Dr. Mohamed ALNAKOUA
OJT Instructor (Process/Operations), *DAS Training Center, DAS Island, ADNOC Offshore, UAE*
Email: manakoua@yahoo.co.uk, Cellphone: +971529164333, +971505639737

PROFESSIONAL SUMMARY

I am a chemical (M.Sc. & Ph.D.) and petroleum engineer (B.Sc.), with over 35+ years of portfolio experience in training, teaching and industrial. My expertise lies extensively in the areas of oil and gas: operation, production, mechanical, design, process engineering, installations, water injection, gas processing, plant start-up, commissioning, well testing, maintenance, corrosion, and hands-on training (OJT). I have a broad oil and gas understanding, onshore and offshore, across a wide range of upstream/downstream disciplines, in a variety of roles, from a junior engineer to an advisor. My technical skills are supported by extensive management experience as a deputy dean, department head and group head supervisor. I have delivered numerous trainings, courses, seminars and conferences. I had contributed to the knowledge of hundreds of students, operators, fresh graduates and engineers. My area of expertise covers; Natural Gas Processing and Utilization, Phase Behavior, Oil and Gas Production Optimization, Modeling of Gas-Liquid Reactions and Catalytic Plate Reactors.

1. EDUCATION

Ph.D. In **Chemical Engineering**, Newcastle University, Newcastle upon Tyne, UK, June, 2004. ***Thesis***: "*Syngas Production Processes on Thin Film Catalysts for use in Catalytic Plate Reactors*"

M.Sc. In **Chemical Engineering**, Tripoli University (formerly Al-Fateh University), Tripoli, Libya, April, 1996. ***Thesis***: *"Simulation of Gas Absorption with Chemical Reaction Processes"*

B.Sc. In **Petroleum Engineering**, Tripoli University (formerly Al-Fateh University), Tripoli, Libya, March, 1985. ***B.Sc. Project***: *"Artificial Lift Study"*

2. EMPLOYMENT HISTORY

COMPETENCY DEVELOPMENT POSITION:

People Development Division, ***ADNOC Offshore*** *(formerly ADMA-OPCO&ZADCO),* Abu Dhabi, UAE

a) Oct 17- up-to-date OJT Instructor (Process), Vocational Training, Das Training Center, Das Island.

- To develop technical training models in accordance with the job competency requirements and the identified-On Job Training requirements.
- To provide any required supply for development and verification of new Competency Based Development Programs for all site jobs in the Production/Process disciplines.
- To develop On Job Training Plans and assist in updating the job competency training models.
- To assist in preparing required training materials for the Production/Process discipline in co-ordination with the Line Supervisor.
- To manage, deliver and monitor the training activities (classroom/on job).
- To assess the Juniors attending the Basic Course and prepare their Quarterly Progress Reports (QPRs).

- To identify organizational training needs, co-ordinate with Line Supervisor and prepare remedial action plans.
- Conducted Introduction to Oil and Gas Technologies course to new Entry Point Employees (EPEs), as well as sites personnel, on quarterly basis (this year and last year's sessions were conducted virtually).
- Delivered Sea Water Desalination course virtually.
- Delivered Youth Development Program (YDP) Assessors Course at HQ, sites and virtually.
- Delivered Natural Gas Gathering and Processing course to ADNOC LNG.

b) Sept 15- Sep 17 Team Lead, Advisor and OJT Instructor (Process), MDCD-Sites: Zirku Island & Artificial Islands.

- Conduct new employee orientation, on job/classroom training.
- Issuing and implementing of PDPs/DFW for Technicians, Operators and CAMS personnel.
- Coordinating of all staff development programs (CAMS, PDPs & CAS).
- Coordinating internal & external attachments.
- Monitoring/facilitating real work assignments for employees under development.
- Providing counselling support for employees under development.
- Responsible to oversee and implement the OJT program for employees. This includes training and observation of trainees with respect to their performance against established training objectives and recommendation of additional skill requirements as training needed.
- Uploaded assessment records in HRMS and all related documentation. Maintain organized log(s) of all assessment forms. Maintain files of training materials.

c) Sept 12- Aug 15 Competency Assurance Advisor, MDCD-HQ

- Designed and implemented UAE Nationals Learning & Development Processes, strategies, tools, assessment and follow up systems for achieving Emiratization targets.
- Conducted periodic review and updated Learning & Development systems to ensure its effectiveness and relevance to company needs.
- Prepared Competency Based Development Programs/Personal Development Plans (PDPs) for the Developees (Petroleum, Reservoir, Geoscience).
- Provided guidance and support to the employees and line managers in implementation of the PDPs.
- Provided cost effective, and innovative solutions to learning & development needs of the UAE Nationals.
- Recommended suitable training courses for ZADCO employees, evaluate course contents and instructor's qualifications.
- Designed and implemented special, customized programs for ZADCO needs, at par with international standards.
- Supervised Instructor/Trainers led classroom activities, and On Job Training (OJT)/Development activities.
- Planed, organized and facilitated the assessments of the Developees as per relevant ZADCO/ADNOC standards, and provide supportive feedback to strengthen the development of competencies (CAMS Program).
- Liaised within HRT and with various teams in connection with learning & development and assessment exercise (Integration & Graduation Panels).
- Liaised with reputed training providers, academic institutions and leading organizations to provide suitable learning & development opportunities to the Developees.
- Followed up on Quarterly Progress Reports (QPRs) of the Developees.
- Participated in several technical meetings and followed up on recommended actions.
- Demonstrated professional behavior and a caring attitude towards the candidates.
- Promoted learning & development culture across ZADCO.
- *Delivered Introduction to Oil and Gas Course to ZADCO Employees on monthly basis.*
- Served as a Job Officer, Mentor and Secretary of Steering Committee Specialist Program (Subsurface: Reservoir Simulation, PVT, SCAL, Geo-Modeling).

FACULTY POSITION:

Sept 06-June 12 Visiting (1 year) & Assistant Professor, Department of Chemical and Petroleum Engineering, United Arab Emirates University, Al Ain, UAE.
Sept 04-July 06 Lecturer, Department of Chemical Engineering, Al-Merghib University, **Al**-Khomes-Libya.
Sept 96-Dec 99 Lecturer, Department of Chemical Engineering, Nasser University, Al-Khomes-Libya.
Mar 96-July 99 Part Time Lecturer, Aeronautical Academy-Mesiratha/Higher Institute, Department of Chemical Engineering-Tripoli/Higher Institute-Al-Khomes, Libya.

RESEARCH AND DEVELOPMENT:

Aug 00-June 04 Researcher & Demonstrator, Centre for Process Intensification and Innovation, Newcastle University (UK).

- Evaluated and modeled methane reforming experimental results.
- Developed a catalytic plate reactor design.
- Conducted steam, dry reforming, and partial oxidation of methane and combined of the latter processes using a catalytic plate reactor coated with a thin layer of catalyst.
- Performed steam reforming and reforming-combustion coupling experiments in a catalytic plate reactor (HEXR), the work being sponsored by British Gas (Advantica Technology).
- Executed diesel-reforming experiments in a catalytic plate reactor, the work being sponsored by Marine Engineering Department.
- Designed and set up experimental rigs and data logging facilities with computer.
- Calibrated lab equipment and instrumentation.
- Prepared and developed catalysts recipes using sol gel technique.
- Planed and followed up catalyst and coke characterizations (BET surface area, PSD, TGA, SEM, XRD, EDX)
- Studied sol gel rheology and developed coating techniques.

June 90-Sept 96 Research Associate & Lab Engineer, Petroleum Research Center of NOC (At Present Libyan Petroleum Institute), Tripoli, Libya.

- Introduced a correlation for gas-liquid interfacial area estimation.
- Applied a model for calculating actual number of plates in industrial columns *(gas sweetening)*.
- Developed a mathematical model for absorption accompanied by chemical reaction of H_2S and CO_2 in amine solutions.
- Collected and evaluated field data from plants for natural gas sweetening in the Libya's oil and gas industries.
- Accomplished routine and research work in the *core, pressure, volume and temperature (PVT) and drilling fluids laboratories.*
- Contributed in a comprehensive study on CO_2 miscibility and swelling used in the enhanced oil recovery (*EOR*), the work being sponsored by Sirte Oil Company.
- Managed staff and research programs in production decline analysis, drilling rate models and well stimulation (*acidizing*).
- Headed the Drilling and Production Research Section.

PROCESS INDUSTRY: OIL & GAS INDUSTRY:

Nov 85-May 90 Group Head Supervisor & Production Engineer, Sirte Oil (formerly Esso Standard) Company, Marsa Brega, Libya.

- Superintend and guided personnel to implement a miscellaneous of field and plant works.
- Appraised and promoted over a group of 30 people.
  Jabal Water Flooding Plant: (The plant asset is over 60 million U.S. $.)
- Coordinated with project engineers and commissioned plant installations and machines.

- Liaised with Project, Maintenance and Process Engineers during start up preparation.
- Witnessed plant equipment commissioning: Turbines, Pumps and Compressors. Certified unit's delivery and conveyance, tested and optimized each plant segment efficiency.
- Handled plant startup, optimized and improved the operation of plant (*Process Engineering*) and equipment functioning.
- Managed day to day operations, including process safety (HSE).
- Prompted related plant duties including a regular maintenance of equipment and systems; pumps, filters, water treating facilities, power system and injection lines.
- Analyzed and interpreted laboratory and plant data.

Jabal Field

- Balanced day to day operational and maintenance of oil and water injection wells.
- Advised on field safety and environmental issues (*HSE*).
- Followed up well testing, production and servicing, wellhead repair, wireline works and field data reporting and documentation.
- Arranged projects for the implementation of several well stimulation, testing and workovers works.
- Trained operators and fresh graduates (OJT)

Company's Gas and Oil Fields, Production Engineer

- Run tasks in gas treating and dehydration plant include the running of the unit's; dehydration and sweetening towers, glycol, amine unit and compressors.
- Engaged in supervising and solving problems in gas lift injection lines and valves.
- Associated in daily work at gas, oil and water separation plant; separation manifolds, emulsion treating, meter batteries, storage tanks and pumping station.
- Operated a daily routine field work; measuring flow rates, well testing, pressure and temperature reading.
- Completed the proposed orientation program around gas and oil areas.

RLEVANT PROFESSIONAL ACTIVITIES:

July 04-Sep 04 Consultant, **Human Resources Department of NOC**, **Libya.**

- Planned programs for junior chemical engineers to be trained to meet the demands of qualified national workforce needed by industry
- Organized and run full time training courses designed to meet the above requirements.

Feb 06-Aug 06 Consultant, **Libyan Petroleum Institute of NOC**, **Libya.**

- Proposed research programs.
- Demonstrated catalyst synthesis.
- Introduced novel reactor design.

3. FUNDED RESEARCH

Pending Fund:

1. Principal Investigator, *CO2 Utilization to Synfuels (GTL) using Intensified (Compact) Reactor***.**
2. Principal Investigator, *Simulation of Gas Sweetening Columns.*

Completed Projects:

1. Principal Investigator, January 2008- January 2009, "*Applications of Intensified Catalytic Plate Reactor in Methane Reforming; Phase I: Catalyst Preparation and Characterization"*, Individual Research Grant, Research Affairs, UAE University.
2. Principal Investigator, March 2009-June 2010, "*Applications of Intensified Catalytic Plate Reactor in Methane Reforming; Phase II: SynGas Production by Partial Oxidation of Methane"*, Individual Research Grant, Research Affairs, UAE University.
3. Principle Supervisor, "*Phase behavior calculation in crude oil systems*" M. Sc. Thesis Research Proposal.
4. Principle Supervisor*, "CO2 utilization to synfuels using intensified (compact) reactor",* Interdisciplinary Research Projects, UAE University, (120,000 Dhs).
5. Co-Investigator*, "Evaluation of Mobilization Efficiency in EOR/IOR Floods for Carbonate Reservoirs; CO2 miscibility and swelling",* the work being sponsored by ADNOC Onshore.

4. TEACHING EXPERIENCE

- ***Postgraduate Courses*** Taught at United Arab Emirates University (UAEU)/UAE
  Advanced Reaction Engineering, Ph.D. & M.Sc. level (UAEU).
- ***Undergraduate Courses*** Taught at United Arab Emirates University (UAEU)/UAE, Al-Merghib University (MU)/Libya, Nasser University (NU), Libya, Higher Institute, Tripoli (HIT)/Libya, Higher Institute, Al-Khomes (HIK), Libya and Aeronautical Academy, Mesiratha (AAM), *Libya.*

  1. Natural Gas Processing (UAEU & NU)
  2. Introduction to Petroleum Engineering (UAEU)
  3. Petroleum Fluid Properties (UAEU)
  4. Separation and Treatment of Petroleum Fluids (UAEU)
  5. Transport and Storage of Petrol (UAEU)
  6. Petroleum Production Operations (UAEU)
  7. Petroleum Refining Engineering UAEU)
  8. Secondary Recovery Methods (UAEU)
  9. Petroleum Property Evaluation (UAEU)
  10. Chemical Engineering Laboratory-II (UAEU)
  11. Water Desalination (UAEU)
  12. Mass Transfer-I (MU & NU)
  13. Mass Transfer-II (MU & NU)
  14. Chemical Reaction Engineering I (MU & HIT)
  15. Chemical Reaction Engineering II (NU & MU & HIT)
  16. Heat Transfer (AAM)
  17. Fluid Mechanics II (MU)
  18. Boundary Layer (AAM)
  19. Computer Applications (MU)
  20. Chemistry and Engineering Applications (UAEU)
  21. General Chemistry (HIK)

- ***B.Sc. Projects Advisor*:**
  1. Design of Gas/Water Injection Plant
  2. Liquefied Natural Gas (LPG) Plant Design
  3. Gas to Liquid (GTL) Plant Design
  4. Design of Oil Production Surface Facilities
  5. Artificial Lift Design for Oil Wells
  6. Syngas Production Plant Design
  7. Natural Gas Sweetening Plant Design
  8. Fischer-Tropsch Synthesis Plant Design
  9. Natural Gas Dehydration Plant Design
  10. Liquefaction of Natural Gas Plant Design
  11. Design a technique for influence of CO_2 flooding on sulfur deposition and oil recovery

5. COMPUTER SKILLS

1. Advanced use of everyday Software e.g., Microsoft Office: Excel, Word, PowerPoint; Outlook; Access, MS Teams.
2. Good working knowledge of various packages (Software's): Phase Equilibrium, Stanjan, Hysys and HSC Chemistry.
3. Extensive experience in FORTRAN (MSc thesis).

6. MAJOR GRADUATE COURSE WORK TAKEN AT TRIPOLI UNIVERSITY (FORMERLY ALFATEH UNIVERSITY)

- Advanced Math for Engineers - Advanced Heat Transfer - Finite Element Methods
- Advanced Reaction Engineering - Advanced Fluid Mechanics - Advanced Thermodynamics
- Advanced Mass Transfer

7. COURSES TAKEN, WORKSHOPS AND SEMINARS ATTENDED

1. Petroleum Technology Course, September-November 1986, OMV, Austria.
2. Attended several seminars, workshops and short courses related to petroleum and chemical industry.

8. SHORT COURSES AND SEMINARS GIVEN

1. Introduction to Oil and Gas Technologies (4 days course) delivered more than 50 times (Jan 2013 up-to-date) to ADNOC Offshore (ADMA-OPCO&ZADCO) employees/new hire/EPEs.
2. Beam Pumps, Production and Completions Engineering in Thermal Heavy Oil, Barcelona/ Spain; 19 - 23 December, 2011.
3. Oil Production and Processing Facilities, Barcelona/ Spain; 12 - 16 December, 2011.
4. Introduction to Oil and Gas Production, Secretariat of Human Resources and Vocational Training, August, 2005, Tripoli, Libya.
5. GTL and the possibility of using the technology in Libya & UAE (seminar).

9. DEPARTMENT & COLLEGE COMMITTEE ACTIVITIES

- ***@ United Arab Emirates University***

1. Examiner of the PhD Qualification Exams (Reaction Engineering/Reactor Design)
2. Editorial Committee, Emirates Journal for Engineering Research
3. Member, Department Course Improvement & Outcome Assessment Committee
4. Department ABET Accreditation Committee
5. Member, Department, Laboratory, Safety, and Space Committee
6. Coordinator for Petroleum Engineering Field Trips (course-related*)* Committee
7. Member, Department Research Committee
8. SPE Students Chapter Advisor
9. Industrial Training Supervisors
10. Student Academic Advisor for Chemical Engineering Classes of 2002 (males) and 2007 (females)
11. Chemical Engineering Laboratory-I&II Course Outline Preparation in ABET Format Committee

- ***@ Al-Merghib University***

1. Department Head Deputy
2. Department Graduate Studies Coordinator
3. Final Year Project Coordinator

- ***@ Nasser University***

1. Deputy Dean
2. Faculty of Engineering Board
3. Final Exams Coordinator
4. First B.Sc. year Coordinator

10. PROFESSIONAL SOCIETIES AND ORGANIZATIONS MEMBERSSHIPS

- SQA SCN #: 207 332 631.
- Society of Petroleum Engineers, (SPE International), Member, 31st May 2008-Dec 2012.
- The Institution of Chemical Engineers, Associate Member, London 2001-2004.

11. HONORS AND AWARDS

- Recipient of the Libyan Secretariat of Education Scholarship for Ph.D. program, 2000-2004.
- Recipient of Petroleum Research Centre of Libya Scholarship (part time) for Master's program, 1991-1996
- Distinction Honor, Tripoli University (formerly Al-Fateh University), Tripoli, Libya, April, 1996.

12. PUBLICATIONS

1. **Mohamed Alnakoua**, Basim Abu-Jdayil and Haitem Hassan, "Probe reactor for partial oxidation of methane over Ni/Al2O3 catalysts", *to be submitted for publication soon*.
2. Papa.M. Ndiaye, Abdulrazag Y. Zekri, **M. Nakoua**, et. al., "A New Two Stages Recombination Process for Crude Oil: Simulation and Experimental Approach", International Journal of Engineering Research and Science & Technology (IJERST), ISSN 2319-5991, Vol. 3, No. 4, November 2014.
3. Papa.M. Ndiaye, Abdulrazag Y. Zekri, **M. Nakoua**, et. al., " Phase Behavior of UAE Crude-Oil/Carbon Dioxide System at Reservoir Temperature", International Journal of Modern Sciences and Engineering Technology (IJMSET), Vol. 1, Issue 4, pp 96-104, 2014.
4. **M. A. Al Nakoua** and M. H. El-Naas, " CO_2 Reforming of Methane in a Probe Reactor with a Thin Catalyst Layer", *International Journal of Engineering Research & Technology (IJERT)*, Vol. 3, Issue 2, pp 1885-1888, February - 2014.
5. B. Abu-Jdayil, **M. A. Al Nakoua** and M. H. El-Naas, Abbas Khaleel, "Rheological characteristics of nickel–alumina sol–gel catalyst", *Journal of Fuel Processing Technology,* Vol. 102, Issue 10, pp85-89, 2012.
6. **M. A. Al Nakoua** and M. H. El-Naas, "Combined steam and dry reforming of methane in narrow channel reactors" *International Journal of Hydrogen Energy* , Vol. 37, Issue 9, pp7538-7544, 2012.
7. **M. A. Al Nakoua**, "Steam Reforming of Methane over Ni/Al_2O_3 Catalysts in a Probe Reactor", *Proceeding of the 2nd International Conference on Chemical Engineering and Applications (CCEA 2011)*, Maldives, November 25-26, 2011.
8. **M. A. Al Nakoua**, M. H. El-Naas, and B. Abu-Jdayil, "Preparation and Testing of Sol-Gel Catalysts in a Plate Reactor", *Journal of Fuel Processing Technology,* Vol. 92, Issue 10, pp1836-1841, 2011.
9. **M. A. Al Nakoua** and M. H. El-Naas, "Probe and Channel Reactors with a Thin Catalyst Layer" *Proceeding of the 13th Asian Pacific Confederation of Chemical Engineering Congress*, Taipei, October 5-8, 2010.
10. **M. A. Nakoua** and M. H. El-Naas, **"**Methane Reforming in a Small Channel Reactor", *Proceeding of the International Conference on Chemical, Biological, & Environmental Engineering, CBEE 2009, WORLD SCIENTIFIC,* Singapore, October 9-11, 2009.
11. **M. A. Nakoua** and M. H. El-Naas, **"**Characterization of Thin Film Ni/Al_2O_3 Catalysts for Use in Plate Reactors", the Tenth UAEU Annual Research Conference, Al Ain, April 2009.
12. **M. A. Nakoua** and M. H. El-Naas, "GTL Feed by Catalytic Oxidation of Methane in Plate Reactor", *Proceeding of the 1st Annual Gas Processing Symposium, ELSEVIER*, Qatar, January 10-12, 2009.
13. **M. A. Nakoua** and M. M. Dribika, "Modeling of Natural Gas Sweetening Absorbers", *the 3rd International Forum and Exhibition (TOG 2006)*, Libya, September 12-14, 2006.
14. **M. A. Nakoua,** M. M. Dribika, A. Gough and C. Ramshaw, "Combined Steam and CO_2 Reforming of Methane over Sol-Gel made Ni-Cr-Ba/La_2O_3-Al_2O_3 Catalyst for use in a Catalytic Plate Reactor", *The 3rd International Forum and Exhibition (TOG 2006)*, Libya, September 12-14, 2006.
15. **M. A. Nakoua,** M. M. Dribika, A. Gough and C. Ramshaw, "Hydrogen Production on Highly Active and Stable Ni/Al_2O_3 Catalyst for use in a Channel Reactor", *The 11th Asian Pacific Confederation of Chemical Engineering Congress*, Malaysia, August 28-30, 2006.
16. **M. A. Nakoua,** M. M. Dribika, and M. Besher, "Gas-Liquid Interfacial Area in Valve and Bubble Cap Tray Column", *Journal of Chemical Engineering of Japan*, Vol. 32, No.1, pp126-129, 1999.
17. **M. A. Nakoua,** M. Besher and M. M. Dribika, "Simulation of Absorption of H_2S and CO_2 into Alkanolamine in Tray Columns", *Proceeding of Second Maghrebian Conference on Process Engineering*, Tunisia, Theme II, pp 597-600, April 22-25, 1996.

13. REFERENCES

To be provided upon request.