

CURRICULUM VITAE

MUHAMMAD SAHIMI

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EDUCATION

1977: B.S., Chemical Engineering, the University of Tehran (Summa Cum Laude)

1984: Ph.D., Chemical Engineering, the University of Minnesota, Minneapolis

POSITIONS HELD

- 1978 - 1984: Research Assistant, Department of Chemical Engineering, University of Minnesota, Minneapolis
- 1984 - 1989: Assistant Professor, Department of Chemical Engineering, University of Southern California
- 1989 - 1996: Associate Professor, Department of Chemical Engineering, University of Southern California
- 1996 - Professor, Department of Chemical Engineering, University of Southern California
- 1999 - 2005: Chairman, Department of Chemical Engineering, University of Southern California

AWARDS, HONORS, AND EXTERNAL APPOINTMENTS

- 2023: Fellow, American Physical Society
- 2022: Fellow, American Institute of Chemical Engineers
- 2021: Ranked among the top 2% of all scientists in the world in a study by Stanford University; <https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000384> and in another study at <https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/3>
- 2020: Kimberly-Clark Distinguished Lectureship Award, International Society for Porous Media

- 2017: Member Institution, National Academy of Inventors
- 2016: Northrup Grumman Excellence in Teaching Award
- 2015: Lifetime Achievement Award, International Society for Porous Media
- 2009: Senior Faculty Research Award, Viterbi School of Engineering, USC
- 2008: Outstanding reviewer of the papers published by the American Physical Society and American Institute of Physics journals (out of over 40,000 referees)
- 2008: Listed in Who's Who in America
- 2005: The NIOC Chair in Petroleum Engineering, USC
- 2003: Khwarizmi International Award (sponsored by the United Nations' UNESCO) for Distinguished Achievements in Science
- 2002 (Summer): NASA/JPL Faculty Fellow
- 1999: Kapitza Gold Medal, Russian Academy of Natural Sciences
- 1999: Foreign Member, Russian Academy of Natural Sciences
- 1997 (July-December): Visiting Scholar, Emory University, Atlanta, Georgia
- 1993 (August): Visiting Professor, HLRZ-KFA Supercomputer Center, Jülich, Germany
- 1993 (July): Visiting Professor, University of Porto, Portugal
- 1993: Member, Phi Kappa Phi Honors Society
- 1992: Humboldt Foundation Research Fellowship Award
- 1991 (September-December): Visiting Professor, Department of Mathematics, University of Melbourne, Australia
- 1990 (June-August): Visiting Scientist, HLRZ-KFA Supercomputer Center, Jülich, Germany
- 1990: Junior Faculty Research Award, USC School of Engineering
- 1989L Faculty Research and Innovation Award, USC
- 1986: Member, Sigma Xi Honors Society
- 1985: Faculty Research and Innovation Award, USC
- 1977 Highest Honors (Summa Cum Laude), the University of Tehran

RESEARCH INTERESTS (present and past)

- Acoustic and elastic wave propagation in heterogeneous media
- Multiphase flow, transport, and reaction in porous media
- Elastic properties and fracture of composite materials
- Reconstruction of heterogeneous porous media and materials
- Atomistic modeling of nanoporous materials and nanotubes
- Fabrication of nanoporous membranes (carbon molecular-sieves, silicon carbide, layered double hydroxides, mixed-matrix)
- Separation of fluid mixtures by nanoporous membranes
- Protein folding and aggregation in confined environments
- Percolation theory
- Development of efficient methods for large-scale scientific computations
- Markov analysis and reconstruction of nonstationary stochastic processes

NOTEWORTHY RESEARCH CONTRIBUTIONS

- Pore network model of dispersion in flow through porous media (with H. T. Davis, L. E. Scriven).
- Percolation models of two-phase flow in porous media (with A. A. Heiba, H. T. Davis, L. E. Scriven, M. Hashemi).
- Theory of stochastic transport in heterogeneous media (with H. T. Davis, B. D. Hughes, L. E. Scriven).
- Renormalized effective-medium approximation for transport in heterogeneous media.
- Percolation models of catalyst deactivation (with T. T. Tsotsis, S. Arbabi).
- Scaling properties of elastic percolation networks and their application to polymers and gels (with S. Arbabi).
- Discrete models of quasi-static fracture of disordered solids (with S. Arbabi).
- Hydrodynamics of particulate motion in porous membranes (with A. O. Imdakm).
media.
- Molecular structure, precipitation, and scaling equation of state for asphalt aggregates.

- Synthesis and characterization of nanoporous membranes (carbon molecular-sieves, silicon carbide, layered double hydroxides, and mixed-matrix) for gas separation (with T. T. Tsotsis, M. G. Sedigh, B. Elyassi).
- Molecular modeling of adsorption and transport in nanoporous membranes (with X. Yi, J. Ghassemzadeh, L. Xu, M. Firouzi, N. Kim, N. Rajabbeigi, S. Naserifar).
- Application of wavelet transforms for modeling of fluid flow and transport in heterogeneous media (with A. R. Mehrabi, F. Ebrahimi, M. Hashemi, M. R. Rasaei, H. Dashtian).
- Markov analysis and reconstruction of nanostationary stochastic processes (with M. R. Rahimi Tabar).
- Wave propagation in disordered media (with S. M. Vaez Allaei, R. Sepehrinia, M. R. Rahimi Tabar).
- Reconstruction, multiple-point geostatistical simulation, and the development of the cross correlation-based simulation algorithm (CCSIM) (with P. Tahmasebi).
- Liquid and gas sorption and flow in nanotubes (with H. Barghi, M. Khademi, and J. Cobeña-Reyes).

PATENTS

- M. Sahimi, S. S. Mohajerzadeh, N. Rajabbeigi, B. Elyassi, and A. Khodadadi, “Oxygen Sensor with a Solid State Reference and Manufacturing Thereof,” Publication Number WO/2004/109252, International Application Number PCT/US2004/016925 (May 2005).
- T. T. Tsotsis, M. Sahimi, B. Fayyaz-Najafi, A. Harale, B.-g. Park, and P.K.T. Liu, “Hybrid Adsorptive Membrane Reactor,” U.S. Patent No. 7,897,122, (March 2011).

RESEARCH WORK FEATURED AND EXPERTISE NOTED

- *Chemical & Engineering News* **69** (No. 16), 28 (April 1991) (for work on fractals in porous media).
- *Chemical Engineering Magazine* **98** (No. 7), 30 (July 1991) (for work on fractals in porous media).
- *MOSAIC* (National Science Foundation Quarterly Journal) **23** (No. 2), 12 (Summer 1992; for work on fractals in porous media).
- *CHEMTECH* **22**, 687 (November 1992) (for the work on fractals in porous media).

- *Chemical Engineering Progress* **89** (No. 3), 26 (March 1993) (for the paper on nonlinear transport processes in heterogeneous media, indicated by ¶ in the list of publications).
- *Frankfurter Allgemeine Zeitung* (German Newspaper) (26 April 1994) (for work on fracture of materials).
- *High-Tech Materials Alert* **12** (No. 8), 11 (August 1995) (for work on fracture of solids).
- *Human Pathology* (cover) (November 1998; indicated by § in the list of publications) (for work for fractal structures in cellular systems).
- *Harvard International Review* (Winter 2005) (article on nuclear versus fossil energy).
- *The New York Times* (March 5, 2006).
- *The New Scientist* (March 11, 2006).
- *The Los Angeles Times* (November 28, 2007).
- *The EETimes*, <https://www.edn.com/engineering-mindset-doesnt-include-politics/> (April 2, 2008) (on the relation between engineering science and politics).
- *Membrane Technology* (September 2008), page 11 (for work on fabrication of nanoporous membranes).
- *Berliner Zeitung* (February 5, 2009; for the paper on possible prediction of earthquakes, indicated by • in the list of publications)
- The paper **A Percolation Model of Mobile ad-hoc Networks** was selected by the Wolfram Demonstrations Project (<http://demonstrations.wolfram.com>) (indicated by †† in the list of publication).
- *JCP: Biochemical Physics*: <http://jcp-bcp.aip.org> (September 2011 issue)
- *Physical Review E, Kaleidoscope Images*; <http://pre.aps.org/kaleidoscope/pre/85/6/066312> (June 2012 issue; for the paper on drying of porous media, indicated by ‡ in the list of the publications).
- *Interpore Newsletter* featuring *Modeling of Porous Media, Small and Large: Reconstruction and High-Order Geostatistical Simulation by a Cross-Correlation Function*, issue 9 (May 30, 2015); https://www.interpore.org/index.php?option=com_acymailing&ctrl=archive&task=view&mailid=179&600ba2f8470f873bad2ed09c862a2675&tmpl=component
- *Physical Review E, Kaleidoscope Images*; <http://journals.aps.org/pre/kaleidoscope/pre/92/3/030301> (September 2015 issue; for the paper, “Dynamics of supercooled water in nanotubes: Cage correlation function and diffusion coefficient,” indicated by ¶ in the list of the publications).

- *The Spaces in Between*, Editor's Vox, *Earth and Space Science News*, American Geophysical Union (December 5, 2017) (for work on percolation models of porous media); <https://eos.org/editors-vox/the-spaces-in-between>
- *Physical Review E twitter account*: <https://twitter.com/PhysRevE> (April 6, 2020; highlighting the paper indicated by ¶¶ in the list of publications, which is on the use of deep learning networks for evaluating reconstruction methods of heterogeneous materials)
- *EOS, Transactions, American Geophysical Union*; <https://eos.org/editor-highlights/how-much-terrestrial-precipitation-is-used-by-vegetation>, featured paper *Predicting streamflow elasticity based on percolation theory and ecological optimality*, paper No. 435 in the list of peer-reviewed papers, and noted by §§

TEACHING

- **Undergraduate:** Transport phenomena; Chemical reaction engineering
- **Graduate:** Viscous flow, Heat transmission; Mass transfer; Numerical methods; Mathematical methods; Porous media and remediation; Reservoir simulation; Advanced separation and bioseparation processes

JOURNALS EDITORSHIP AND EDITORIAL BOARDS

- Technical Editor, *Society of Petroleum Engineers Journals*, 1998 - Present
- Editor, Computer Simulation Department, *Computing in Science & Engineering*, 2005 - 2013
- Member of Editorial Board, *Fractals*, 1997 - present
- Member of Editorial Board, *Journal of Porous Media*, 2000 - 2013
- Member of Editorial Board, *Special Topics & Reviews in Porous Media*, 2010 - 2013
- Section Editor, *Springer Encyclopedia of Complexity & System Science*, 2008 - present
- Associate Editor, *Journal of Porous Media*, 2013 - present
- Associate Editor, *Special Topics & Reviews in Porous Media*, 2013 - present
- Member of Editorial Board, *Annals of Materials Science & Engineering*, 2014 - present
- Member of Editorial Board, *Journal of Materials Science and its Applications*, 2015 - present
- Associate Editor, *Advances in Geo-Energy Research*, 2018 - present
- Guest Editor, Special Issue on "Reconstruction of Porous Media and Materials and its Applications," *Transport in Porous Media* **125** (No. 1) (October 2018).

MEMBERSHIP

- American Geophysical Union
- American Institute of Chemical Engineers
- American Physical Society
- Society of Petroleum Engineers
- International Society for Porous Media
- Union of Concerned Scientists

CONSULTING AND SERVICE

- Chevron Oil Company, La Habra, California: 1986
- National Iranian Oil Company: 1989 - 2005
- Shell Oil Company (the Netherlands): 1990 - 1992
- Mobil Oil Company, New Jersey: 1991
- The United Nations (Expatriate Program): 1991 - 1995
- Japan National Oil Corporation: 1999 - 2000
- Millipore Corporation, Bedford, Massachusetts: 1993 - 2003
- Procter & Gamble, Germany: 2009 - 2011
- Avery Dennison Research Center, Pasadena, California: 1997 - present
- Member of numerous NSF and DOE panels: 1987 -
- Organizer and chairman of numerous sessions at the annual meetings of the AIChE annual meetings:
1987 -

PUBLICATIONS

BOOKS

1. M. Sahimi and H. Rassamdana, *Teaching Chemistry* (in Persian), 270 pages, Form Publishing Company, Teheran, Iran (1975; 4th Edition, 1984).
2. M. Sahimi, *Applications of Percolation Theory*, 258 pages, Taylor and Francis, London (1994); second revised and enlarged edition, 676 pages, Springer, New York, (2023).
3. M. Sahimi, *Flow and Transport in Porous Media and Fractured Rock*, 485 pages, Wiley-VCH, Weinheim (1995); second edition, 709 pages, Wiley-VCH, Weinheim (2011).
4. M. Sahimi, *Heterogeneous Materials I: Linear Transport and Optical Properties*, 691 pages, Springer-Verlag, New York (2003).
5. M. Sahimi, *Heterogeneous Materials II: Nonlinear and Breakdown Properties, and Atomistic Modelling*, 636 pages, Springer-Verlag, New York (2003).
6. M. Sahimi and A.G. Hunt (editors), *Complex Media and Percolation Theory*, 440 pages (Springer, New York, 2021).

PEER-REVIEWED PAPERS

1. B.D. Hughes and M. Sahimi, "Random Walks on the Bethe Lattices," *Journal of Statistical Physics* **29**, 781-794 (1982).
2. M. Sahimi, A.A. Heiba, B.D. Hughes, L.E. Scriven, and H.T. Davis, "Dispersion in Flow Through Porous Media," *Society of Petroleum Engineers Paper 10969*, 1-72 (1982).
3. A. A. Heiba, M. Sahimi, L. E. Scriven, and H. T. Davis, "Percolation Theory of Two-Phase Relative Permeability," *Society of Petroleum Engineers Paper 11015*, 1-17 (1982).
4. M. Sahimi, B. D. Hughes, L. E. Scriven, and H. T. Davis, "On Pólya Random Walks, Lattice Green Functions and the Bond Percolation Thresholds," *Journal of Physics A* **16**, L67-L71 (1983).
5. M. Sahimi and G. R. Jerauld, "On the Position-Space Renormalisation Group Approach to Diffusion-Limited Cluster Growth Problems," *Journal of Physics A* **16**, L419-L425 (1983).
6. M. Sahimi, B. D. Hughes, L. E. Scriven, and H. T. Davis, "Critical Exponents of Percolation Conductivity by Finite-Size Scaling," *Journal of Physics C* **16**, L521-L527 (1983).

7. M. Sahimi and G. R. Jerauld, "Random Walks on Percolation Clusters at the Percolation Threshold," *Journal of Physics C* **16**, L1043-L1050 (1983).
8. M. Sahimi, B. D. Hughes, L. E. Scriven, and H. T. Davis, "Stochastic Transport in Disordered Systems," *Journal of Chemical Physics* **78**, 6849-6864 (1983).
9. B. D. Hughes, M. Sahimi, and H. T. Davis, "Random Walks on Pseudo-Lattices," *Physica A* **120**, 515-536 (1983).
10. M. Sahimi, H. T. Davis, and L. E. Scriven, "Dispersion in Disordered Porous Media," *Chemical Engineering Communications* **23**, 329-341 (1983).
11. M. Sahimi, B. D. Hughes, L. E. Scriven, and H. T. Davis, "Real-Space Renormalization and Effective-Medium Approximation to the Percolation Conduction Problem," *Physical Review B* **28**, 307-311 (1983).
12. M. Sahimi and G. R. Jerauld, "Superuniversal Spectral Dimension for Dilute Branched Polymers?" *Journal of Physics A* **17**, L165-L171 (1984).
13. M. Sahimi, "Self-Avoiding Walks on Percolation Clusters," *Journal of Physics A* **17**, L379-L384 (1984).
14. M. Sahimi, "Diffusion and Trapping of Excitations in Disordered Systems," *Journal of Physics A* **17**, 2567-2572 (1984).
15. M. Sahimi, "On the Relationship Between the Critical Exponents of Percolation Conductivity and the Static Exponents of Percolation," *Journal of Physics A* **17**, L601-L607 (1984).
16. M. Sahimi, "Scaling Relation for the Critical Exponents of Backbone of Percolation Clusters," *Journal of Physics A* **17**, 3073-3076 (1984).
17. M. Sahimi, "Finite-Size Scaling Calculation of Conductivity of Three-Dimensional Conductor-Superconductor Percolation Networks at Percolation Threshold," *Journal of Physics C* **17**, L355-L358 (1984).
18. M. Sahimi, L. E. Scriven, and H. T. Davis, "On the Improvement of the Effective-Medium Approximation to the Percolation Conductivity Problem," *Journal of Physics C* **17**, 1941-1948 (1984).
19. M. Sahimi, "Effective-Medium Approximation for Density of States and the Spectral Dimension of Percolation Networks," *Journal of Physics C* **17**, 3957-3966 (1984).
20. B. D. Hughes, M. Sahimi, L. E. Scriven, and H. T. Davis, "Transport and Conduction in Random Systems," *International Journal of Engineering Science* **22**, 1083-1092 (1984).

21. M. Sahimi, G. R. Jerauld, L. E. Scriven, and H. T. Davis, "Position-Space Renormalization Group Approach to the Resistance of Random Walks," *Physical Review A* **29**, 3397-3401 (1984).
22. M. Sahimi, H. T. Davis, and L. E. Scriven, "Thermodynamic Modeling of Phase and Tension Behavior of CO₂-Hydrocarbon Systems," *Society of Petroleum Engineers Paper 10268*, 1-33 (1981); *Transactions AIME* 279 (1985).
23. M. Sahimi and Y. C. Yortsos, "Pattern Formation in Viscous Fingering: a Diffusion Limited Aggregation Approach," *Physical Review A* **32**, 3762-3764 (1985).
24. M. Sahimi, M. McKarnin, T. Nordahl, and M. V. Tirrell, "Transport and Reaction on Diffusion-Limited Aggregates," *Physical Review A* **32**, 590-595 (1985).
25. M. Sahimi, "Fractal Dimension in a Percolation Model of Fluid Displacement," *Physical Review Letters* **54**, 1698 (1985).
26. S. Feng and M. Sahimi, "Position-Space Renormalization for Elastic Percolation Networks with Bond-Bending Forces," *Physical Review B (Rapid Communications)* **31**, 1671-1673 (1985).
27. M. Sahimi and J. D. Goddard, "Superelastic Percolation Networks and the Viscosity of Gels," *Physical Review B (Rapid Communications)* **32**, 1869-1871 (1985).
28. M. Sahimi, "Some Remarks on the Critical Behavior of Superconducting Percolation Networks," *Journal of Physics A* **18**, 1543-1550 (1985).
29. M. Sahimi, "The Backbone and Conductivity of Random Clusters," *Journal of Physics A* **18**, 83-92 (1985).
30. M. Sahimi and H. Siddiqui, "Diffusion in Superconducting Percolation Networks: Number of Sites Visited," *Journal of Physics A* **18**, L727-L733 (1985).
31. M. Sahimi, "Possible Relations for Topological and Transport Properties of Lattice Animal Model of Branched Polymers," *Journal of Physics A* **18**, 3251-3258 (1985).
32. M. Sahimi, "Phenomenological Renormalisation of Monte Carlo Data for Percolation," *Journal of Physics A* **18**, 3597-3603 (1985).
33. M. Sahimi and T. T. Tsotsis, "A Percolation Model of Catalyst Deactivation by Site Coverage and Pore Blockage," *Journal of Catalysis* **96**, 552-562 (1985).
34. M. Sahimi, H. T. Davis, and L. E. Scriven, "Thermodynamic Modeling of Phase and Tension Behavior of Carbon Dioxide-Hydrocarbon Systems," *Society of Petroleum Engineers Journal* **25**, 235-254 (1985).

35. D.-Y. Kuan, P. K. Kilpatrick, M. Sahimi, L. E. Scriven, and H. T. Davis, "Multicomponent Carbon Dioxide-Water-Hydrocarbon Phase Behavior Modelling: A Comparative Study," *SPE Reservoir Engineering* **1**, 61-72 (1986).
36. M. Sahimi, B. D. Hughes, L. E. Scriven, and H. T. Davis, "Dispersion in Flow through Porous Media: I. One-Phase Flow," *Chemical Engineering Science* **41**, 2103-2122 (1986).
37. M. Sahimi, A. A. Heiba, H. T. Davis, and L. E. Scriven, "Dispersion in Flow through Porous Media: II. Two-Phase Flow," *Chemical Engineering Science* **41**, 2123-2136 (1986).
38. M. Sahimi, "Dynamic Percolation and Diffusion in Disordered Systems," *Journal of Physics C* **19**, 1311-1316 (1986).
39. M. Sahimi, "Relation Between the Critical Exponent of Elastic Percolation Networks and the Dynamical and Geometrical Exponents," *Journal of Physics C* **19**, L79-L83 (1986).
40. M. Sahimi, "Model for the Formation of Nonequilibrium Clusters," *Physical Review A (Rapid Communications)* **33**, 3618-3621 (1986).
41. M. Sahimi and J. D. Goddard, "Elastic Percolation Models for Cohesive Mechanical Failure in Heterogeneous Systems," *Physical Review B (Rapid Communications)* **33**, 7848-7851 (1986).
42. A. O. Imdakm and M. Sahimi, "Transport of Large Particles in Flow Through Porous Media," *Physical Review A* **36**, 5304-5309 (1987).
43. M. D. Stephens and M. Sahimi, "Distribution of Fracture Strength in Disordered Continua," *Physical Review B* **36**, 8656-8659 (1987).
44. M. Sahimi and T. T. Tsotsis, "Dynamic Scaling for the Fragmentation of Reactive Porous Media," *Physical Review Letters* **59**, 888-891 (1987).
45. M. Sahimi and H. Siddiqui, "The Effect of Morphological Disorder on Viscous Fingers and Diffusion-Limited Aggregates in a Porous Medium," *Journal of Physics A* **20**, L89-L96 (1987).
46. M. Sahimi, "Hydrodynamic Dispersion Near the Percolation Threshold: Scaling and Probability Densities," *Journal of Physics A* **20**, L1293-L1298 (1987).
47. M. Sahimi and T. T. Tsotsis, "Statistical Modeling of Gas-Solid Reactions with Pore Volume Growth: Kinetic Regime," *Chemical Engineering Science* **43**, 113-121 (1988).
48. M. Sahimi, "Diffusion-Controlled Reactions in Porous Media. I: Uniform Distribution of Reactants," *Chemical Engineering Science* **43**, 2981-2993 (1988).
49. R. Mojaradi and M. Sahimi, "Diffusion-Controlled Reactions in Porous Media. II: Non-uniform Distribution of Reactants," *Chemical Engineering Science* **43**, 2995-3004 (1988).

50. M. Sahimi, "On the Determination of Transport Properties of Disordered Systems," *Chemical Engineering Communications* **64**, 179-195 (1988).
51. M. Sahimi, T. T. Tsotsis, and M. L. Occelli, "Computer Simulations of Diffusion, Adsorption and Reaction of Organic Molecules in Pillared Clays," *Microstructure and Properties of Catalysts* **111**, 271-276 (1988).
52. M. Sahimi, T. T. Tsotsis, and G. R. Gavalas, "Statistical Modeling of Fluid-Solid Reactions in Porous Media," *Mathematical & Computer Modeling* **11**, 19-21 (1988).
53. M. Sahimi and A. O. Imdakm, "The Effect of Morphological Disorder on Hydrodynamic Dispersion in Flow Through Porous Media," *Journal of Physics A* **21**, 3833-3870 (1988).
54. S. Arbabi and M. Sahimi, "Absence of Universality in Percolation Models of Disordered Elastic Media with Central Forces," *Journal of Physics A* **21**, L863-L868 (1988).
55. S. Arbabi and M. Sahimi, "Elastic Properties of Three-Dimensional Percolation Networks with Stretching and Bond-Bending Forces," *Physical Review B (Rapid Communications)* **38**, 7173-7176 (1988).
56. M. Sahimi and V. L. Jue, "Hindered Transport in Disordered Porous Media with Connected Pores," *AIChE Symposium Series* **84** (No. 266), 40-49 (1988).
57. M. Sahimi, "Statistical Physics of Linear and Nonlinear, Scalar and Vector Transport Processes in Disordered Media," *Nuclear Physics A* **5**, 200-208 (1988).
58. M. Sahimi and V. L. Jue, "Diffusion of Large Molecules in Porous Media," *Physical Review Letters* **62**, 629-632 (1989).
59. M. Sahimi and S. Arbabi, "Force Distribution, Multiscaling and Fluctuations in Disordered Elastic Media," *Physical Review B* **40**, 4975-4980 (1989).
60. M. Sahimi and T. T. Tsotsis, "Statistical Models of Transport and Reactions in Porous Media and Their Applications in Catalysis," *Characterization and Catalyst Development* **411**, 158-178 (1989).
61. H. Siddiqui and M. Sahimi, "Computer Simulations of Miscible Displacement Processes in Disordered Porous Media," *Chemical Engineering Science* **45**, 163-182 (1990).
62. S. Arbabi and M. Sahimi, "Test of Universality for Three-Dimensional Models of Mechanical Breakdown in Disordered Solids," *Physical Review B* **41**, 772-775 (1990).
63. M. Sahimi, "Diffusion, Adsorption and Reaction in Pillared Clays. I: Rod-like Molecules in a Regular Pore Space," *Journal of Chemical Physics* **92**, 5107-5118 (1990).

64. S. Arbabi and M. Sahimi, "Critical Properties of Viscoelasticity of Gels and Elastic Percolation Networks," *Physical Review Letters* **65**, 725-728 (1990).
65. S. Arbabi and M. Sahimi, "On Three-Dimensional Elastic Percolation Networks with Bond-Bending Forces," *Journal of Physics A* **23**, 2211-2216 (1990).
66. H. Siddiqui and M. Sahimi, "A Statistical Model for Simulating Miscible Viscous Fingers in Porous Media and other Growth Phenomena," *Journal of Physics A* **23**, L497-L503 (1990).
67. M. Sahimi and Y. C. Yortsos, "Applications of Fractal Geometry to Porous Media: A Review," *Society of Petroleum Engineers paper 20476*, pp. 1-25 (1990).
68. D. Stauffer, J. S. Ho, and M. Sahimi, "Monte Carlo Simulation of Three-Dimensional Dilute Widom Model of Microemulsions," *Journal of Chemical Physics* **94**, 1385-1387 (1991).
69. S. Arbabi and M. Sahimi, "Computer Simulations of Catalyst Deactivation - I. Model Formulation and Validation," *Chemical Engineering Science* **46**, 1739-1747 (1991).
70. S. Arbabi and M. Sahimi, "Computer Simulations of Catalyst Deactivation - II. The Effect of Morphological, Transport and Kinetic Parameters on the Performance of the Catalyst," *Chemical Engineering Science* **46**, 1749-1755 (1991).
71. A. O. Imdakm and M. Sahimi, "Computer Simulation of Particle Transport Processes in Flow Through Porous Media," *Chemical Engineering Science* **46**, 1977-1993 (1991).
72. M. Sahimi and S. Arbabi, "On Correction to Scaling for Two- and Three-Dimensional Scalar and Vector Percolation," *Journal of Statistical Physics* **62**, 453-461 (1991).
73. M. Sahimi, "Transport, Reaction and Fragmentation in Evolving Porous Media," *Physical Review A* **43**, 5367-5376 (1991).
74. M. Sahimi and D. Stauffer, "Efficient Simulation of Flow and Transport in Porous Media," *Chemical Engineering Science* **46**, 2225-2233 (1991).
75. M. Sahimi and T. S. Ray, "Transport Through Bootstrap Percolation Clusters," *Journal de Physique I* **1**, 685-692 (1991).
76. M. Sahimi and A. O. Imdakm, "Hydrodynamics of Particulate Motion in Porous Media," *Physical Review Letters* **66**, 1169-1172 (1991).
77. D. Chowdhury, M. Sahimi, and D. Stauffer, "A Discrete Model for Immune Surveillance, Tumor Immunity and Cancer," *Journal of Theoretical Biology* **152**, 263-270 (1991).
78. S. Arbabi and M. Sahimi, "Large Scale Computer Simulations of Static and Dynamic Properties of Disordered Materials," *Molecular Simulation* **8**, 1-22 (1991).

79. M. Sahimi and S. Arbabi, "Scaling Laws for Transport, Mechanical and Fracture Properties of Disordered Materials," *Proceedings of the Materials Research Society* **207**, 201-228 (1991).
80. M. Sahimi and B. N. Taylor, "Surface Tension of Binary Liquid-Vapor Mixtures: A Comparison of Mean-Field and Scaling Theories," *Journal of Chemical Physics* **95**, 6749-6761 (1991).
81. S. Mukhopadhyay and M. Sahimi, "Heat Transfer and Two-Phase Flow in Fractured Reservoirs," *Society of Petroleum Engineers Paper 24043*, 207-219 (1992).
82. A. A. Heiba, M. Sahimi, L. E. Scriven, and H. T. Davis, "Percolation Theory of Two-Phase Relative Permeability," *SPE Reservoir Engineering* **7**, 123-132 (1992).
83. M. Sahimi and S. Arbabi, "Percolation and Fracture in Disordered Solids and Granular Media: Approach to a Fixed Point," *Physical Review Letters* **68**, 608-611 (1992).
84. J. A. M. S. Duarte, M. Sahimi, and J. M. de Carvalho, "Dynamic Permeability of a Porous Medium by Cellular Automata," *Journal de Physique II* **2**, 1-5 (1992).
85. M. Sahimi, "Transport of Macromolecules in Porous Media," *Journal of Chemical Physics* **96**, 4718-4728 (1992).
86. M. A. Knackstedt and M. Sahimi, "On the Universality of Geometrical and Transport Exponents of Rigidity Percolation," *Journal of Statistical Physics* **69**, 887-895 (1992).
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449. M. Sahimi, "Non-linear and Non-local Transport in Heterogeneous Media: From Long-Range Correlated Percolation to Fracture and Materials Breakdown," *Physics Reports* **306**, 213-395 (1998).

450. M. Sahimi, "Percolation Processes," in *Encyclopedia of Applied Physics*, Update 1, edited by G. L. Trigg (Wiley-VCH, Berlin, 1999), pp. 81-144.
451. M. Sahimi, "Characterization of Geology of, and Flow and Transport in, Field-Scale Porous Media: Application of Fractal and Percolation Concepts," in *Handbook of Porous Media*, edited by K. Vafai (Marcel Dekker, New York, 2000), pp. 113-170.
452. M. Sahimi, "Wavelet Transformations and Data Processing: Application to Characterization and Simulation of Large-Scale Porous Media," *Annual Reviews of Computational Physics VIII*, 83-112 (2000).
453. A. Schroth, C. Kirkconnell, and M. Sahimi, "Numerical Model for Pulse Tubes Using Method of Lines," in *Cryocoolers 12*, edited by R. G. Ross, Jr. (Kluwer, New York, 2003), pp. 379-387.
454. M. Sahimi and T. T. Tsotsis, "Computational Methods for Atomistic Modelling of Nanoporous Materials and Their Properties," in *Handbook of Theoretical and Computational Nanotechnology*, edited by M. Rieth and W. Schommers (American Scientific, New York, 2006), pp. 604-689.
455. M. R. Rahimi Tabar, F. Ghasemi, J. Peinke, R. Friedrich, K. Kaviani, F. Taghavi, S. Sadeghi, G. Bijani, and M. Sahimi, "New Computational Approaches to Analysis of Interbeat Intervals in Human Subjects," *Computing in Science & Engineering* **8** (No. 2), 86-97 (2006).
456. M. Sahimi, M. R. Rasaei, and M. Haghighi, "Gas Injection and Fingering in Porous Media," in *Gas Transport in Porous Media*, edited by C. K. Ho and S. W. Webb (Kluwer, Amsterdam, 2006), pp. 133-167.
457. M. R. Rahimi Tabar, M. Sahimi, F. Ghasemi, K. Kaviani, M. Allamehzadeh, J. Peinke, M. Mokhtari, M. Vesaghi, M. D. Niry, A. Bahraminasab, S. Tabatabai, S. Fayazbakhsh, and M. Akbari, "Short-Term Prediction of Medium- and Large-Size Earthquakes Based on Markov and Extended Self-Similarity Analysis of Seismic Data," in *Modelling Critical and Catastrophic Phenomena in Geoscience*, edited by P. Bhattacharyya and B. K. Chakrabarti (Springer, Berlin, 2006), pp. 281-301.
458. M. Sahimi, "Introduction to Percolation," in *Encyclopedia of Complexity and Systems Science*, Volume 7, edited by R. A. Meyers (Springer, Heidelberg, 2009), pp. 6518-6521.
459. M. Sahimi, "Percolation Phase Transition," in *Encyclopedia of Complexity and Systems Science*, Volume 7, edited by R. A. Meyers (Springer, Heidelberg, 2009), pp. 6538-6545.
460. M. Sahimi, "Percolation and Polymer Morphology and Rheology," in *Encyclopedia of Complexity and Systems Science*, Volume 7, edited by R. A. Meyers (Springer, Heidelberg, 2009), pp. 6545-6565.

461. B. Elyassi, M. Sahimi, and T. T. Tsotsis, "Inorganic Membranes," in *Encyclopedia of Chemical Processing*, edited by S. K. B. Lee (Taylor & Francis, London, 2009).
462. R. Friedlich, J. Peinke, M. Sahimi, and M. R. Rahimi Tabar, "Approaching Complexity by Stochastic Methods: From Biological Systems to Turbulence" *Physics Reports* **506**, 87-162 (2011).
463. P. K. T. Liu, M. Sahimi, and T. T. Tsotsis, "Process Intensification in Hydrogen Production from Coal Biomass via the Use of Membrane-Based Reactive Separations," *Current Opinion in Chemical Engineering* **1**, 342-351 (2012).
464. B. Ghanbarian-Alavijeh, A. G. Hunt, R. E. Ewing, and M. Sahimi, "Tortuosity in Porous Media: a Critical Review," *Soil Science Society of America Journal* **77**, 1461 - 1477 (2013).
465. S. Soltani, M. Sahimi, and T. T. Tsotsis, "Catalytic Membrane Reactors," in *Encyclopedia of Membrane Science and Technology*, edited by E.M.V. Hoek Volodymyr and V. Tarabara (Wiley, New York, 2013), pp. 1-39.
466. M. Sahimi, "Characterization of Fractures and Fracture Network of Porous Media," in *Handbook of Porous Media*, 3rd edition, edited by K. Vafai (CRC Press, Baton Rouge, 2015), pp. 63-88.
467. P. Tahmasebi and M. Sahimi, "Geostatistical Simulation and Reconstruction of Porous Media," in *Handbook of Porous Media*, 3rd edition, edited by K. Vafai (CRC Press, Baton Rouge, 2015), pp. 869-890.
468. A.G. Hunt and M. Sahimi, "Flow, Transport, and Reaction in Porous Media: Percolation Scaling, Critical-Path Analysis, and Effective-Medium Approximation," *Reviews of Geophysics* **55**, 993-1087 (2017).
469. H. Dashtian, N. Shokri, and M. Sahimi, "Pore-Network Simulation of Drying of Heterogeneous and Stratified Porous Media," in *Convective Heat Transfer in Porous Media*, edited by Y. Mahmoudi, K. Hooman, and K. Vafai (Taylor & Francis, London, 2019).
470. M. Sahimi and P. Tahmasebi, "Reconstruction, Optimization, and Design of Heterogeneous Materials and Media: Basic Principles, Computational Algorithms, and Applications," *Physics Reports* **939**, 1-82 (2021).
471. M. Sahimi and P. Tahmasebi, "The Potential of Quantum Computing for Geoscience," *Transport in Porous Media* **145**, 367-387 (2022).

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472. H. Dashtian and M. Sahimi, “Efficient Simulation of Fluid Flow and Transport in Heterogeneous Media Using Graphics Processing Units (GPUs) and a Mixed-Precision Algorithm,” arXiv:1908.03301v1 [physics.comp-ph] (archived 9 August 2019).
473. S. Kamrava, A. Sahimi, J. Ichida, and M. Sahimi, Machine learning algorithm for identifying and predicting amyotrophic lateral sclerosis causal mutations, *bioRxiv* <https://doi.org/10.1101/2022.03.27.4859> (archived 28 March 2022);
474. M. Sahimi, “AC Hopping Conduction at Extreme Disorder Takes Place on the Bond Invasion Percolation Cluster,” arXiv:2208.00770v1 [cond-mat.dis-nn] (archived 8 July 2022).

BOOK REVIEWS

1. J. H. Cushman (ed.), *Dynamics of Fluids in Hierarchical Porous Media*, *Chemical Engineering Science* **47**, 512 (1992).
2. N. R. Morrow (ed.), *Interfacial Phenomena in Petroleum Recovery*, *Energy Sources* **14**, 467-468 (1992).
3. B. K. Chakrabarti and L. G. Benguigui, *Statistical Physics of Fracture and Breakdown in Disordered Systems*, *Journal of Statistical Physics* **94**, 1057-1059 (1999).
4. S. Torquato, *Random Heterogeneous Materials*, *Journal of Statistical Physics* **109**, 331-333 (2002).
5. A. G. Hunt, *Percolation Theory for Flow in Porous Media*, *Hydrogeology Journal* **17**, 1817-1819 (2009).

INVITED LECTURES AND GRADUATE SEMINARS

1. "Critical exponents and thresholds in percolation and conduction," Institute for Mathematics and Its Applications, University of Minnesota, Minneapolis (March 1, 1983).
2. "Phase and interfacial tension behavior of CO₂-water-hydrocarbon mixtures," Gordon Research Conference on Fluids in Permeable Media, New Hampshire (July 25-29, 1983).
3. "Percolation and transport in disordered media," Graduate seminar, Department of Mechanical Engineering and Engineering Mechanics, Michigan Technological University, Houghton (October 7, 1983).
4. "Elements of dispersion in flow through porous media," Graduate seminar, Department of Chemical Engineering, University of California, Davis (January 9, 1984).
5. "Dispersion in flow through porous media," Graduate seminar, Department of Chemical Engineering, University of Southern California, Los Angeles (January 23, 1984).
6. "Fundamentals of enhanced oil recovery," Graduate seminar, Department of Chemical Engineering, University of Illinois, Chicago (June 19, 1984).
7. "Application of percolation theory to the determination of transport and mechanical properties of disordered media," 22nd Annual Meeting of Society of Engineering Sciences, the Pennsylvania State University (October 8, 1985).
8. "Percolation phenomena: theory and applications," Graduate seminar, Department of Mathematics, University of Southern California, Los Angeles (February 14, 1986).
9. "Statistical modeling of fluid displacement processes in porous media," Chevron Oil Field Research Company, La Habra, California (February 26, 1986).
10. "Computer simulations of fluid displacement processes in porous media," Graduate seminar, Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis (February 27, 1986).
11. "Computer simulations of linear and nonlinear transport processes in disordered solids," Graduate seminar, Department of Chemical Engineering, University of California, San Diego (September 30, 1987).
12. "Computer simulations of linear and nonlinear, scalar and vector transport processes in disordered media," Graduate seminar, Department of Chemical Engineering, University of California, Los Angeles (February 5, 1988).
13. "Computer simulations of miscible displacement processes in porous media," Graduate seminar, Department of Chemical Engineering, Rice University, Houston (March 2, 1989).

14. "Applications of large-scale computations and statistical physics of disordered media to transport and reaction in porous media," International Conference on Large-Scale Computations in Statistical Physics, University of Southern Mississippi, Hattiesburg (February 26-27, 1990).
15. "Modeling of mechanical properties of disordered solids," Graduate seminar, Department of Mechanical Engineering, University of Southern California (March 8, 1990).
16. "Failure of composite solids and granular media: computer simulations, scaling, universality, fixed points and comparison with experimental data," Workshop on Percolation Models of Material Failure, Mathematical Sciences Institute, Cornell University, Ithaca (May 30-June 3, 1990).
17. "Reaction and fragmentation of disordered solids," Supercomputer Center HLRZ, KFA Jülich, West Germany (June 14, 1990).
18. "Computer simulations of catalyst deactivation," Koninklijke/Shell-Laboratorium, Amsterdam, the Netherlands (June 25, 1990).
19. "Immiscible displacement processes in porous media," Université Pierre et Marie Curie, Paris, France (June 28, 1990).
20. "Transport and reaction in porous media: fractals, scaling and large-scale simulation," Gordon Research Conference on Fractals, Plymouth College, New Hampshire (August 9, 1990).
21. "Scaling behavior of rheological and fracture properties of gels and composite solids," Graduate seminar, Department of Physics, Colorado State University, Fort Collins (October 24, 1990).
22. "Polymers, disordered materials and fractals," the Rohm and Haas Company, Bristol, Pennsylvania (October 26, 1990).
23. "Role of fractals in transport, reaction and adsorption in catalysts and other porous media," 201st American Chemical Society Meeting, Division of Theoretical Chemistry, Atlanta, Georgia (April 16, 1991).
24. "Calculating permeability and conductivity of porous media: effective-medium theory and renormalization group methods," Chevron Oil Field Research Company, La Habra, California (August 6, 1991).
25. "Computer simulation of catalyst deactivation," Mobil Oil Company, Paulsboro, New Jersey (August 16, 1991).
26. "Elasticity and fracture of disordered materials," Graduate seminar, Department of Mathematics, University of Melbourne, Australia (September 6, 1991).

27. "Percolation models of rheological, mechanical and fracture properties of disordered materials," Graduate seminar, Department of Chemical Engineering, University of Adelaide, Australia (October 16, 1991).
28. "Scaling laws for fracture of disordered materials," International Workshop on Statistical Physics of Disordered Solids, Glasses and Polymers, Calcutta, India (January 7, 1992).
29. "Fractals, fracture and electrical breakdown of disordered materials," Materials Research Society Meeting, San Francisco (April 27, 1992).
30. "Applications of fractal concepts to heterogeneous catalysis," Florida Catalysis Meeting, Palm Coast (April 29-May 1, 1992).
31. "Fractals, fracture and electrical breakdown of disordered materials," International Conference on Fractals in Engineering, École Polytechnique, Montreal, Canada (June 3-5, 1992).
32. "Fracture of disordered materials," Graduate seminar, Department of Chemistry, University of California, Los Angeles (June 12, 1992).
33. "Hydrodynamic dispersion in heterogeneous porous media," 66th Colloid and Surface Science Symposium, the American Chemical Society, Morgantown, West Virginia (June 14-17, 1992).
34. "Two-phase flow in porous media," Koninklijke/Shell-Laboratorium, the Hague, the Netherlands (June 26, 1992).
35. "Earthquakes, rock fracture, fractals, and percolation," HLRZ-KFA Supercomputer Center, Jülich, Germany (July 2, 1992).
36. "Relation between earthquake statistics and rock Fractures, and fractals and percolation," International Conference on Fractals and Disordered Systems, Hamburg, Germany (July 29-31, 1992).
37. "High-dimensional and very large cellular automata for immunological shape space," 4th International Conference on Physics Computing, Prague, Czechoslovakia (August 24-28, 1992).
38. "Computer simulation of particle transport processes in porous media," Graduate seminar, Department of Civil and Environmental Engineering, University of California, Los Angeles (October 12, 1992).
39. "Large-scale computer simulations of mechanical and fracture properties of disordered media," Graduate Seminar, Department of Chemical and Nuclear Engineering, University of California, Santa Barbara (October 22, 1992).
40. "Computer simulation of catalyst deactivation," Catalytica Corporation, Mountain View, California (April 5, 1993).

41. "Role of fractals, percolation, scaling, and long-range correlations in flow through porous media," International Conference on Porous Media and the Environment, the University of Manitoba, Winnipeg, Canada (May 7-8, 1993).
42. "Computer simulation of particle transport processes in porous media," Millipore Corporation, Bedford, Massachusetts (May 24, 1993).
43. "Nucleation and propagation of fractures in heterogeneous rock," Graduate seminar, Department of Petroleum Engineering, Stanford University, Stanford (May 25, 1993).
44. "Computer simulation of fracture of disordered media," Graduate seminar, Departments of Physics and Chemical Engineering, University of Porto, Portugal (July 13, 1993).
45. "Scaling properties of branched polymers and gels," Research Institute for Theoretical Physics, University of Helsinki, Finland (July 21, 1993).
46. "Fracture of disordered solids and rocks," Graduate seminar, Department of Electrical Engineering, Tampere University of Technology, Tampere, Finland (July 23, 1993).
47. "Transport in porous media: fractals, percolation and Monte Carlo simulations," HLRZ Supercomputer Center, KFA Jülich, Germany (August 20, 1993).
48. "High-dimensional and very large cellular automata for immunological shape space," First World Congress on Computational Medicine, Public Health and Biotechnology, Austin, Texas (April 24-28, 1994).
49. "Computer simulation of formation of fracture networks in heterogeneous rock," Graduate seminar, Department of Petroleum Engineering, the University of Texas at Austin, Texas (April 26, 1994).
50. "Fractals in porous media: from aggregation to long-range correlated percolation," Fall Meeting of the Materials Research Society, Boston (November 26-29, 1994).
51. "Percolation and aggregation in evolving porous media" (5 lectures), International Summer School on Topics in Non-equilibrium Statistical Mechanics, University of Porto, Portugal (September 3-16, 1995).
52. "Molecular simulation of diffusion and adsorption in porous catalytic materials," Graduate seminar, Department of Chemical Engineering, University of Missouri-Rolla (October 5, 1995).
53. "Dynamics of diffusion and adsorption in pillared clays," Graduate seminar, Department of Chemistry and Center for Fundamental Materials Research, Michigan State University, East Lansing (October 16, 1995).

54. "Rigidity percolation," Graduate seminar, Department of Physics, Michigan State University, East Lansing (October 16, 1995).
55. "An $\mathcal{O}(\log N)$ algorithm for massively-parallel molecular dynamics simulations," International Conference on Teraflop Computing and New Grand Challenge Applications, Baton Rouge, Louisiana (February 5-7, 1996).
56. "Characterization of field-scale heterogeneous porous media," Argonne National Laboratory, Argonne, Illinois (November 14, 1996).
57. "Coarsening of heterogeneous porous media from pore to field Scale," Workshop on Porous Media Processes, Los Alamos National Laboratory, Los Alamos, New Mexico (April 4, 1997).
58. "Application of percolation theory to multiphase flow in porous media," Lawrence Berkeley National Laboratory, Berkeley, California (April 25, 1997).
59. "Scale up of heterogeneous three-dimensional porous media: fractals, renormalization group transformations, and wavelets," Fourth SIAM Conference on Mathematical and Computational Issues in the Geosciences, Albuquerque, New Mexico (June 17, 1997).
60. "A Neuro-fuzzy-fractal approach to reservoir characterization," Berkeley Initiative on Soft Computing, Lawrence Berkeley National Laboratory, Berkeley, California (March 3-4, 1998).
61. "Wavelets and percolation in geological formations," International Conference on Percolation and Disordered Media, Giessen University, Germany (July 15-17, 1998).
62. "Analysis of complex systems by wavelet transformations," Institute for Advanced Studies on Basic Sciences, Zanjan, Iran (August 24, 1998).
63. "Modelling of naturally fractured reservoirs," Fourth Caribbean Conference on Fluid Dynamics, Merida, Mexico (January 11, 1999).
64. "Application of wavelet transformations to reservoir characterization," Annual Deeplook Meeting, Lawrence Livermore National Laboratory, Livermore, California (March 23, 1999).
65. "Application of wavelet transforms to characterization and modelling of geological formations and flow and transport therein," Institut für Chemie und Dynamik der Geosphäre, Forschungszentrum Jülich, Germany (June 24, 1999).
66. "Scaling of disordered media: from polymers to porous materials" (5 Lectures), International Summer School on Scaling and Disordered Systems, Zanjan, Iran (July 3-16, 1999).
67. "Fractal and geostatistical characterization of fractured rock," Idaho National Engineering and Environmental Laboratory, Idaho Falls (September 2, 1999).

68. "Characterization and simulation of oil and gas reservoirs" (8 Lectures), Japan National Oil Corporation, Chiba (November 24-26, 1999).
69. "Characterization and modeling of oil reservoirs and groundwater aquifers: application of wavelet transformations," Workshop of the Consortium of the Americas on Interdisciplinary Science on Sparsely Connected Systems: Porous and Granular Materials, San Carlos de Bariloche, Argentina (March 14, 2000).
70. "Transport and separation of fluid mixtures in nanoporous materials: theory, simulation, and experiment," Workshop of the Consortium of the Americas on Interdisciplinary Science on Sparsely Connected Systems: Porous and Granular Materials, San Carlos de Bariloche, Argentina (March 16, 2000).
71. "Pore network simulation of imbibition of a coating fluid into printing paper," Gordon Research Conference on Modeling of Flow in Permeable Media, Andover, New Hampshire (August 10, 2000).
72. "Iran's Oil Policy," The Asia Society Symposium on Iran, Los Angeles (January 26, 2001).
73. "Molecular pore network models of nanoporous materials," Sixth International Conference on Electrical Transport and Optical Properties of Inhomogeneous Materials, Snowbird, Utah (July 17, 2002).
74. "Transport and separation of fluid mixtures in nanoporous membranes (4 lectures)," Symposium on Complex Fluids, Instituto de Fisica, Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico (August 26-30, 2002).
75. "Transport properties of heterogeneous materials," Graduate seminar, Department of Physics, University of Southern California, Los Angeles (September 30, 2002).
76. "Transport of fluid mixtures in nanoporous membranes," Graduate seminar, Department of Physics, Ferdowsi University of Mashhad, Mashhad, Iran (October 26, 2002).
77. "Chemical engineering in the 21st century," Keynote Speech, 5th Iranian National Congress of Chemical Engineering, Tehran (October 28, 2002).
78. "Molecular simulation of transport and adsorption of fluid mixtures in nanoporous membranes," Graduate seminar, Institute for Physics and Mathematics, Tehran, Iran (October 29, 2002).
79. "Molecular dynamics simulation of transport and separation of fluid mixtures in nanoporous membranes," Graduate seminar, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran (December 31, 2002).

80. "Computer simulation of transport of particles and clogging in flow through porous media," The Millipore Corporation, Bedford, Massachusetts (January 20, 2003).
81. "Molecular dynamics simulation of transport and separation of fluid mixtures in nanoporous membranes," Graduate seminar, Department of Chemical Engineering and Materials Science, University of California, Irvine (February 14, 2003).
82. "Characterization, modeling, and simulation of fluid flow in microporous media," Proctor & Gamble Corporation, Cincinnati, Ohio (March 13, 2003).
83. "X-ray computed tomography for characterizing the structure of a porous medium," Chevron-Texaco Chemical Research Company, Richmond, California (March 17, 2003).
84. "Nonequilibrium molecular dynamics simulation of transport and separation of fluid mixtures in nanoporous materials," Graduate seminar, Faculty of Applied Sciences, Delft University of Technology, Delft, the Netherlands (June 24, 2003).
85. "Use of multiresolution wavelet transformations in upscaling of heterogeneous reservoirs," International Workshop on Recent Advances in Multiphase Flow and Transport in Porous Media, Delft University of Technology, Delft, the Netherlands (June 24, 2003).
86. "Atomistic modeling and simulation of transport of fluid mixtures in nanoporous materials," Graduate seminar, Department of Chemical Engineering, University of California, Los Angeles (October 17, 2003).
87. "Atomistic modeling of flow of fluid mixtures in nanoporous materials," Satellite Meeting of STATPHYS22, Zanjan, Iran (June 27-30, 2004).
88. "Wavelet transformations: application to characterization of heterogeneous rock," Department of Physics, Universidade Federal do Rio Grande do Norte, Natal, Brazil (September 30, 2004).
89. "Wavelet transformations: application to upscaling of models of oil reservoirs," Department of Physics, Universidade Federal do Rio Grande do Norte, Natal (Brazil, October 1, 2004).
90. "Effect of long-range correlations on acoustic, mechanical, and breakdown properties of disordered materials," Lorentz Workshop on the Statistical Physics of Disorder and Pattern Formation in Fracture, Leiden University, the Netherlands (November 15-19, 2004).
91. "Does Iran need nuclear power plants for its energy needs?" Graduate seminar, Department of International Studies, University of California, Irvine (February 3, 2005).
92. "Iran's nuclear energy program," Graduate seminar, Loyola Law School, Los Angeles (February 17, 2005).

93. "The effect of connectivity of microscopic elements of disordered media on their macroscopic properties: introduction to percolation theory," Graduate seminar, Hydrologic Sciences Group, University of California, Davis (April 14, 2005).
94. "Short-term prediction of medium- and large-size earthquakes based on markov and extended self-similarity analysis of seismic data," International Conference on Models of Earthquake: The Physics Approach, Saha Institute of Nuclear Physics, Kalkota, India (December 13-16, 2005).
95. "Atomistic simulation of nonporous materials and their properties," Graduate seminar, Department of Chemical Engineering and Biological Engineering, Drexel University, Philadelphia (April 19, 2006).
96. "Fluid flow in porous media: from classic methods to modern approaches," National Research Council Institute for Fuel Cell Innovation, Vancouver, Canada (October 5, 2006).
97. "Application of wavelet transformations to simulation of fluid flow and energy transfer in pulse tubes," Raytheon Corporation, Los Angeles (October 15, 2006).
98. "Atomistic simulation of nanoporous materials: layered double hydroxides and polymer-nanotube composites," Graduate seminar, Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena (October 19, 2006).
99. "Markov analysis and Kramers-Moyal expansion of nonstationary stochastic processes," International Conference on Perspectives on Nonlinear Dynamics, International Center for Theoretical Physics, Trieste, Italy (July 17, 2007).
100. "Statistical models of fracture in heterogeneous media," Eleventh International Symposium on Continuum Models and Discrete Systems (CMD511), Paris, France (July 30, 2007).
101. "Characterization of heterogeneous oil reservoirs and efficient simulation of multiphase flow therein," Complexity in the Oil Industry (COI2007), Natal, Brazil (August 6, 2007).
102. "Characterizing microstructure of composite and porous media, and computing their effective transport properties: application of percolation theory," Kirkham Conference on Soil Physics, University of California, Davis (February 24-26, 2008).
103. "Application of nanoparticles to enhanced oil recovery," Advanced Energy Consortium Workshop, Austin, Texas (May 20-21, 2008).
104. "Characterization and modeling of composite materials," Avery Dennison Research Center, Pasadena, California (June 12, 2008).
105. "Atomistic simulation of nanoporous materials and membranes and their properties," Gordon Research Conference on Membranes, Colby-Sawyer College, New Hampshire (August 12, 2008).

106. "Development and optimization of a dynamic model of landfills," RaiseBio-Higrade Summer School on Chemicals in Soils, Leipzig, Germany (September 23, 2008).
107. "Propagation and localization of acoustic and elastic waves in strongly heterogeneous media," 45th Annual Conference of the Society of Engineering Science, University of Illinois, Urbana (October 14, 2008).
108. "Efficient multiscale simulation of transport and reaction processes in heterogeneous media: application of wavelet transformations," Workshop on Models and Images for Porous Media, Université Paris Descartes, Paris, France (January 13, 2009).
109. "Propagation and localization of acoustic and elastic waves in disordered media," PMC-CNRS, Ecole Polytechnique, Paris, France (January 16, 2009).
110. "Frontiers of Research in chemical engineering and materials science," King Abdullah University of Science & Technology, London (April 5, 2009).
111. "Iran's nuclear program: economic justification and political implications," International Conference on Iran's Economy, University of Southern California, Los Angeles (September 18, 2009).
112. "Iran's nuclear program," International Conference on Iran, University of Illinois, Urbana (October 2, 2009).
113. "Characterization and modeling of multiscale porous media: application of multiresolution wavelet transformations," Materials Research Society Fall Meeting, Boston (December 1-3, 2009).
114. "Modeling and upscaling of heterogeneous porous media, and simulation of multiphase fluid flow therein: applications of wavelet transformations," Fall Meeting of the American Geophysical Union, San Francisco (December 14-18, 2009).
115. "Upscaled unstructured grid for simulation of fluid flow in fractured porous media," Gordon Research Conference on Flow Through Porous Media, New Hampshire (July 11-16, 2010).
116. "Diffusion in porous media," Diffusion Fundamentals IV Conference, Rensselaer Polytechnique Institute, Troy, New York (August 21-24, 2011).
117. "Fluid flow through fractured porous media," Fracture & Flow in Porous Media, the Institute of Mathematical Sciences, Chennai, India (January 11-14, 2012).
118. "Atomistic modeling of nanostructured materials and their properties," Graduate seminar, Department of Chemical Engineering and Materials Science, University of California, Irvine (March 9, 2012).

119. "Simulation of fluid flow and transport in large-scale porous media: application of wavelet transformations," Graduate seminar, Department of Geoscience, Boston University, Boston (April 11, 2012).
120. "Porous media, small and large: from quantum-mechanical to field scale, " Graduate seminar, Department of Materials and Transport Engineering, Arizona State University, Tempe (April 4, 2014).
121. "Nuclear energy and Iran," Graduate seminar, San Jose State University, San Jose, California (April 24, 2014).
122. "Porous media, small and large: from quantum-mechanical to field scale, " Graduate seminar, Department of Physics, Wright State University, Dayton, Ohio, (May 1, 2014).
123. "Porous media, small and large: from quantum-mechanical to field scale, " 6th International Conference on Porous Media, Milwaukee, Wisconsin (May 29, 2014).
124. "Porous media, small and large: from quantum-mechanical to field scale, " Graduate seminar, Department of Petroleum Engineering, Louisiana State University, Baton Rouge, Louisiana (April 24, 2015).
125. "Multiscale and multiresolution approach to characterization and modeling of porous media: wavelets, curvelets, and watersheds," 7th International Conference on Porous Media, Padova, Italy (May 20, 2015).
126. "Modeling of nanoporous membranes and flow and separation of fluid mixtures therein: from quantum-mechanical calculation to pore-network simulation," Graduate seminar, Department of Chemical Engineering and Analytical Science, University of Manchester, Britain (July 20, 2015).
127. "Reconstruction of multiscale and multiresolution porous media: cross correlation-based approach," NUPUS Annual Meeting, Freuderstadt, Germany (September 10, 2015).
128. "Analysis of data and characterization and modeling of porous media: a unified approach based on multiresolution wavelet transformations," Graduate seminar, Department of Aerospace and Mechanical Engineering, Rutgers University, New Jersey (April 13, 2016).
129. "Porous media, small and large: from quantum-mechanical to pore and larger scales," Graduate seminar, Department of Chemical & Biological Engineering, Missouri University of Science & Technology, Rolla (September 28, 2016).
130. "Brine flow and evaporation, and salt transport and precipitation in porous media," Graduate seminar, Department of Petroleum Engineering, University of Wyoming, Laramie (October 19, 2017).

131. “Multiresolution wavelet transformation: A powerful tool for characterization and modeling of large-scale porous media,” Graduate seminar, Department of Petroleum Engineering and Geosciences, University of Texas at Austin, Austin (October 8, 2018).
132. “Salt Transport, Evaporation, and Precipitation in Porous Media,” Graduate seminar, Department of Petroleum Engineering, Texas A & M University, College Station, Texas (April 26, 2019).
133. “Reconstruction of Heterogeneous Media by a Cross-Correlation Function and Graph Theory,” Keynote Presentation, International Conference on “Transport Phenomena in Complex Environments,” Erice, Italy (September 3-5, 2019).
134. “Porous Media, Small and Large: From Atomistic Modeling of Membranes to Simulation of Flow and Transport in Geological Formations,” Kimberly-Clark distinguished lecture, International Society on Porous Media (31 August 2020).
135. “Modeling of Shale Formations and Computing Their Effective Properties,” American Geophysical Union Annual Conference (16 December 2020).
136. “Quantum-Mechanical and Molecular Dynamics Simulations of Process-Based Modeling of Nanoporous Membranes,” Kimberly-Clark Distinguished Lecture, University of Stuttgart, Germany (23 February 2021).
137. “Porous Media, Small and Large: From Atomistic Modeling of Membranes to Simulation of Flow and Transport in Geological Formations,” Keynote Speech, 7th Reunión Anual del Capítulo Mexicano de Interpore (4 March 2021).
138. “Swelling and Deformation of Porous Media and Materials: From Atomistic to Continuum Scale,” Kimberly-Clark Distinguished Lecture, Shell Research and Development, Amsterdam, the Netherland (9 March 2021).
139. “Swelling and Deformation of Porous Media and Materials: From Atomistic to Continuum Scale,” Kimberly-Clark Distinguished Lecture, the University of Manchester, United Kingdom (11 March 2021).
140. “Swelling and Deformation of Porous Media and Materials: From Atomistic to Continuum Scale,” Kimberly-Clark Distinguished Lecture, Arts et Métiers Sciences et Technologies, Université de Bordeaux, France (25 March 2021).
141. “Swelling and Deformation of Porous Media and Materials: From Atomistic to Continuum Scale,” Kimberly-Clark Distinguished Lecture, University of Wyoming, Laramie (5 April 2021).

142. “Characterization, Modeling and Upscaling of Large-Scale Porous Media and Fluid Flow Therein: Application of Wavelet and Curvelet Transformations,” Kimberly–Clark Distinguished Lecture, PoreLab, Norwegian University of Science and Technology, Oslo, Norway (12 May 2021).
143. “Characterization, Modeling and Upscaling of Large-Scale Porous Media and Fluid Flow Therein: Application of Wavelet and Curvelet Transformations,” Kimberly–Clark Distinguished Lecture, Universidad Nacional de Colombia, Bogotá, Colombia (26 August 2021).
144. “Porous Media, Small and Large: From Atomistic Modeling of Membranes to Simulation of Flow and Transport in Geological Formations,” Kimberly-Clark distinguished lecture, Sharif University of Technology, Tehran, Iran (13 September 2021).
145. “Multipoint Geostatistics and Reconstruction of Porous Media: Cross-Correlation Function, Graph Theory, and Optimization,” Kimberly-Clark distinguished lecture, Department of Geology and Geophysics, Texas A & M University, College Station, Texas (24 September 2021).
146. “Porous Media, Small and Large: From Atomistic Modeling of Membranes to Simulation of Flow and Transport in Geological Formations,” Kimberly-Clark distinguished lecture, Los Alamos National Laboratory, Los Alamos, New Mexico (5 October 2021).
147. “Porous Media, Small and Large: From Atomistic Modeling of Membranes to Simulation of Flow and Transport in Geological Formations,” Kimberly-Clark distinguished lecture, Heriot Watt University, Edinburgh, Scotland (12 October 2021).
148. “Characterization, Modeling and Upscaling of Large-Scale Porous Media and Fluid Flow Therein: Application of Wavelet and Curvelet Transformations,” Kimberly–Clark Distinguished Lecture, InterPore China (28 October 2021).
149. “Porous Media, Small and Large: From Atomistic Modeling of Membranes to Simulation of Flow and Transport in Geological Formations,” Kimberly-Clark distinguished lecture, Department of Chemical Engineering, Loughborough University, United Kingdom (5 November 2021).
150. “Flow, Diffusion, Adsorption and Deformation in Nano- and Meso-Porous Media: Atomistic Simulation and Statistical-Mechanical Modeling,” Kimberly-Clark distinguished lecture, the Iranian Physical Society (22 December 2021).
151. “Non-Newtonian Fluids in Porous Media: From a Critical State to Instability,” Keynote speech, Workshop on Non-Newtonian Flow in Porous Media, Fortaleza, Brazil (28 June 2022).
152. “Deformation and Swelling of Porous Materials and Their Effect on Flow and Transport Properties: From Molecular to Continuum Scale,” Department of Geological Engineering, Kansas State University, Manhattan, Kansas, (27 October 2022).

153. “Development and Upscaling of Models of Porous Media, and Efficient Simulations of Fluid Flow Therein: Application of Wavelet and Curvelet Transformations,” Keynote speech, Third Biennial Meeting of the Australian Chapter of Interpore, Curtin University, Bentley, PerthBentley, Perth, Australia (28 November 2022).

RESEARCH STUDENTS

I. POST-DOCTORAL STUDENTS

1. Dr. U. Jaekel (May - August 1998)
2. Dr. R. Mallada (January - December 2000)
3. Dr. M. Hashemi (April 2000 - June 2001)
4. Dr. W. Yang (December 2000 - December 2001)
5. Dr. J. Ghassemzadeh (August 2001 - May 2003)
6. Dr. L. Yang (August 2003 - August 2005)
7. Dr. F. Ghasemi (February 2009 - April 2010)
8. Dr. A. Nadri (June - December 2011)
9. Dr. Deyong Yang (January 2014 - December 2014)
10. Dr. Hongbao Zhao (February 2014 - February 2015)
11. Dr. P. Tahmasebi (September 2013 - August 2015)
12. Dr. S. Emamian (January 2015 - March 2016)
13. Dr. H. Malmir (January 2016 - September 2017)

II. DOCTORAL STUDENTS

1. H. Siddiqui, "Cluster Aggregation and Fluid Displacement Processes in Porous Media" (September 1989).
2. S. Arbabi, "Computer Simulation of Rheology, Elasticity and Fracture of Disordered Materials" (January 1991).
3. A. O. Imdakm, "Computer Simulation of Particle Transport Processes in Porous Media" (January 1991).
4. S. Mukhopadhyay, "The Effect of Correlations and Large-Scale Heterogeneities on Flow and Transport in Porous Media and Fractured Rocks" (May 1995).
5. X. Yi, "Molecular Simulation of Adsorption and Diffusion in Pillared Clays" (December 1996).
6. H. Rassamdana, "Asphalts and Asphaltenes: Molecular Structures, Flow and Precipitation Properties" (August 1998).

7. H. I. Kavak, "Gas Flow Models for Landfills" (August 1998).
8. M. Hashemi, "Fractional Flow in Porous Media: Pore Network Simulation and Experimental Studies" (December 1999).
9. M. G. Sedigh, "Transport and Morphological Characteristics of Polyetherimide-based Carbon Molecular Sieve Membrane" (December 1999).
10. L. Xu, "Non-Equilibrium Molecular Dynamics Simulations of Transport and Separation of MultiComponent Gas Mixtures in Carbon Molecular-Sieve Membranes" (May 2001).
11. M. Dadvar, "Computer Simulation of Deactivation of Immobilized Glucose Isomerase in Packed-Bed Reactors" (August 2001).
12. C. Rivard, "Simulation of Solute Transport in Fractured Rock Based on Percolation Networks" (December 2001).
13. J. Ghassemzadeh, "Molecular and Pore Network Simulation of Transport of Gases and Liquids in Porous Materials: Pillared Clays and Printing Paper" (May 2002).
14. M. Madadi, "Lattice Boltzmann Simulation of Fluid Flow and Transport in Network of Fractures with Rough, Self-Affine Surfaces" (July 2002).
15. F. Ebrahimi, "Scale-up of Geological Models of Oil Reservoirs Based on Wavelet Transformations" (October 2002).
16. A. Heidarinasab, "Three-Dimensional Modeling of Photochemical Air Pollution Using Wavelet Transformations" (December 2002).
17. S. Aziz Mohammadi, "Upscaling of Heterogeneous and Fractured Reservoirs using Wavelet Transformation" (February 2005).
18. E. Nedaaee Oskoe, "Numerical Simulation of the Morphology and Transport Properties of Thin Composite Solid Films" (July 2005).
19. M. R. Rasaei, "Upscaling of Multiphase Flows in Heterogeneous Reservoirs using Multiresolution Wavelet Transformations" (July 2005).
20. M. Firouzi, "Molecular Simulation of the Structure, Transport, and Separation of Fluid Mixtures in Nanoporous Membranes under Subcritical and Supercritical Conditions" (December 2005).
21. B. Fayyaz-Najafi, "Nanoporous Silicon Carbide Membranes: Preparation and Reactive Applications" (December 2005).
22. Y. Kim, "In-Situ Studies of the Thermal Evolution of the Structure and Sorption Properties of Mg-Al-CO₃ Layered Double Hydroxide" (May 2006).

23. H. Hamzhepour, "Development of Optimal Models of Large-Scale Porous Media using Static and Dynamic Data and Simulated Annealing" (December 2006).
24. S. M. Vaez Allaei, "Wave Propagation in Heterogeneous Media" (January 2007).
25. S. Zaimy, "Reservoir Characterization Using Inverse Modeling and Modified Genetic Algorithm" (June 2007).
26. M. M. Ostwal, "Experimental and Atomistic Simulation Studies of Water Sorption in Conducting Polyanniline" (August 2007).
27. F. Bagheri-Tar, "Preparation of Polyetherimide Nanoparticles by Electrospray Drying, and Their Use in the Preparation of Mixed-Matrix Carbon Molecular-Sieve Membranes" (December 2007).
28. N. Kim, "Atomistic Simulation of Nanoporous Layered Double Hydroxide Materials and Their Properties" (December 2007).
29. A. Harale, "A Hybrid Adsorbent-Membrane Reactor (HAMR) System for Hydrogen Production" (June 2008).
30. A. R. Mehrabi, "Complex Phenomena in Heterogeneous Media: Three Case Studies" (August 2008).
31. R. Sepehrinia, "Propagation and Localization of Elastic Waves in Heterogeneous Media" (August 2008).
32. R. Sanchez, "Dynamic Modeling and Optimization of a Model of a Landfill" (August 2008).
33. T. W. Kim, "Studies of Transport Phenomena in Hydrotalcite Membranes, and Their Use in Methanol Fuel Cells" (August 2008).
34. H. T. Hwang, "A Study of the Application of Membrane-Based Reactive Separation to the Carbon Dioxide Methanation" (October 2008).
35. L. Javidpour, "Molecular Dynamics Simulation of Folding, Stability, and Transport of Proteins in Nanopores" (December 2008).
36. B. Elyassi, "Fabrication of Nanoporous Silicone-Carbide Membranes for Gas Separation Applications" (May 2009).
37. N. Rajabbeigi, "Molecular Modeling of Silicon Carbide Nanoporous Membranes and Transport and Adsorption of Gaseous Mixtures Therein" (August 2009).
38. M. Dadwhal, "Adsorption of Trace Levels of Arsenic and Selenium from Aqueous Solutions by Conditioned Layered Double Hydroxides" (October 2009).

39. R. Mourhatch, "Experimental Studies and Computer Simulation of the Preparation of Nanoporous Silicon-Carbide Membranes by Chemical-Vapor Infiltration/Chemical-Vapore Deposition" (May 2010).
40. H.-C. Lee, "Development of Carbon Molecular-Sieve Membranes with Tunable Properties: Modification of the Pore Size and Surface Affinity" (August 2010).
41. M. Abdollahi, "An Integrated One Box Process for Hydrogen Production" (May 2011).
42. P. Tahmasebi, "Multiple-Point Geostatistical Simulation based on the Cross-Correlation Function" (May 2012).
43. H. Li, "Performance Prediction, State Estimation, and Production Optimization of a Landfill" (December 2012).
44. J. Yu, "The Use of Carbon Molecule Sieve and Pd Membranes for Conventional and Reactive Applications" (August 2013).
45. W. Deng, "Fabrication of Silicon Carbide Sintered Support and Silicon Carbide Membranes" (September 2013).
46. S. Soltani, "Methanol Synthesis in a Membrane Reactor" (May 2014).
47. X. Yan, "Fabrication of Nanoporous Silicon Oxycarbide Materials via a Sacrificial Template Technique" (June 2014).
48. M. Khademi, "Exploring Various Properties of Silicon-Carbide Nanotubes" (May 2015).
49. S.H. Barghi, "Silicon-Carbide Nanotubes as Materials for Storing Hydrogen" (May 2015).
50. S. Bakhshian, "Chemical and Mechanical Deformation of Porous Media and Materials During Adsorption and Fluid Flow" (January 2018).
51. H. Dashtian, "Multiscale and Multiresolution Approach to Characterization and Modeling of Porous Media: From Pore to Field Scale" (May 2018).
52. S. Zheng, "Molecular Dynamics Studies of Protein Aggregation in Unbounded and Confined Media" (June 2018).
53. C. Wang, "Stability and Folding Rate of Proteins and Identification of Their Inhibitors" (June 2019).
54. N. Piroozan, "Friction and Interfacial Phenomena in Materials: A Study by Molecular-Dynamics Simulations" (May 2019).

55. M. Rahromostaqim, “Two-Phase Flow of CO₂ and Water in Porous Media: From Atomistic to Field Scale” (May 2019).
56. H. Didari, “Theoretical Study of Non-Newtonian Fluid Flow Behavior in Porous Media Using Pore Network Model and Optimization of Minimum Threshold Path” (December 2020).
57. J. Cobeña-Reyes, “Fluids in Nanotubes: Liquid Below the Freezing Point and Icelike Near the Boiling Point” (May 2021).
58. S. Richesson, “Effective Flow and Transport Properties of Deforming Porous Media and Materials: Theoretical Modeling and Comparison with Experimental Data” (May 2021).
59. S. Kamrava, “Machine-Learning Approaches for Modeling of Complex Materials and Media” (May 2021).
60. A. Aljasmí, “Efficient Simulation of Flow and Transport in Complex Images of Porous Materials and Media Using Curvelet Transformation” (August 2021).

III. MASTERS STUDENTS

1. M.D. Stephens, “The Effect of Microscopic Inhomogeneities on the Failure and Fracture Behavior of Disordered and Reinforced Materials” (August 1988).
2. M. Saadatfar, “Monte Carlo Simulation of Diffusion in Disordered Media with Long-Range Correlations” (March 2000).
3. M. Jahangiri, “Transport and Separation of PEI-Based Carbon Molecular Sieve Membranes” (August 2000).
4. E. Nedaaee Oskoei, “Numerical Simulation of Phase Ordering and Roughening in Growing Films” (July 2001).
5. A. Gholami, “Non-Newtonian Behavior in Suspensions” (September 2001).
6. M. Naderian, “Efficient Simulation of AC Conductivity of Heterogeneous and Amorphous Semiconductors Using Wavelet Transformations” (June 2003).
7. M. Rahimi, “Miscible Gas Injection in a Fractured Reservoir in Southwestern Iran” (September 2003).
8. P.N. Patel, “Laboratory Studies of Carbon Dioxide Sequestration in Coalbeds” (May 2004).
9. E. Pazhoohesh, “Efficient Simulation of AC Conduction in Heterogeneous Materials at Low Temperatures: Application of Three-Dimensional Wavelet Transformation” (July 2005).

10. Z. Shahrivari, "Removal of Trace Levels of Arsenic and Selenium from Aqueous Solutions by Calcined and Uncalcined Layered Double Hydroxides (LDH)" (December 2005).
11. A. Mohebbi, "Development of a Static Model for Homa Gas Reservoir" (December 2005).
12. H. Dashtian, "Analysis of Well Logs with Detrended Fluctuation Analysis and its Comparison with other Methods" (December 2010).