

Rami Jumah, Ph.D.

Professor of Chemical Engineering

Department of Chemical Engineering
Jordan University of Science and Technology
Irbid 22110 Jordan

Tel.: +962 2 7201000 (x 22364) (O),
+962 2 7261680 (H), +962 776 500514 (C)

E-mail: ramij@just.edu.jo
Web: <http://www.just.edu.jo>

- PERSONAL:**
- Place and Date of Birth:** Irbid, Jordan, 10/23/1966
 - Citizenship:** Jordanian
 - Marital Status:** Married, three children
 - Languages:** Arabic, English
- EDUCATION:**
- Ph.D. in Chemical Engineering** **1995**
McGill University, Montreal, Quebec, Canada
Dissertation: "Flow and Drying Characteristics of a Rotating Jet Spouted Bed"
 - M.Sc. in Chemical Engineering** **1992**
Jordan University of Science and Technology, Irbid, Jordan
Thesis: "A new Method to Solve Boundary-Layer Problems of Heat and Mass Transfer in a Porous Medium."
 - B.Sc. in Chemical Engineering** **1989**
Jordan University of Science and Technology, Irbid, Jordan
Graduation Project: "Flow Characteristics in a Rectangular Spout-fluid Bed"
- EXPERIENCE:**
- June 2007 – present: Professor, Department of Chemical Engineering, Jordan University of Science and Technology, Irbid, Jordan
 - September 2011-August 2012: Professor, Department of Chemical Engineering, King Faisal University, Al-Hassa, Saudi Arabia
 - April 2001– June 2007: Associate professor, Department of Chemical Engineering, Jordan University of Science and Technology, Irbid, Jordan
 - 2005 – 2006: Chairman, Department of Chemical Engineering, Jordan University of Science and Technology, Irbid, Jordan
 - September 2002-August 2003 (Sabbatical leave), Associate professor, Department of Chemical Engineering, University of Qatar, Doha, Qatar
 - January 1996–April 2001: Assistant professor, Department of Chemical Engineering, Jordan University of Science and technology, Irbid, Jordan
 - Summer 2000: Visiting assistant professor, Department of Agricultural and Biosystems Engineering, McGill University, Montreal, Canada
 - Summer 1999: Visiting assistant professor, Department of Chemical Engineering, McGill University, Montreal, Canada
 - 1992-1995: Teaching assistant, Department of Chemical Engineering, McGill University, Montreal, Canada
 - 1989-1991: Research and teaching assistant, Department of Chemical Engineering, Jordan University of Science and technology, Irbid, Jordan

TEACHING:**UNDERGRADUATE COURSES:**

- Heat Transfer (JUST)
- Mass Transfer (JUST)
- Fluid Mechanics (JUST)
- Unit Operations (JUST, Qatar University)
- Chemical Engineering Principles (KFU)
- Reaction Engineering I (JUST, Qatar University)
- Reaction Engineering II (JUST)
- Pharmaceutical Process Engineering (JUST)
- Transport Phenomena (KFU)
- Petroleum Engineering (JUST)
- Gas Treatment (Qatar University)
- Industrial Corrosion (Qatar University)
- Heat and Mass Transfer Laboratory (JUST)
- Unit Operations Laboratory (JUST)
- Fluid Mechanics Laboratory (JUST)
- Chemical Processing Laboratory (JUST)

GRADUATE COURSES:

- Advanced Heat Transfer (JUST)
- Fluidization (JUST)

RESEARCH:**RESEARCH EMPHASIS AND INTERESTS:**

- Heat and Mass transfer
- Drying and Dewatering
- Fluid-solid Systems including Fluidization, Spouting and Related Subjects
- Neural Networks and Fuzzy Logic in Chemical Engineering
- Desalination
- Water Treatment

FUNDED RESEARCH:

- Electroosmotic Dewatering of Local Minerals and Biosolids
- Modeling and Control of Continuous Fluidized Bed Dryers
- Desalination by Solar-aided Membrane Distillation
- Manufacturing of Jameed Using the Spray Drying Process
- Production of Tomato Powder using the Spray Drying Technique
- Response surface methodology optimization of factors affecting the characteristics of polymeric films used in enteric coating in some pharmaceutical solid dosage form

**THESIS
SUPERVISION:**

1. A.F. Zraiy, M.Sc., 1999, Manufacturing of Jameed Using Spray Drying Process
2. M. Garaebeh, M.Sc., 1999, Desalination by Solar-aided Membrane Distillation
3. M. Al-Haj Ali, M.Sc., 2001, Modeling and Control of Continuous Fluidized Bed Dryers
4. S. Hammad, M.Sc., 2001, Production of Tomato Powder using the Spray Drying Technique
5. K. Al-Zou'bi, M.Sc., 2003, Electroosmosis Dewatering of Tomato Paste Suspension
6. Mahmoud Amr, M.Sc., 2015, Investigation of the Removal of Foam Causing

Contaminants and Degradation Products from Methyl-diethanolamine Using Foam Fractionation Technique`

7. Boshra Taher, M.Sc., 2015, Response surface methodology optimization of factors affecting the characteristics of polymeric films used in enteric coating in some pharmaceutical solid dosage form

AWARDS and SCHOLARSHIPS:

- The Contemporary Who's Who, American Biographical Institute, USA, 2003/2004
- The Hisham Hijjawi Award in the Field of Industry, Jordan, 2002
- The Hisham Hijjawi Award in the Field of Industry, Jordan, 1997
- McGill University Research Fellowships (FCAR, NSERC), 1992-1995
- McGill University Teaching Assistantship, 1992-1993
- Jordan University of Science and Technology Teaching Assistantship, 1989-1991

Training:

I delivered the following courses:

- Heat Exchangers Design, Operation, Maintenance & Troubleshooting [SABIC (Dammam and Khobar, Saudi Arabia)].
- Pumps Operation [SABIC (Riyadh, Saudi Arabia)].

Professional Activities:

- Member, International Advisory Panel, The 5th Asia-Pacific Drying Conference, ADC'07, August 13-15, 2007, Hong Kong, China.
- Member, The International Scientific Advisory Committee, International Workshop and Symposium on Industrial Drying (IWSID-2004), December 2004, Mumbai, India.
- Member, International Advisory Committee, 2nd Asian-Oceania Drying Conference, ADC'01, August 20-22, 2001, Pulau Pinang, Malaysia
- Member, International Advisory Committee, 1st Asian-Oceania Drying Conference, ADC'99, October 24-27, 1999, Bali, Indonesia.
- Referee: Drying Technology, Journal of Porous Media, Trans IChemE, Part C, Food and Bioproducts Processing, Int. J. Food Properties.
- Referee of several articles submitted to the Second & Third Jordanian Chemical Engineering Conferences (1996, 1999).
- Participation in scientific consultation committees in terms of measurements and standards for different industrial sectors held by The Institution For Standards and Metrology, Amman, Jordan.
- Coordinator and Chairman, Chemical Engineering Scientific Day, JUST, May 10, 2006.
- Administrator, Department of Chemical Engineering Website, 2003-present.
- Supervisor, Computer Facilities and Local Area Network, Dept. Chem. Eng., JUST, 1997-present.
- Coordinator, Scientific seminars held at the Dept. Chem. Eng., JUST, 1996-1997.
- Member, ABET Committee, Dept. Chem. Eng., JUST, September 2006-present
- Member, Laboratories Committee, Dept. Chem. Eng., JUST, 2006-present
- Member, Research Committee, Dept. Chem. Eng., JUST, 1998-2000.
- Member, Graduate Studies Committee, Dept. Chem. Eng., JUST, 2003-present
- Member, Curriculum Committee, Dept. Chem. Eng., JUST, 1996-present
- Coordinator, Senior Projects, Dept. Chem. Eng., JUST, 2003-2004
- Supervised several B. Sc. graduation projects, Chemical Engineering Department, JUST.
- Member of examining committees of several B. Sc. graduation projects and M.Sc. theses, Chemical and Mechanical Engineering Departments, JUST, the University of Jordan and Qatar University.

AFFILIATIONS:

- Jordan Engineers Association, Member

PUBLICATIONS:**a) Book Chapters**

04. **Rami Y. Jumah** and Arun S. Mujumdar (2015) "Dryer Feeding Systems". In *Handbook of Industrial Drying*, 4th ed., (A. S. Mujumdar, ed.), CRC Press, Taylor & Francis Group, Boca Raton, FL, USA , pp.1025-1044.
03. **Rami Y. Jumah** and Arun S. Mujumdar (2015) "Dryer Emission Control Systems", In *Handbook of Industrial Dryin*, 4th ed.,(A. S. Mujumdar, ed.), CRC Press, Taylor & Francis Group, Boca Raton, FL, USA, pp.1045-1076.
02. **Rami Y. Jumah**, Arun S. Mujumdar, and G.S.V. Raghavan (2015) "Control of Industrial Dryers". In *Handbook of Industrial Drying*, 4th ed., (A. S. Mujumdar, ed.), CRC Press, Taylor & Francis Group, Boca Raton, FL, USA, pp.1153-1170.
01. **Rami Y. Jumah**, Arun S. Mujumdar, and G.S.V. Raghavan (1997) "A Mathematical Model for Constant and Intermittent Drying of Grains in a Novel Rotating Jet Spouted Bed", In *Mathematical modeling and Numerical Techniques in Drying Technology*, (I. Turner and A.S. Mujumdar, eds.), Marcel Dekker, New York, pp. 339-380.

b) Journal Articles

40. Emad Alhseinat, Mahmoud Amr, Rami Jumah, and Fawzi Banat (2015) "Removal of MDEA foam creators using foam fractionation: Parametric study coupled with foam Characterization", *Journal of Natural Gas Science and Engineering* 26, 502-509.
39. Sameer Al-Asheh, **Rami Jumah**, Fawzi Banat, Amani Al-Zou'bi and Nesreen Al-Qutaish (2011) "Treatment of Olive-Mills effluent using Electro-osmosis Dewatering", *Hydrology : Current Research*, 2:2.
38. **R. Jumah**, E. Al-Kteimat, A. Al-Hamad and E. Telfah (2007) "Constant and Intermittent Drying Characteristics of Olive Cake", *Drying Technology*, 25: 1417–1422.
37. **Rami Jumah**, Sameer Al-Asheh, Fawzi Banat and Khalid Al-Zoubi (2007) "Influence of Salt, Starch, and pH on the Electroosmosis Dewatering of Tomato Paste Suspension", *J. Food, Agriculture & Environment*, 5(1), 34-38.
36. S. Al-Asheh, F. Mjalli, **R. Jumah**, F. Banat, W. Joudeh and F. Misleh (2006) "Electroosmosis Dewatering of Tomato Paste: Experimental Data and Neural Network Modeling", *J. Food, Agriculture & Environment*, 4(1), 80-85.
35. **Rami Jumah** (2005) "Modeling and Simulation of Continuous and Intermittent Radio Frequency-Assisted Fluidized Bed Drying of Grains", *Trans IChemE, Part C, Food and Bioproducts Processing*, 83(C3): 203-210.
34. **R. Jumah**, S. Al-Asheh, F. Banat, and K. Al-Zou'bi (2005) "Electroosmotic Dewatering of Tomato Paste Suspension Under AC Electric Field", *Drying Technology*, 23(7), 1465 -1475.
33. **Rami Jumah** and Arun S. Mujumdar (2005) "Modeling Intermittent Drying Using an Adaptive Neuro-fuzzy Inference System", *Drying Technology*, 23(5), 1075 -1092.
32. Nabil Abdel-Jabbar, **Rami Jumah** and M. Al-Haj Ali (2005) "State Estimation and State Feedback Control for Continuous Fluidized Bed Dryers", *Journal of Food*

Engineering, 70, 197-203.

31. Basim Abu-Jdayil, Fawzi Banat, **Rami Jumah**, Sameer Al-Asheh, and Sunya Hammad (2004) "A Comparative Study of Rheological Characteristics of Tomato Paste and Tomato Powder Solutions", *Int. J. Food Properties*, 7(3), 483-497.
30. S. Al-Asheh, **R. Jumah**, F. Banat, and K. Al-Zou'bi (2004) "Direct Current Electroosmosis Dewatering of Tomato Paste Suspension" *Trans IChemE, Part C, Food and Bioproducts Processing*, 82(C3), 193-200.
29. **R. Jumah**, F. Banat, S. Al-Asheh, and S. Hammad (2004) "Drying Kinetics of Tomato Paste", *Int. J. Food Properties*, 7(2), 253-259.
28. S. Al-Asheh, **R. Jumah**, F. Banat and S. Hammad (2003) "The Use of Experimental Factorial Design for Analysis the Effect of Spray Dryer Operating Variables on The Production of Tomato Powder", *Trans IChemE, Part C, Food and Bioproducts Processing*, 81, 81-88.
27. F. Banat, **R. Jumah**, S. Al-Asheh, and S. Hammad, (2002) "Effect of Operating Parameters on the Spray Drying of Tomato Paste", *Engineering in Life Sciences*, 2(12), 403-407.
26. Nabil Abdel-Jabbar, **Rami Jumah** and M. Al-Haj Ali (2002) "Multivariable Process Identification and Control of Continuous Fluidized Bed Dryers", *Drying Technology*, 20(7), 1347 -1377.
25. Nabil Abdel-Jabbar, **Rami Jumah** and M. Q. Al-Haj Ali (2002) "Dynamic Analysis of Continuous Well-Mixed Fluidized/Spouted Bed Dryers", *Drying Technology*, 20(1), 37-54.
24. Basim Abu-Jdayil, **Rami Jumah** and Reyad Shaker (2002) "Rheological Properties of a Concentrated Fermented Product, Labneh, Produced From Bovine Milk: Effect of Production Method", *International Journal of Food Properties*, 5(3), 667-679.
23. F. Banat, **R. Jumah** and M. Garaibeh (2002) "Exploitation of Solar Energy Collected by Solar Stills for Desalination by Membrane Distillation", *Renewable Energy*, 25(2), 293-305.
22. R. Shaker, B. Abu-Jdayil, **R. Jumah** and S. Ibrahim (2002) "Rheological Properties of Set Yogurt as Influenced by Incubation Temperature and Homogenization" *J. Food Quality*, 25, 409-418.
21. **Rami Jumah**, Fawzi Banat and Fahmi Abu Al-Rub (2001) "Darcy-Forchheimer mixed convection heat and mass transfer in fluid saturated porous media", *Int. J. of Numerical Methods for Heat & Fluid Flow*, 11(6), 600-618.
20. **R. Jumah**, B. Abu-Jdayil and R.R. Shaker (2001) "Effect of Type and Level of Starter Culture on the Rheological Properties of Set Yogurt During Gelation Process", *International Journal of Food Properties*, 4(3), 531-544.
19. **R. Jumah**, R. Shaker and B. Abu-Jdayil (2001) "Effect of Milk Source on the Rheological Properties of Yogurt During Gelation Process", *International Journal of Dairy Technology*, 54(3), 89-93.
18. **R. Jumah**, A. S. Mujumdar (2001) "Natural Convection Heat and Mass Transfer from a Vertical Flat Plate with Variable Wall Temperature and Concentration to Power Law Fluids with Yield Stress in a Porous Medium", *Chemical Engineering Communications*, 185, 165-182.

17. **R. Jumah** and G.S.V. Raghavan (2001) "Analysis of Heat and Mass Transfer During Combined Microwave-Convective Spouted Bed Drying" *Drying Technology*, 19(3&4), 485-506.
16. B. Abu-Jdayil, R. Shaker, and **R. Jumah** (2000) "Rheological Behavior of Concentrated Yogurt (Labneh)", *International Journal of Food Properties*, 3(2), 207-216.
15. **R. Jumah**, B. Tashtoush, R. Shaker and A. Zraiyy (2000) "Manufacturing Parameters and Quality Characteristics of Spray Dried Jameed", *Drying Technology* 18(4&5), 967-984.
14. **R. Jumah**, A. S. Mujumdar (2000) "Free Convection Heat and Mass Transfer of non-Newtonian Power Law Fluids with Yield Stress from a Vertical Flat Plate in Saturated Porous Media", *Int. Comm. in Heat and Mass Transfer*, 27 (4), 485-494.
13. R. Shaker, **R. Jumah** and B. Abu-Jdayil (2000) "Rheological Properties of Plain Yogurt During Coagulation Process: Impact of Fat Content and Preheat Treatment of Milk", *Journal of Food Engineering*, 44, 175-180.
12. R. Shaker, **R. Jumah**, B. Tashtoush, and A. Zraiyy (1999) "Manufacture of Jameed Using Spray Drying Process: A Preliminary Study", *International Journal of Dairy Technology*, 52, 77-80.
11. F. Banat, F. Abu Al-Rub, **R. Jumah** and M. Shanag (1999) "Theoretical Investigation of Membrane Distillation Role in Breaking the Formic-acid Water Azeotropic Point: Comparison Between Fickian and Stefan-Maxwell-Based Models", *Int. Comm. in Heat and Mass Transfer*, 26, 879-888.
10. F. Banat, F. Abu Al-Rub, **R. Jumah** and M. Shanag (1999) "Modeling of Desalination Using Tubular Direct Contact Membrane Distillation Modules", *Sep. Sci. Technol.*, 34, 2191-2206.
09. F. Abu Al-Rub, F. Banat, and **R. Jumah** (1999) "Vapor Liquid Equilibrium of Ethanol-water System in the Presence of Molecular Sieves", *Sep. Sci. Technol.*, 34, 2355-2368.
08. F. Banat, F. Abu Al-Rub, **R. Jumah** and M. Shanag (1999) "Application of Stefan-Maxwell Approach to Azeotropic Separation by Membrane Distillation", *The Chemical Engineering Journal*, 73, 71-75.
07. F. Banat, F. Abu Al-Rub, **R. Jumah** and M. Shanag (1999) "On the Effect of Inert Gases in Breaking the Formic-acid Water Azeotropic Point by Air Gap Membrane Distillation", *The Chemical Engineering Journal*, 73, 37-42.
06. **R. Jumah**, A. S. Mujumdar and G.S.V. Raghavan (1998) "Aerodynamics of a Novel Rotating Jet Spouted Bed", *The Chemical Engineering Journal*, 70, 209-219.
05. **R. Jumah**, A. S. Mujumdar and G.S.V. Raghavan, (1996) "Batch Drying Kinetics of Corn in a Novel Rotating Jet Spouted Bed", *Can. J. Chem. Eng.*, 74, 479-486.
04. **R. Jumah**, A. S. Mujumdar and G.S.V. Raghavan (1996) "A Mathematical Model for Constant and Intermittent Batch Drying of Grains in a Novel Rotating Spouted Bed", *Drying Technology*, 14(3&4), 765-802.
03. **R. Jumah** and A.S. Mujumdar (1993) "A PC Program for Preliminary Design of a

Continuous Well-mixed Fluid Bed Dryer”, *Drying Technology*, 11(4), 831-846.

02. M.Z. Anabtawi, B.Z. Uysal and **R.Y. Jumah**, (1992) “Flow Characteristics in a Rectangular Spout- fluid Bed”, *Powder Technology*, 69(3), 205-211.

01. M.Z. Anabtawi, B.Z. Uysal, **R.Y. Jumah** and N. K. Abdel-Jalil (1991)“Gas Hold-up in a Bidimensional Two-phase Spouted Bed”, *The Chemical Engineering Journal*, 47(3), 135-139.

c) Proceedings:

02. **R. Y. Jumah**, B. Tashtoush, R.R. Shaker and A.F. Zraiy (1999) “A Parametric Analysis of the Spray Drying of Jameed”, Proceedings of the First Asia-Australia Drying Conference, ADC’99 Bali, Indonesia, October 24-27, pp 563-570.

01. R.R. Shaker, B. Tashtoush, **R. Y. Jumah** and A.F. Zraiy (1999) “Functional Properties of Spray Dried Jameed: Effect of Milk Fat and Type of Starter” Proceedings of the First Asia-Australia Drying Conference, ADC’99, Bali, Indonesia, October 24-27, pp 571-578.

d) Presentations:

03. F. Banat, R. Jumah and M. Garaibeh (2000) “Desalination by Solar-Aided Membrane Distillation”, Mediterranean Conference on Desalination Systems Powered Renewable Energies, Santorini, Greece, June 21-23.

02. B. Abu-Jdayil, **R.Y. Jumah** and R. Shaker (2000) “Rheological Properties of Concentrated Yogurt (Labneh): Effect of Production Method”, 14th Conference of the European Colloid and Interface Society, Patras, Greece, September 17-22.

01. **R. Y. Jumah**, A. S. Mujumdar and G.S.V. Raghavan (1995) “Drying of Particulates in a Novel Rotating Jet Spouted Bed”, The 26th Annual Meeting of the Fine Particle Society, Chicago, Illinois, USA, August 22-25.

Last Revision on December 15, 2016