences*, 8(4), 846-854.
5. Ahmed D. Wiheeb, Thaer A. Abdulla, Omar S. Lateef. (2011). Process Simulation Study of Ethyl Acetate Reactive Distillation Column by Hysys® 3.2 Simulator. *Diyala Journal of Engineering Sciences*, 4(2), 39-56.
6. Ahmed D. Wiheeb, Muzher M. Ibrahim, Maha, I. Salih. (2010). Estimating of Etchant Copper Concentration in The Electrolytic Cell Using Artificial Neural Networks. *Tikrit Journal of Eng. Sciences*. 17(2), 9-21.
7. Ahmed D. Wiheeb. (2009). The Manufacture of Perchlorate by Direct Method Using Graphite Substrate Lead Dioxide (GSLD) Anode. *Diyala Journal of Engineering Sciences*, 2(1), 66-79.
8. Ahmed D. Wiheeb, Muayad A. Shehab and Maha I. Salih. (2008). Estimating of CO<sub>2</sub> Conversion in Falling Film Reactor Using Artificial Neural Network. *Diyala Journal of Engineering Sciences*, 1(1), 86-100.
9. Saba A. Ghani, Ahmed Daham Wiheeb, Mahera R. Qasem. (2008). Mathematical Modeling of the Instantaneous Reaction of H<sub>2</sub>S MEA in a Falling Film Reactor. *Tikrit Journal of Eng. Sciences*. 15(1), 64-79.
10. Saba A.Ghani and Ahmed Daham Wiheeb. (2006). Wastewater Treatment Using Modified Alumina. *Tikrit Journal of Eng. Sciences*. 15(1), 63-81.
11. Ahmed Daham Wiheeb. (2005). Electrolytic Production of Potassium Bromate Using Graphite Substrate Lead Dioxide (GSLD) Anode. *Tikrit Journal of Eng. Sciences*. 12(4), 124-142.
12. Ahmed Daham Wiheeb and Majid I. Abdulwahab. (2003). Study of the Factors Affecting Cells of Sodium Perchlorate Production. *Iraqi Journal of Chemical and Petroleum Engineering*.

### **C. Conference Proceedings:**

1. Safa Waleed Shakir, Ahmed Daham Wiheeb, Sahar Adnan Ahmed. (2021). Tertiary amine blend for CO<sub>2</sub> capture: A kinetic investigation using Monoethanolamine, Triethanolamine and Piperazine. *IOP Conference Series: Materials Science and Engineering*. 1076 (1), 012019



2. Rana Ahmed, Ahmed Wiheeb and Sanaa Saleh. Kinetics of carbon dioxide capture into aqueous potassium carbonate promoted by glutamic acid salt. ***1st International Multi-Disciplinary Conference Theme: Sustainable Development and Smart Planning, IMDC-SDSP 2020, Cyperspace, 28-30 June 2020.***
3. Ramzia Majed Noori, Ahmed Daham Wiheeb, Ahmed Saed Othman. Adsorption of Dye Yellow No.6 from Synthetic Wastewater by Activated Carbon Derived from Waste Polymer via Microwave Irradiated. ***The 2<sup>nd</sup> International Conference on Materials Engineering and Science.*** 25/09/2019. University of Technology-Baghdad-Iraq.
4. Rana Esam Ahmed, Ahmed Daham Wiheeb. Enhancement of Carbon Dioxide Absorption into Aqueous Potassium Carbonate by Adding Amino Acid Salts. ***The 2<sup>nd</sup> International Conference on Materials Engineering and Science.*** 25/09/2019. University of Technology-Baghdad-Iraq.
5. Ahmed Daham Wiheeb, Safa Waleed Shakir, M.R. Othman. Synthesis and Characterization of Mesoporous Hydrotalcite-Alumina Membrane for Carbon Dioxide Enrichment. ***1<sup>st</sup> International Conference on Materials Engineering and Science (IconMEAS) Sciences,*** 8-9/Aug/2018, Aydin University, Istanbul – Turkey
6. Ahmed Daham Wiheeb, Safa Waleed Shakir, Mustafa Abd Elbari Ahmed, Essa Arkan Rajab. Experimental Investigation of Carbon Dioxide Capturing into Aqueous Carbonate Solution Promoted by Alkanolamine in a Packed Absorber. ***1<sup>st</sup> International Scientific Conference of Engineering Sciences (ISCES) 3<sup>rd</sup> Scientific Conference of Engineering Sciences,*** 10-11/Jan/2018, College of Engineering, University of Diyala, Iraq.
7. Ahmed Daham Wiheeb, Safa Waleed Shakir. Experimental study of mass transfer and carbon dioxide removal from flue gas into aqueous solutions of blended solvents in a packed column. ***2<sup>nd</sup> Impacts of Postgraduate Researches in Chemical Engineering on the Developing of Chemical and Petroleum Industries Horizons,*** 10-11/May/2017, University of Technology, Iraq.
8. Ahmed Daham Wiheeb, Abdul Mun'em A. Karim, Taif Emad Mohammed, Mohd Roslee Othman. Hydrogen Purification Using a Microporous Hydrotalcite-Silica Composite Membrane. ***The Second Scientific Conference of Engineering Sciences,*** 16-17/Dec/2015, University of Diyala, Iraq.
9. Ahmed Daham Wiheeb, Taif Emad Mohammed, Zaid Adnan Abdel-Rahman. Adsorption Properties of Different Gases in Microporous Hydrotalcite-Silica Composite Membrane. ***1<sup>st</sup> Impacts of Postgraduate Researches in Chemical Engineering on the***

- Developing of Chemical and Petroleum Industries Horizons*, 18-19/May/2015, University of Technology, Iraq.
10. Zaid Adnan Abdel-Rahman, Ahmed Daham Wiheeb, Marwa Majeed Jumaa. Parametric Experimental Study of Biodiesel Production from Vegetable Oil Using Heterogeneous CaO catalyst. *1<sup>st</sup> Impacts of Postgraduate Researches in Chemical Engineering on the Developing of Chemical and Petroleum Industries Horizons*, 18-19/May/2015, University of Technology, Iraq.
  11. A.D. Wiheeb, Z. Helwani, M.A. Ahmad, M.N. Murat, M.R. Othman. Recent absorption technologies for hydrogen sulfide removal: A review. *Nanomaterials Technology Specialized Conference, Universiti Teknologi Malaysia, 2012*.
  12. A.D. Wiheeb, Z. Helwani, M.A. Ahmad, M.N. Murat, M.R. Othman. Sol-gel synthesized hydrotalcite membrane supported on alpha alumina. *Nanomaterials Technology Specialized Conference, Universiti Teknologi Malaysia, 2012*.
  13. A.D. Wiheeb, Z. Helwani, M.A. Ahmad, M.N. Murat, I.K. Shamsudin, M.R. Othman. Mesoporous alumina-iron dioxide membrane from sol-gel method. *International Conference on Nanotechnology, 2012 (ICONT 2012), Kuantan, Malaysia*.
  14. A.D. Wiheeb, I.K. Shamsudin, Z. Helwani, M.R. Othman, Methanol and ammonia production: an overview. *International Conference on Environment, 2012 (ICENV 2012)*.
  15. I.K. Shamsudin, A.Z. Abdullah, A.D. Wiheeb, M.R. Othman, Improved thermal stability of glycine fueled hydrotalcite prepared from combustion method. *AKEPT 2nd global annual young researchers conference and exhibition, 2012*.
  16. I.K. Shamsudin, Z. Helwani, A.Z. Abdullah, A.D. Wiheeb, M.R. Othman, Glycine as alternative fuel in making hydrotalcite compound by means of combustion method. *Seminar Lemak dan Minyak, Langkawi, Malaysia, 7-8 Jun 2012*.
  17. Martunus, Z. Helwani, A.D. Wiheeb, M.R. Othman, Carbon dioxide fixation into soda ash utilizing continuous stirred tank reaction model. *International conference of chemical engineering and industrial biotechnology in conjunction with 25th symposium of malaysian chemical engineer (icceib-somche), 2011*.
  18. Martunus, Helwani, Z., Wiheeb, A.D., Othman, M.R., Carbon dioxide sequestration at elevated temperature by pressure swing adsorption. *3<sup>rd</sup> ISESEE, 2011 - International Symposium and Exhibition in Sustainable Energy and Environment*, art. No. 5977082, pp. 125-129.