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EDUCATION

Ph.D. (Chem. Eng.), 2001, University of Colorado, Boulder, USA,
Dissertation: " **Design and Optimization of Ethylene Production Utilizing New Technologies** "

Supervision: Prof. Klaus D. Timmerhaus and Prof. Richard D. Noble

M.Sc. (Chem. Eng.), 1992, University of Colorado, Boulder, USA
Awarded **Ambassador's Honor Award**

B.Sc. (Chem. Eng.), 1990, King Saud University, Riyadh, Saudi Arabia
Awarded **First Class Honor**

ACADEMIC

Assistant Professor, 2001– Present

EXPERIENCE

Dept. of Chemical Engineering, King Saud University, Riyadh, Saudi Arabia.

Teaching Assistant, 1990-1991

Dept. of Chemical Engineering, King Saud University, Riyadh, Saudi Arabia.

INDUSTRIAL

Training at Al Jubail Desalination Plant,

EXPERIENCE

May 1989-August-1989

Developed a thorough working knowledge of all processes and aspects of the world's largest desalination plant.

CONSULTATION

Global ChemTech Company, 2005- Present

RESEARCH INTERESTS

- Process Synthesis
- Simulation, Modeling and Optimization
- Hybrid Systems
- Heat Integration Using Pinch Analysis
- Membrane Reactors
- Facilitated Transport Membranes
- Fine and Speciality Chemicals
- Economic Evaluation and Profitability Analysis

MEDIA

- “Distillation Joined with Facilitated Transport,” Membrane & Separation Technology News, Vol. 17, No. 8, 7-8, BCC, Inc. Publication, April 1999.
- “Meeting News: By John Lewis,” Membrane Quarterly, Vol. 14, No. 3, 26, NAMS, July 1999.

PROFESSIONAL AFFILIATIONS

- American Institute of Chemical Engineers (*AIChE*), Member
- North American Membrane Society (*NAMS*), Member

HONORS AND AWARDS

- Ambassador’s Honor Award (University of Colorado, Boulder)
- First Class Honor (King Saud University)

SPONSORED RESEARCH PROJECTS

- ***Utilization of a Hybrid Membrane System for Propane/ Propylene Separation in Ethylene plants***
Sponsored by ***Research Center, College of Engineering, King Saud University***
Status: ***Completed***
- ***Membrane Technology for Hydrogen Separation in Ethylene Plants***
Sponsored by ***SABIC***
Status: ***Completed***

- **Production of Alkenyl Succinic Anhydride in Saudi Arabia Using C12 Alpha Olefins. (Projects No. 151).**
Sponsored by **SABIC** through King Abdullah Institute for Research & Consulting
Status: **Completed**
- **Production of Alkenyl Succinic Anhydride in Saudi Arabia Using C14-C18 Alpha Olefins. (Projects No. 152).**
Sponsored by **SABIC** through King Abdullah Institute for Research & Consulting
Status: **Completed**
- **Production of ADA in Saudi Arabia Using C12 and C14-C18 Alpha Olefins. (Projects No. 153 and 154).**
Sponsored by **SABIC** through King Abdullah Institute for Research & Consulting
Status: **Completed**
- **Production of Plasticizer Alcohols in Saudi Arabia from Linear Alpha Olefins (LAO) Project No. 155**
Sponsored by **SABIC** through King Abdullah Institute for Research & Consulting
Status: **Completed**
- **Production of Detergent Alcohols in Saudi Arabia from Linear Alpha Olefins (LAO) Project No. 156**
Sponsored by **SABIC** through King Abdullah Institute for Research & Consulting
Status: **Completed**
- **Performance of Polymer Modified Bitumen (PMB) Based on Local Bituminous Materials**
Sponsored by **Transport Ministry** through King Abdullah Institute for Research & Consulting
Status: **Ongoing**
- **Down Stream Products from Polycarbonate Resin**
Sponsored by **SABIC** through King Abdullah Institute for Research & Consulting
Status: **Ongoing**

COURSES TOUGHT

- CHE 551 Advanced Topics in Chemical Engineering “Energy Optimization Using Pinch Analysis”.
- CHE 421 Plant Design and Economics for Chemical Engineers.
- CHE 321 Computer Aided Design for Chemical Processes.
- CHE 311 Heat Transfer.
- CHE 314 Simultaneous Heat and Mass Transfer.

SUPERVISION

- “Nitrogen Removal from Natural Gas Using Membrane Technology”, Master Thesis.
- “Ethylene Production Utilizing Membrane Reactors”, Master Thesis.

INSTITUTIONAL SERVICES

- Computer Lab Committee, Chem. Eng. Dept., Head, 2002-2005.
- Undergraduate Projects Committee, Chem. Eng. Dept., Head, 2003-present
- Students Affairs Committee, Engineering College, 2003-2006
- Scientific Committee, Member, LABTECH Conference (Aramco), 2007.

SELECTED PUBLICATIONS AND PRESENTATIONS

1. Al-Rabiah and A. Ajbar, "Study of the Operability of a Continuous Bioreactor for the Pre-Fermentation of Cheese" *Engineering in Life Sciences* (in Press).
2. Abashar, M.E.E.; Al-Rabiah, A.A. "Production of Ethylene and Cyclohexane in a Catalytic Membrane Reactor", *Chemical Engineering and Processing, Volume 44, Issue 11, 1 November 2005, Pages 1188-1196*.
3. Abashar, M.E.E.; Al-Rabiah, A.A. "Novel Multi-shell Membrane Reactors for Efficient Dehydrogenation of Ethylbenzene", *Engineering Sciences, Journal of KSU, Volume 18, No.1, 2005*.
4. Al-Rabiah, A. A., "Optimization of a Commercial Olefin Plant Using Pinch Analysis," CHISA 2004, Session H1, Paper 6, 22-26 August 2004, Prague - Czech Republic.
5. Al-Rabiah, A. A., "Membrane Technology for Hydrogen Separation in Ethylene Plants," 4th Ibero-American Congress on Membrane Science and Technology (*CITEM*), Brazil, July 16-18, 2003.
6. Al-Rabiah, A. A., "The Use of Hybrid Membrane/Distillation System for the Ethane/Ethylene Separation in Olefin Plants," 4th Ibero-American Congress on Membrane Science and Technology (*CITEM*), Brazil, July 16-18, 2003.
7. Al-Rabiah, A. A., "Membrane Technology for Hydrogen Separation in Ethylene Plants," 4th European Congress of Chemical Engineering, Spain, September 21-24, 2003.

8. Al-Rabiah, A. A., "The Use of Hybrid Membrane/Distillation System for the Ethane/Ethylene Separation in Olefin Plants," 4th European Congress of Chemical Engineering, Spain, September 21-24, 2003.
9. Al-Rabiah, A. A., "Heat Integration of the Commercial Ethylene Process," 4th European Congress of Chemical Engineering, Spain, September 21-24, 2003.
10. Al-Rabiah, A. A., Timmerhaus, K. D., and Noble, R. D., "Membrane Technology Use in Low-Temperature Hydrogen Recovery Section of the Ethylene Process," ICR0433, XXI IIR International Congress of Refrigeration, Washington, DC, USA, August 17–22, 2003.
11. Al-Rabiah, A. A., Timmerhaus, K. D., and Noble, R. D., "Design and Retrofit of the Refrigerated C₂ Splitter in an Ethylene Plant with a New Hybrid Separation System," 6th World Congress of Chemical Engineering, Melbourne, Australia, September 23-27, 2001.
12. Al-Rabiah, A. A., Timmerhaus, K. D., and Noble, R. D., "Membrane Technology for Hydrogen Separation in Ethylene Plants," 6th World Congress of Chemical Engineering, Melbourne, Australia, September 23-27, 2001.
13. Al-Rabiah, A. A., Timmerhaus, K. D., and Noble, R. D., "Retrofit Analysis of Replacing the C₂ Splitter in an Existing Ethylene Plant with a Hybrid Separation System," 76th Annual Meeting of American Association for Advancement of Science, Physical Sciences Session, Paper No.5, Las Cruces, New Mexico, April 9-12, 2000.
14. Al-Rabiah, A. A., Timmerhaus, K. D., and Noble, R. D., "Retrofit of the Refrigerated C₂ Splitter in an Ethylene Plant with a New Separation System," *AIChE 2000 Spring National Meeting*, Paper 55e, Atlanta, GA, March 5-9, 2000.
15. Al-Rabiah, A. A., Timmerhaus, K. D., and Noble, R. D., "Modeling and Simulation of Several Hybrid Distillation Systems for the Ethane/Ethylene Separation," *AIChE Annual Meeting*, Paper 221j, Dallas, Texas, November 1-5, 1999.
16. A. A. Al-Rabiah, K. D. Timmerhaus, and R. D. Noble, "Modeling and Simulation of Several Hybrid Distillation Systems for the Ethane/Ethylene Separation," *Proceedings of 20th International Congress of Refrigeration*, Session T1.5, Paper No. 070, Sydney, Australia, September 19-24, 1999.
17. A. A. Al-Rabiah, K. D. Timmerhaus, and R. D. Noble, "Investigation of Several Hybrid Distillation Systems for the Ethane/Ethylene Separation," *The International Congress on Membranes and Membrane Processes (Icom99)*, Session P5 (Hybrid Processes), Paper No. 2, Toronto, Canada, June 12-18,

1999.

18. A. A. Al-Rabiah, K. D. Timmerhaus, and R. D. Noble, "The Use of Hybrid Distillation for the Ethane/Ethylene Separation," *75th Annual Meeting of American Association for Advancement of Science*, Paper No. 128, Santa Fe, New Mexico, April 11-15, 1999.
19. Al-Rabiah, A. A., Timmerhaus, K. D., and Noble, R. D., "Investigation of Several Hybrid Distillation Systems for the Ethane/Ethylene Separation," *AIChE Spring National Meeting*, Paper 93b, Houston, Texas, March 14-18, 1999.
20. A. A. Al-Rabiah and K. D. Timmerhaus, "Development of a Hybrid Propane/Propylene Splitter in the Ethylene Process," *74th Annual Meeting of American Association for Advancement of Science*, Physical, Engineering and Information Sciences Session, Paper No. 2, Grand Junction, Colorado, May 17-21, 1998.
21. A. A. Al-Rabiah, K. D. Timmerhaus, and R. D. Noble, "Utilization of a Hybrid Membrane System in Ethylene Production," Presented at the *Tenth Annual Meeting of the North American Membrane Society (NAMS 98)*, Hybrid Processes Session, Paper No.3, Cleveland, May 16-20, 1998.
22. Al-Rabiah, A. A., Timmerhaus, K. D., and Noble, R. D., "Utilization of a Hybrid Membrane System in Olefin Production," *Proceedings of the 8th Ethylene Producers' Conference*, Vol. 5, 619-624, *AIChE*, New York, NY, 1996.
23. Al-Rabiah, A. A., Timmerhaus, K. D., and Noble, R. D., "Utilization of a Hybrid Membrane System in Olefin Production," *Proceedings of 5th World Congress of Chemical Engineering*, Vol. 4, 335-340, San Diego, CA, July 1996.
24. Al-Rabiah, A. A., Timmerhaus, K. D., and Noble, R. D., "Membrane/Distillation Hybrid Design for Propane/Propylene Separation," *AIChE Spring National Meeting*, Paper 63e, New Orleans, February 25-29, 1996.
25. Al-Rabiah A. A. and Soliman, M., "Heat Exchange Network Design for Ethylene Plants," *Proceedings of the third Engineering Conference*, College of Engineering, Vol. 1, 201-207, King Saud University, Riyadh, Saudi Arabia (1991).