

## CURRICULUM VITA

### PERSONAL DATA

**Name:** Hamid Mohamed Mustafa Ahmed

**Rank:** Professor

**Address:** King Saud University,  
P.O. Box 800, Riyadh 11421,  
Kingdom of Saudi Arabia.

**Phone:** +966 1 467 6854

**Mobile:** + 966507411487

### EDUCATION

- 1- Ph.D, Chemical Engineering, UMIST, England 1972.
- 2- B.Sc (Hons) Chemical Engineering, UMIST, England 1969.

### ACADEMIC RECORD WITH KSU

1. Professor, Chemical Engineering Department, College of Engineering, King Saud University, Saudi Arabia, 1997 - date.
2. Assistant Professor, College of Engineering, King Saud University, Saudi Arabia, 1980 – 1984.

### RELATE DEXPERIENCE: TEACHING, INDUSTRIAL, ETC

1. Acting Vice-Chancellor, Al Imam AlMahdi University, Sudan, 1996 – 1997
2. Professor of Chemical Engineering and Dean of the College of Engineering and Technological studies, Allmam AlMahdi University, Sudan, 1995 – 1997.
3. The Dean assigned to establish the College of Engineering and Technological studies, Al Imam AlMahdi University, Sudan. The college was established in the academic year 1994/1995 with intake for B.Sc (Hons) degrees in Chemical and Mechanical Engineering and Technical Diplomas in Food Engineering and Production Engineering, 1993 – 1995
4. Academic Secretary, University of Khartoum, 1990 – 1992
5. Deputy Dean, Faculty of Engineering and Architecture, University of Khartoum, 1989 – 1990
6. Coordinator of the Postgraduate Diploma of Sugar Technology, Department of Chemical Engineering, University of Khartoum, 1988 – 1990

7. Associate Professor, Chemical Engineering Department, Faculty of Engineering and Architecture, University of Khartoum, 1988 – 1995
8. Second Year Engineering Students Cordinator, Faculty of Engineering and Architecture, University of Khartoum, 1985 – 1989.
9. Assistant Professor, College of Engineering, King Saud University, Saudi Arabia, 1980 – 1984.
10. On Sabbatical leave, Visiting Assistant Professor, (UMIST), England, 1977 – 1978.
11. Head of Chemical Engineering Department, Faculty of Engineering and Architecture, University of Khartoum, 1973 – 1976.
12. Assistant Professor, Chemical Engineering Department, Faculty of Engineering and Architecture, University of Khartoum, 1972 – 1988.

**OTHER ACADEMIC AND WORK EXPERIENCE:**

1. Member of The National Board of Higher Education, Sudan, 1996 – 1997.
2. Secretary and Member of the Senate of the University of Khartoum and all its committees during the period 1990 – 1992.
3. Member of the Deans Committee, University of Khartoum, 1990 – 1992.
4. Member of the Faculty Board of Engineering and Architecture, University of Khartoum, 1985-1990.
5. Over thirty years experience in university teaching for undergraduate and postgraduate students and research in chemical engineering and petroleum refining engineering. Also having a wide and varied experience in higher education administration and planning, 1972 - to date.

**CONSULTING, PATENTS, MEMBERSHIP OF SCIENTIFIC PROFESSIONAL SOCIETIES ETC.**

- 1- Advisor and consultant to the PPU of the Ministry of Economics and National Planning, Sudan, on the project of Port Sudan and Sawakin water and electricity, 1988 – 1993.
- 2- Member of the committee for drafting Sudanese Specifications of Petroleum Products, 1985-1995.
- 3- Head of the committee for the establishment and curricula development of the Faculty of Engineering and Technological Studies, Allmam AlMahdi University, Ministry of Higher Education and Scientific Research, Sudan, 1994.

- 4- Chairman of the committees entrusted with the establishment and drafting of the engineering curricula for the Departments of Mining Engineering, U of K ,1990 and Petroleum Engineering,, U of K, 1993.
- 5- Member of the Executive Committee of Sudanese Engineers Union, 1990 - 1996.
- 6- Secretary and Committee Member of the Sudan Engineering Society, 1985 –1993.
- 7- Member of the Executive Committee Sudan Engineering Council, for its first session -1987.

**PARTICIPATION AND ORGANIZATION OF ENGINEERING AND SCIENTIFIC CONFERENCES AND WORKSHOPS, including:**

1. The Seventh Saudi Engineering Conference “Towards Engineering Environment to Merge in a Competitive Global Economy”, College of Engineering, KSU, Riyadh, December 2007.
2. Forum of Sudanese scientists working abroad, Khartoum, August 2003.
3. Workshop on “Updating Curricula of Basic and Engineering Sciences at Undergraduate Level”, Sudanese National Commission for UNESCO, May 1996.
4. Conference on “University Staff Development”, Khartoum, May 1992.
5. “Industrial Development – Present Status of Sudanese Industries”, Khartoum, December 1991.
6. Arkawit Conference: Socio-economic Development of Northern Sudan, Kareemah, 1976.
7. The second Iranian congress of Chemical Engineering, Arya Mehr University of Technology, Tehran, Iran, 1975.
8. The First Congress of Sudanese Engineers, Khartoum, Sudan, 1975.

**PRINCIPAL PUBLICATIONS**

- Mustafa H. M. and Alshaia T. N., “Targeting High Quality Motor Gasoline in a Saudi Refinery”, Engineering Journal of the University of Qatar vol.19, pp 25-34, 2006.
- Mustafa H.M., “Transfer Processes for Chemical Engineering”, Part II: Distillation, fractionation and refining, Arab Scientific Publishing, Bayreuth, Lebanon, 2005.
- Al-Masry W.A., Mustafa H.M., Alsugair;K.A., AbuKhalaf; A.M., “Unit Operations for Particulate Solids”, 2<sup>nd</sup> ed with modifications and additions, KUP, Riyadh, SA, 2005.

- Mustafa H.M., “Transfer Processes for Chemical Engineering”, Part I: Absorption, humidification and drying, (in Arabic), Arab Scientific Publishing, Bayreuth, Lebanon, 2003.
- Al-Masry W.A., Mustafa H.M., Alsugair K.A., AbuKhalaf A.M., “Unit Operations for Particulate Solids”, 1st edition- (Arabic), Al-Kheraijy Publishing , Riyadh, SA, 2001.
- Mustafa H.M. and Eltayeb T., “ The Evaluation of Engineering Curricula of Faculties of Engineering in Sudanese Universities and Higher Institutes (Chemical, Mining, Petroleum and Textile) ”, Publications of the National Commission of UNESCO and Ministry of Higher Education and Scientific Research, Khartoum, Sudan, 1996.
- Mustafa H.M. “Dimension in Staff Capacity and Capability”, Workshop on Staff Development, U. of K., Khartoum, Sudan, May 1992.
- Mustafa H.M. and El Amin I.H.M., “The Enhancement Factors for Absorption of Carbon Dioxide into Aqueous Solutions of Sodium Phenoxide”, J. King Saud Univ., 14(2), pp 183-196, 1988.
- Abdalla O.A. and Mustafa H.M. “Desalination option for Portsudan area”, Arkawit Conference: Socio-economic Development of Eastern Sudan, Portsudan, 1978.
- Mustafa H.M., "Industrial development for Northern Sudan", Arkawit Conference: Socio-economic Development of Northern Sudan, Kareemah, 1976.
- Ross T.K. and Mustafa H. M., “Absorption of Carbon Dioxide by Sodium Phenolic Salt Solution”, Chem. Eng. J., vol. 5, pp 261-266, 1973.

## **STUDIES AND TECHNICAL REPORTS**

Took part in and contributed to the following studies and technical reports:

- Establishment and Development of Engineering curricula for the Faculty of Engineering and Technological Studies , Al Imam Al Mahadi university, Sudan,1994.
- Refining Options for Sudan: cases of blending local Sudanese crude oils with different imported crudes. For CONCORP, Sudan, 1992-1994.
- Portsudan and Sawakin Water and Electricity Project. For the PPU of the Ministry of Economics and National Planning, Sudan, 1988-1993.

- Engineering curricula for the departments of: Mining Engineering 1990 and Petroleum Engineering, U of K, Sudan, 1993.
- Engineering curricula for the college of Engineering, Kordofan University, Ministry of Higher Education and Scientific Research, Khartoum, Sudan, 1993.
- Drafting Sudanese Specifications of Petroleum Products. For the Ministry of Industry and Energy, Sudan, 1979-1980.
- Study for the establishment of the College of Petroleum and Mining at Portsudan. For NCR, Sudan, 1976.
- Mustafa, H.M. and Elkanzi, E.M., “Prospects of Limestone Industries in Sudan “, National Council for Research Report, Sudan, 1974.
- Elkanzi, E.M. and Mustafa, H.M., “Prospects of Gypsum Industries in Sudan”, National Council for Research Report, Sudan, 1974.

#### **THESIS SUPERVISED AND EXAMINED:**

##### Supervision:

1. “Using MTBE as an Additive to Target High Quality Unleaded Motor Gasoline Production in a Saudi Refinery ”, Tariq N. Al-Shaia, M.Sc. Thesis, KSU, June 2004.
2. “An Optimum Method for Refining of Sudanese Crude Oil ”, Alaedin I.M. Tahir, M.Sc Thesis, U of K, November 1996.
3. “Design and Performance Evaluation of a Solar Vegetable Dryer ”, Fatima A/Aziz A/Ghani, M.Sc Thesis, U of K, May 1995.

##### Co-supervision:

4. “Performance Evaluation and Design Parameters of Wire Mesh Mist Eliminators in Bubble Columns ”, Abdullah S. Salih Al-Degaithir, M.Sc. Thesis KSU , 2006.
5. “Environmental Impact of Kenana Sugar Factory ”, O. TagElDin Osman, M.Sc Thesis, U of K, May 1998.

##### Examiner:

6. “Optimal Distillation Sequences for the Separation of a Mixture of Hydrocarbons” Al-Eteiby Sultan E., M.Sc Thesis, KSU, May 2006.
7. “Column Flotation of Saudi Phosphate Ore ”, Modawi S. Al-Qahtani, M.Sc Thesis, KSU, January 2001.
8. “Experimental Investigation of Scale Formation and Control in Desalination Plants”, Saad A.M. Al-Jlil, M.Sc Thesis, KSU, December, 1998.

External examiner:

9. "Process of Cooling and Its Effect on Crude Oil Pipeline Operation ", Khadijah Hashim Abdallah, Ph.D Thesis, U of K, 2006.
10. "Study of the Hydrodynamics and Mass Transfer of Oil Emulsion in a Pilot Scale Sieve Tray Column", Osman Tag Eldin Osman, Ph.D Thesis, U of K, 2005.

#### **RESEARCH PROJECTS AND ACTIVITIES:**

- 1- Research project No.69/429: "The Problems, Difficulties and Constraints facing the Petroleum Refining Industry", Research Centre, College of Engineering, KSU, 1429 H.
- 2- Research project No.35/421: "The effect of immiscible liquid and inert fine particulate solid phases on mass transfer, whether physical or when accompanied by chemical reactions", with Al-Sogayr; Y.S. and Al-Masry; W.A., SABIC grant, KSU, 1421-1423 H.
- 3- Research project No.2/419-: Writing a book in Arabic "Unit Operations of Chemical Engineering", with Al-Masry; W.A, AlSugair K.A. and AbuKhalaf; A.M., Research Centre , College of Engineering, King Saud University, 1419-1422 H.
- 4- The Impact of Sugar Factories on the Environment; "Kenana sugar factory as a case study", with Al-Hassan; B.M. and Osman; O.T. 1995-1996
- 5- The characterization and optimum refining routes of Sudanese crude oil; "Adar, Heglig and Unity" with A/Rafie; M., Tahir; A.M. and Eltahir; M.M., 1997-1998
- 6- To develop means of optimizing the operations of soap/edible oil manufacturer; "Aba El Mutasim complex of factories as a case study" with El-Awad El-Tayeb Osman, 1992-1994.

#### **INSTITUTIONAL & PROFESSIONAL SERVICE IN LAST 5 YEARS**

##### **1. Membership of the following departmental committees:**

- Promotions and appointments committee, 2004-date
- Academic committee, 2000-2003
- Committee to propose and draft syllabi for extra-mural diploma courses in chemical engineering (Food Technology, Petroleum Refining) to be offered by the college of community service, KSU, 2002.
- Committee to study and investigate the reasons and causes of relatively lower grades scored by chemical engineering students, 2001.

## 2. **General Lectures Delivered**

- Effect of chemical reactions on mass transfer rates, Sept. 2001.
- Problems facing petroleum refiners, May 2003.
- Chemical engineering under stress (extreme conditions), April 2006.

## **MAIN FIELDS OF RESEARCH**

1. Mass transfer (absorption) when accompanied by chemical reactions.
2. The effect of immiscible liquid droplets and inert fine particulate solids on mass transfer, whether physical or when accompanied by chemical reactions.
3. Tray efficiencies of distillation and fractionation units.
4. Search for new additives for quality improvement of motor gasoline.
5. The effects of fuel additives on the environment and human health.
6. Problems facing Petroleum Refiners.
7. Means of optimizing the operations of chemical process industries (e.g. soap\edible oil manufacturer).
8. Natural resources development (e.g. utilization of byproducts of the cane sugar industry).

## **COURSES TAUGHT AT KSU**

### **Undergraduate Program Courses:**

1. CHE **309** Unit Operations
2. CHE **403** Chemical Engineering Laboratory 2
3. CHE **411** Separation Processes 2
4. CHE **441** Petroleum Refining Engineering
5. CHE **445** Petroleum Refining for students of the Department of Petroleum Engineering
6. CHE **498** Graduation Project-1
7. CHE **499** Graduation Project-2

### **Graduate Program Courses**

8. CHE **511** Advanced Transport Phenomena
9. CHE **541** Advances in Petroleum Refining