

Attachment 1

List of Publications on P-graphs by L. T. Fan and Collaborators

NOTE: Two categories of reference listings are provided:

- (1) Refereed journal articles**
- (2) Non-refereed articles**

In (1) and (2), the individual articles are listed from the most recent (2003) to the oldest (1992 and 1991, respectively).

Refereed journal articles

- 32 Holenda, B., A. Dallos, A. B. Nagy, F. Friedler, and L. T. Fan, A Combinatorial Approach for Generating Environmentally Benign Solvents and Separation Agents, *Chemical Engineering Transactions*, 3, S871-S876 (2003).
- 31 Heckl, I., Z. Kovacs, F. Friedler, and L. T. Fan, Super-structure Generation for Separation Network Synthesis Involving Different Separation Methods, *Chemical Engineering Transactions*, 3, S1209-S1214 (2003).
- 30 Novaki, S., B. Bertok, F. Friedler, L. T. Fan, and G. Feng, Rigorous Algorithm for Synthesizing Azeotropic-Distillation Systems, *Chemical Engineering Transactions*, 3, S1123-S1127 (2003).
- 29 Sarkozi, N., B. Bertok, F. Friedler, and L. T. Fan, Software Tool for Formulating and Solving Various Process-Synthesis Problems, *Chemical Engineering Transactions*, 3, S1203-S1208 (2003).
- 28 Feng, G., L. T. Fan, P. A. Seib, B. Bertok, L. Kalotai, and F. Friedler, A Graph-Theoretic Method for the Algorithmic Synthesis of Azeotropic-Distillation Systems, *Ind. Eng. Chem. Res.*, 42, 3602-3611 (2003).
- 27 Halasz, L., A. B. Nagy, T. Ivicz, F. Friedler, L. T. Fan, Optimal Retrofit Design and Operation of the Steam-Supply System of a Chemical Complex, *Applied Thermal Engineering* 22, 939 -947 (2002).
- 26 Fan, L. T., B. Bertok, and F. Friedler, A Graph-Theoretic Method to Identify Candidate Mechanisms for Deriving the Rate Law of a Catalytic Reaction, *Computers and Chemistry*, 26, 265-292 (2002).
- 25 Fan, L. T., B. Bertok, F. Friedler, and S. Shafie, Mechanisms of Ammonia-Synthesis Reaction Revisited with the Aid of a Novel Graph-Theoretic Method for Determining Candidate Mechanisms in Deriving the Rate Law of a Catalytic Reaction, *Hungarian Journal of Industrial Chemistry*, 29, 71-80 (2001).
- 24 Seo, H., D.-Y. Lee, S. Park, L. T. Fan, S. Shafie, B. Bertok, and F. Friedler, Graph-Theoretical Identification of Pathways for Biochemical Reactions, *Biotechnology Letters*, 23, 1551-1557 (2001).
- 23 Bertok, B., F. Friedler, G. Feng, and L.T. Fan, Systematic Generation of the Optimal and Alternative Flowsheets for Azeotropic Distillation Systems, *Computer-Aided Chemical Engineering*, 9, S351-S356 (2001).
- 22 Nagy, A. B., R. Adonyi, L. Halasz, F. Friedler, and L. T. Fan, Integrated Synthesis of Process and Heat Exchanger Networks: Algorithmic Approach, *Applied Thermal Engineering*, 21/13-14, 1407-1427 (2001).
- 21 Feng, G., L. T. Fan, F. Friedler, and P. A. Seib, Identifying Operating Units for the Design and Synthesis of Azeotropic-Distillation Systems, *Ind. Eng. Chem. Res.*, 39, 175-184 (2000).

- 20 Kovacs, Z., Z. Ercsey, F. Friedler, and L. T. Fan, Separation-Network Synthesis: Global Optimum through Rigorous Super-Structure, *Computers Chem. Engng*, 24, 1881-1900 (2000).
- 19 Brendel, M. H., F. Friedler, and L. T. Fan, Combinatorial Foundation for Logical Formulation in Process Network Synthesis, *Computers Chem. Engng*, 24, 1859-1864 (2000).
- 18 Feng, G., L. T. Fan, and F. Friedler, Synthesizing Alternative Sequences via a P-Graph-Based Approach in Azeotropic Distillation Systems, *Waste Management*, 20, 639-643 (2000).
- 17 Kovacs, Z., Z. Ercsey, F. Friedler, and L. T. Fan, Exact Super-Structure for the Synthesis of Separation-Networks with Multiple Feed-Streams and Sharp Separators, *Computers Chem. Engng*, 23, S1007-1010 (1999).
- 16 Kalotai L., Dallos A., Friedler F., L. T. Fan, Kombinatorikus modszer kivant tulajdonsagu molekulak tervezesehez (in Hungarian), *Magyar Kemikusok Lapja*, 54, 173-181 (1999).
- 15 Kovacs, Z., Z. Ercsey, F. Friedler, and L. T. Fan, Redundancy in a Separation-Network, *Hungarian Journal of Industrial Chemistry*, 26, 213-219 (1998).
- 14 Friedler, F., L. T. Fan, L. Kalotai, and A. Dallos, A Combinatorial Approach for Generating Candidate Molecules with Desired Properties Based on Group Contribution, *Computers Chem. Engng*, 22, 809-817 (1998).
- 13 Friedler, F., L. T. Fan, and B. Imreh, Process Network Synthesis: Problem Definition, *Networks*, 28, 119-124 (1998).
- 12 Imreh, B., F. Friedler, and L. T. Fan, An Algorithm for Improving the Bounding Procedure in Solving Process Network Synthesis by a Branch-and-Bound Method, *Nonconvex Optimization and Its Applications, Developments in Global Optimization* (Eds: I. M. Bomze, T. Csendes, R. Horst, and P. M. Pardalos), pp. 315-348, Kluwer Academic Publishers, Dordrecht, 1997.
- 11 Friedler, F., J. B. Varga, E. Feher, and L. T. Fan, Combinatorially Accelerated Branch-and-Bound Method for Solving the MIP Model of Process Network Synthesis, *Nonconvex Optimization and Its Applications, State of the Art in Global Optimization, Computational Methods and Applications* (Eds: C. A. Floudas and P. M. Pardalos), pp. 609-626, Kluwer Academic Publishers, Dordrecht, 1996.
- 10 Friedler, F., J. B. Varga, and L. T. Fan, Decision-Mapping: A Tool for Consistent and Complete Decisions in Process Synthesis, *Chem. Engng Sci.*, 50, 1755-1768 (1995).
- 9 Varga, J. B., F. Friedler, and L. T. Fan, Parallelization of the Accelerated Branch-and-Bound Algorithm of Process Synthesis: Application in Total Flowsheet Synthesis, *Acta Chimica Slovenica*, 42, 15-20 (1995).
- 8 Hangos, K. M., J. B. Varga, F. Friedler, and L. T. Fan, Integrated Synthesis of a Process and Its Fault-Tolerant Control System, *Computers Chem. Engng*, 19, S465-470 (1995).

- 7 Kovacs, Z., F. Friedler, and L. T. Fan, Parametric Study of Separation Network Synthesis: Extreme Properties of Optimal Structures, *Computers Chem. Engng*, 19, S107-112 (1995).
- 6 Friedler, F., J. B. Varga, and L. T. Fan, Decision-Mapping for Design and Synthesis of Chemical Processes: Application to Reactor-Network Synthesis, *AIChE Symposium Series* (Eds: L. T. Biegler and M. F. Doherty), 91, 246-250 (1995).
- 5 Friedler, F., J. B. Varga, and L. T. Fan, Algorithmic Approach to the Integration of Total Flowsheet Synthesis and Waste Minimization, *AIChE Symposium Series, Volume on Pollution Prevention via Process and Product Modifications* (Eds: M. M. El-Halwagi and D. P. Petrides), 90, 86-97 (1995).
- 4 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Graph-Theoretic Approach to Process Synthesis: Polynomial Algorithm for Maximal Structure Generation, *Computers Chem. Engng*, 17, 929-942 (1993).
- 3 Kovacs, Z., F. Friedler, and L. T. Fan, Recycling in a Separation Process Structure, *AIChE J.*, 39, 1087-1089 (1993).
- 2 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Graph-Theoretic Approach to Process Synthesis: Axioms and Theorems, *Chem. Engng Sci.*, 47, 1973-1988 (1992).
- 1 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Combinatorial Algorithms for Process Synthesis, *Computers Chem. Engng*, 16, S313-320 (1992).

Non-refereed articles

- 88 Fan, L. T., S. Shafie, S. Khaitan, A. More, B. Bertok, and F. Friedler, Algorithmic Identification of Mechanisms of the Ethylene Hydrogenation Reaction, accepted for presentation at the AIChE Annual Meeting, San Francisco, CA, U.S.A., November 16-21, 2003.
- 87 Lee, D.-Y., L. T. Fan, S. Park, S. Y. Lee, S. Shafie, B. Bertok, and F. Friedler, Synergistic Identification of Multiple Flux Distributions and Multiple Metabolic Pathways, accepted for presentation at the AIChE Annual Meeting, San Francisco, CA, U.S.A., November 16-21, 2003.
- 86 Liu, J., L. T. Fan, P. Seib, F. Friedler, and B. Bertok, Feasible and Optimal Flowsheets for Downstream Processing in Biochemical Production of Butanol, Ethanol, and Acetone: Inclusion of Pervaporation, accepted for presentation at the AIChE Annual Meeting, San Francisco, CA, U.S.A., November 16-21, 2003.
- 85 Heckl, I., Z. Kovacs, F. Friedler, and L. T. Fan, Super-Structure Generation for Separation-Network Synthesis Involving Different Separation Methods, presented at ICheaP-6, Pisa, Italy, June 8-11, 2003.
- 84 Novaki, S., B. Bertok, F. Friedler, L. T. Fan, and G. Feng, Rigorous Algorithm for Synthesizing Azeotropic-Distillation Systems, presented at ICheaP-6, Pisa, Italy, June 8-11, 2003.
- 83 Sarkozi, N., B. Bertok, F. Friedler, and L. T. Fan, Software Tool for Formulating and Solving Various Process-Synthesis Problems, presented at ICheaP-6, Pisa, Italy, June 8-11, 2003.
- 82 Holenda, B., A. B. Nagy, A. Dallos, F. Friedler, and L. T. Fan, A Combinatorial Approach for Generating Environmentally Benign Solvents and Separation Agents, presented at ICheaP-6, Pisa, Italy, June 8-11, 2003.
- 81 Seo, H., S. Park, L. T. Fan, S. Shafie, B. Bertok, and F. Friedler, Algorithmic Identification of Stoichiometrically Exact, Plausible Mechanisms of the Catalytic Combustion of Hydrogen on Platinum, presented at the AIChE Annual Meeting, Indianapolis, IN, U.S.A., November 3-8, 2002.
- 80 Seo, H., S. Park, L. T. Fan, S. Shafie, B. Bertok, and F. Friedler, Graph-Theoretic Identification of Stoichiometrically Exact Mechanisms of the Catalytic Reduction of Nitrogen Dioxide (NO₂) by Carbon Monoxide (CO) on Platinum Catalysts, presented at the AIChE Annual Meeting, Indianapolis, IN, U.S.A., November 3-8, 2002.
- 79 Shafie, S., L. T. Fan, B. Bertok, F. Friedler, H. Seo, and S. Park, Rapid Algorithmic Determination of Stoichiometrically Exact Mechanisms of the Catalytic Reactions: Illustration, presented at the ACS Midwest Regional Meeting, Lawrence, KS, U.S.A., October 23-25, 2002.

- 78 Novaki, S., B. Bertok, F. Friedler, and L. T. Fan, Algorithmic Synthesis of an Azeotropic-Distillation System: Production of Pure Ethanol Revisited, presented at the PRES'02 (5th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction), Praha, Czech Republic, August 25-29, 2002.
- 77 Ercsey, Z., Z. Kovacs, F. Friedler, and L. T. Fan, Super-Structure in Action, presented at the PRES'02 (5th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction), Praha, Czech Republic, August 25-29, 2002.
- 76 Fan, L. T., J. Liu, F. Friedler, and B. Bertok, Identification of Alternative Reaction Paths via Graph-theoretic Synthesis of Reaction Networks, presented at the AIChE Annual Meeting, Indianapolis, IN, U.S.A., November 3-8, 2002.
- 75 Fan, L. T., J. Liu, F. Friedler, and B. Bertok, Algorithmic Profit-potential Estimation for Developing Green Processes, presented at the AIChE Annual Meeting, Indianapolis, IN, U.S.A., November 3-8, 2002.
- 74 Bertok, B., F. Friedler, G. Feng, and L.T. Fan, Systematic Generation of the Optimal and Alternative Flowsheets for Azeotropic Distillation Systems, presented at ESCAPE-11 (Eleventh European Symposium on Computer Aided Process Engineering), Kolding, Denmark, May 27-30, 2001.
- 73 Seo, H., D.-Y. Lee, S. Park, L. T. Fan, S. Shafie, B. Bertok, and F. Friedler, Graph-Theoretical Identification of Pathways for Biochemical Reactions, presented at PRES01(the 4th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction), Florence, Italy, May 20-23, 2001.
- 72 Halasz, L., A. B. Nagy, T. Ivicz, F. Friedler, and L. T. Fan, Optimal Operation of the Steam Supply Network of a Complex Chemical Processing System, appeared in the proceedings of the PRES'01 (4th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction), Florence, Italy, May 20 - May 23, 2001, pp.331-336
- 71 Seo, H., S. Park, L. T. Fan, S. Shafie, B. Bertok, and F. Friedler, An Attempt for the Identification of Stoichiometrically Exact Mechanisms of the Catalytic Reduction of Nitrogen Dioxide (NO₂) by Carbon Monoxide (CO) on Platinum Catalysts, presented at the KICHe 2001 Spring Meeting, Seoul, South Korea, April 27-28, 2001.
- 70 Seo, H., S. Park, L. T. Fan, S. Shafie, B. Bertok, and F. Friedler, Mechanism of Catalytic Combustion of Hydrogen, presented at PSE Asia 2000 (International Symposium on Design, Operation and Control of Next Generation Chemical Plants), Kyoto, Japan, December 6-8, 2000.
- 69 Fan, L. T., S. Shafie, B. Bertok, and F. Friedler, Mechanism of HBr Formation Revisited, presented at the AIChE Annual Meeting, Los Angeles, CA, U.S.A., November 12-17, 2000.

- 68 Friedler, F., B. Bertok, L. T. Fan, and S. Shafie, Detailed Mechanism of Ammonia-Synthesis Reaction, presented at the AIChE Annual Meeting, Los Angeles, CA, U.S.A., November 12-17, 2000.
- 67 Bertok, B., F. Friedler, G. Feng, and L. T. Fan, Combinatorial Framework for the Algorithmic Synthesis of Azeotropic-Distillation Systems, presented at the AIChE Annual Meeting, Los Angeles, CA, U.S.A., November 12-17, 2000.
- 66 Seo, H., S. Park, L. T. Fan, S. Shafie, B. Bertok, and F. Friedler, An Attempt for the Identification of Stoichiometrically Exact Mechanisms of the Reaction between H₂ and O₂ on Platinum Catalysts, presented at the KICChE fall meeting, Pohang, South Korea, October 20-21, 2000.
- 65 Bertok, B., G. Feng, L. T. Fan, and F. Friedler, Combinatorial Framework for the Algorithmic Synthesis of Azeotropic-Distillation Systems, presented at the CHISA 2000 (14th International Congress of Chemical and Process Engineering), Praha, Czech Republic, August 27-31, 2000.
- 64 Bertok, B., R. Adonyi, G. Feng, L. T. Fan, and F. Friedler, Systematic Synthesis of an Azeotropic-Distillation System for Production of Pure Ethanol from its Aqueous Solution with Toluene as the Entrainer, presented at the CHISA 2000 (14th International Congress of Chemical and Process Engineering), Praha, Czech Republic, August 27-31, 2000.
- 63 Nagy, A. B., G. Biros, F. Friedler, and L. T. Fan, Integrated Synthesis of Combined Process and Heat Exchanger Networks, presented at the CHISA 2000 (14th International Congress of Chemical and Process Engineering), Praha, Czech Republic, August 27-31, 2000.
- 62 Nagy, A. B., F. Friedler, and L. T. Fan, Integrated Synthesis of Combined Process and Heat Exchanger Networks, presented at the 20th Workshop on Chemical Engineering Mathematics, Veszprem, Hungary, July 26-29, 2000.
- 61 Feng, G., L. T. Fan, B. Bertok, L. Kalotai, and F. Friedler, A Graph-Theoretic Approach to the Algorithmic Synthesis of Azeotropic-Distillation Systems, presented at the AIChE Spring National Meeting, Atlanta, GA, U.S.A., March 5-9, 2000.
- 60 Fan, L. T., B. Bertok, and F. Friedler, Combinatorial Framework for the Systematic Generation of Reaction Pathways, presented at the AIChE Annual Meeting, Dallas, TX, U.S.A., October 31 - November 5, 1999.
- 59 Kovacs, Z., Z. Ercsey, F. Friedler, and L. T. Fan, Exact Super-Structure for the Synthesis of Separation-Networks with Multiple Feed-Streams and Sharp Separators, presented at the ESCAPE-9 (Ninth European Symposium on Computer Aided Process Engineering), Budapest, Hungary, May 31 - June 2, 1999.
- 58 Bertok, B., F. Friedler, and L. T. Fan, Generation of Process Synthesis Problems for Testing Evaluating and Comparing Synthesis Methods, presented at the PRES'99 (Second Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction), Budapest, Hungary, May 31 - June 2, 1999.

- 57 Feng, G., L. T. Fan, and F. Friedler, Synthesizing Alternative Sequences via a P-Graph Based Approach in Azeotropic Distillation Systems, presented at the PRES'99 (Second Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction), Budapest, Hungary, May 31 - June 2, 1999.
- 56 Nagy, A., L. Halasz, F. Friedler, and L. T. Fan, Integrated Synthesis of Process and Heat Exchanger Networks: Algorithmic Approach, presented at the PRES'99 (2nd Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, Budapest, Hungary, May 31 - June 2, 1999.
- 55 Ercsey, Z., Z. Kovacs, F. Friedler, and L. T. Fan, Separation-Network Synthesis: Global Optimum through Rigorous Super-Structure, presented at the AIChE Annual Meeting, Miami Beach, FL, U.S.A., November 15-20, 1998.
- 54 Nagy, A., F. Friedler, and L. T. Fan, Combinatorial Acceleration of Separable Concave Programming for Process Synthesis, presented at the AIChE Annual Meeting, Miami Beach, FL, U.S.A., November 15-20, 1998.
- 53 Nagy, A., F. Friedler, and L. T. Fan, Algorithmic Generation of Multiple Solutions for Process Synthesis, presented at the CHISA '98 (13th International Congress of Chemical and Process Engineering), Praha, Czech Republic, August 23-28, 1998.
- 52 Kalotai, L., A. Dallos, F. Friedler, and L. T. Fan, Design of Environmentally Benign Chemical Species, presented at the CHISA '98 (13th International Congress of Chemical and Process Engineering), Praha, Czech Republic, August 23-28, 1998.
- 51 Holczinger, T., F. Friedler, and L. T. Fan, Process Synthesis for Retrofit Design, presented at the CHISA '98 (13th International Congress of Chemical and Process Engineering), Praha, Czech Republic, August 23-28, 1998.
- 50 Bertok, B., F. Friedler, and L. T. Fan, Random Generation of Test Problems for Process Synthesis, presented at the CHISA '98 (13th International Congress of Chemical and Process Engineering), Praha, Czech Republic, August 23-28, 1998.
- 49 Fan, L. T. and F. Friedler, Reaction Pathway Analysis by a Network Synthesis Technique, presented in the Session on Reaction Path Analysis, AIChE Annual Meeting, Los Angeles, CA, U.S.A., November 16-21, 1997.
- 48 Friedler, F., J. B. Varga, P. Hobor, and L. T. Fan, Combinatorial Approach to Process Synthesis: Sectionally Continuous Cost Functions of Operating Units, presented in the Session on Process Synthesis, AIChE Annual Meeting, Los Angeles, CA, U.S.A., November 16-21, 1997.
- 47 Feng, G., F. Friedler, and L. T. Fan, Generating Alternative Sequences via a P-Graph Based Approach in Azeotropic Distillation Systems, presented at the AIChE National Meeting, Houston, TX, U.S.A., March 9-13, 1997.

- 46 Imreh, B., F. Friedler, and L. T. Fan, Effective Branch-and-Bound Strategy for Process Network Synthesis, presented at the INFORMS (Institute for Operations Research and the Management Sciences) Atlanta Fall 1996 Conference, Atlanta, GA, U.S.A., November 3-6, 1996.
- 45 Feher, E., F. Friedler, and L. T. Fan, Accelerated Branch-and-Bound Method for Solving Process Network Synthesis Problems with Sectionally Continuous Cost Functions, presented at the XIII. International Conference on Mathematical Programming, Matraháza, Hungary, March 24-27, 1996.
- 44 Friedler, F., B. Imreh, and L. T. Fan, Satisfiability for the Structural Model of Process Network Synthesis, presented at the DIMACS (Center for Mathematics and Theoretical Computer Sciences) Workshop on Satisfiability Problem: Theory and Applications, Rutgers University, New Brunswick, NJ, U.S.A., March 11-13, 1996.
- 43 Kovacs, Z., F. Friedler, and L. T. Fan, Algorithmic Generation of the Mathematical Programming Model for Process Network Synthesis, presented at the IIIrd Workshop on Global Optimization, Szeged, Hungary, December 10-14, 1995, p. 60.
- 42 Imreh, B., F. Friedler, and L. T. Fan, Polynomial Algorithm for Improving the Bounding Procedure in Solving Process Network Synthesis by a Branch and Bound Method, presented at the IIIrd Workshop on Global Optimization, Szeged, Hungary, December 10-14, 1995, p. 27.
- 41 Kovacs, Z., F. Friedler, and L. T. Fan, Algorithmic Generation of the Mathematical Programming Model for Process Synthesis, presented in the Session on Computational Approaches in Systems Engineering, AIChE Annual Meeting, Miami Beach, FL, U.S.A., November 12-17, 1995.
- 40 Friedler, F. and L. T. Fan, Combinatorial Foundation of Process Synthesis, Plenary Lecture at the 7th International Summer School of Chemical Engineering, Varna, Bulgaria, September 19-25, 1995.
- 39 Varga, J. B., F. Friedler, and L. T. Fan, Parallelization of the Accelerated Branch and Bound Algorithm of Process Synthesis: Application in Total Flowsheet Synthesis, presented at the ESCAPE-5 (Fifth European Symposium on Computer Aided Process Engineering), Bled, Slovenia, June 11-14, 1995.
- 38 Hangos, K. M., J. B. Varga, F. Friedler, and L. T. Fan, Integrated Synthesis of a Process and its Fault-Tolerant Control System, presented at the ESCAPE-5 (Fifth European Symposium on Computer Aided Process Engineering), Bled, Slovenia, June 11-14, 1995.
- 37 Kovacs, Z., F. Friedler, and L. T. Fan, Parametric Study of Separation Network Synthesis: Extreme Properties of Optimal Structures, presented at the ESCAPE-5 (Fifth European Symposium on Computer Aided Process Engineering), Bled, Slovenia, June 11-14, 1995.
- 36 Varga, J. B., F. Friedler, Y. Zhang, and L. T. Fan, Synthesis of Reaction Paths with Minimum Involvement of Hazardous Substances, presented at the 10th Anniversary

Conference on Hazardous Waste Research, Kansas State University, Manhattan, KS, U.S.A., May 23-24, 1995.

- 35 Friedler, F., J. B. Varga, E. Feher, and L. T. Fan, Combinatorially Accelerated Branch-and-Bound Method for Solving the MIP Model of Process Network Synthesis, presented at the International Conference on State of the Art in Global Optimization: Computational Methods and Applications, Princeton University, Princeton, NJ, U.S.A., April 28-30, 1995.
- 34 Varga, J. B., F. Friedler, and L. T. Fan, Risk Reduction through Waste Minimizing Process Synthesis, presented at the 21st Annual RREL (Risk Reduction Engineering Laboratory) Research Symposium, Cincinnati, OH, U.S.A., April 4-6, 1995; also published in the Proceedings of the Symposium, 359-363.
- 33 Kovacs, Z., F. Friedler, and L. T. Fan, A New Formulation for Solving Separation Network Synthesis Problems of Multiple Feed-Streams and Multicomponent Product Streams, presented in the Session on Design and Analysis, AIChE National Meeting, Houston, TX, U.S.A., March 19-23, 1995.
- 32 Friedler, F., J. B. Varga, and L. T. Fan, Integration of Waste Treatment into Process Synthesis, presented in the Session on Design and Analysis, AIChE National Meeting, Houston, TX, U.S.A., March 19-23, 1995.
- 31 Varga, J. B., F. Friedler, and L. T. Fan, Parallel Combinatorially Accelerated Branch and Bound Algorithm for Process Synthesis, presented in the Session on High Performance Computing in Computer Process Design, AIChE Annual Meeting, San Francisco, CA, U.S.A., November 13-18, 1994.
- 30 Friedler, F. and L. T. Fan, Algorithmic Generation of a Minimally Complex Mixed-Integer Programming Model for Process Synthesis, presented in the Session on Advances in Optimization, AIChE Annual Meeting, San Francisco, CA, U.S.A., November 13-18, 1994.
- 29 Friedler, F., J. B. Varga, and L. T. Fan, Algorithmic Approach to the Integration of Total Flowsheet Synthesis and Waste Minimization, presented in the Session on Pollution Prevention via Process and Product Modifications; Tools, Methodologies, Case Studies, AIChE Summer National Meeting, Denver, CO, U.S.A., August 14-17, 1994.
- 28 Friedler, F., J. B. Varga, and L. T. Fan, Decision-Mapping for Design and Synthesis of Chemical Processes: Application to Reactor-Network Synthesis, presented at the FOCAPD '94 (Fourth International Conference on Foundations of Computer-Aided Process Design), Snowmass Village, CO, U.S.A., July 10-14, 1994.
- 27 Hangos, K. M., F. Friedler, J. Varga, and L. T. Fan, Graph-Theoretic Approach to Integrated Process and Control System Synthesis, presented at the IFAC '94 (International Federation of Automatic Control) Workshop on Integration of Process Design and Control, Baltimore, MD, U.S.A., June 27-28, 1994; also published in the Proceedings of the Workshop, 58-63.

- 26 Varga, J. B., F. Friedler, and L. T. Fan, Systematic Approach for Process Synthesis Incorporating In-Plant Waste Treatment, presented at the Conference on Hazardous Waste Remediation, Bozeman, MT, U.S.A., June 8-10, 1994.
- 25 Friedler, F. and L. T. Fan, Reduction of Subproblem Size for the Accelerated Branch and Bound Algorithm of Process Network Synthesis, presented at the XII. International Conference on Mathematical Programming, Matrafured, Hungary, January 22-27, 1994.
- 24 Kovacs, Z., F. Friedler, and L. T. Fan, Fundamental Properties of Optimal Separation Networks, presented in the Session on Design and Analysis, AIChE Annual Meeting, St. Louis, MO, U.S.A., November 7-12, 1993.
- 23 Varga, J., F. Friedler, and L. T. Fan, Combinatorial Technique for Multiperiod Process Network Synthesis, presented in the Session on Network Synthesis at the 21st Hungarian Conference on Operations Research, Szeged, Hungary, October 2-4, 1993.
- 22 Kovacs, Z., F. Friedler, and L. T. Fan, Algorithmic Generation of the NLP Model for Separation Network Synthesis, presented in the Session on Network Synthesis at the 21st Hungarian Conference on Operations Research, Szeged, Hungary, October 2-4, 1993.
- 21 Friedler, F., L. T. Fan, and B. Imreh, Maximal Structure Generation in Process Network Synthesis, presented in the Session on Network Synthesis at the 21st Hungarian Conference on Operations Research, Szeged, Hungary, October 2-4, 1993.
- 20 Friedler, F. and L. T. Fan, Reduction of Subproblem Size for the Combinatorially Accelerated Branch and Bound Algorithm of Process Network Synthesis, presented in the Session on Network Synthesis at the 21st Hungarian Conference on Operations Research, Szeged, Hungary, October 2-4, 1993.
- 19 Friedler, F. and L. T. Fan, Combinatorial Technique for the Design and Synthesis of Large Scale Manufacturing Systems, presented in the Session on the Large Scale Systems, Methodology and Applications at the IFAC '93 (12th World Congress, International Federation of Automatic Control), Sydney, Australia, July 19-23, 1993; also published in the Proceedings of the Congress, 10, 397-400.
- 18 Friedler, F., J. Varga, and L. T. Fan, A Combinatorial Approach to the Multiperiod Synthesis of the Structure of Process Industries, presented at the ESCAPE-3 (European Symposium on Computer Aided Process Engineering), Graz, Austria, July 5-7, 1993; also published in the Proceedings of the Symposium, 2-6 (1993).
- 17 Kovacs, Z., F. Friedler, and L. T. Fan, Algorithmic Generation of the Mathematical Model for Separation Network Synthesis, presented at the ESCAPE-3 (European Symposium on Computer Aided Process Engineering), Graz, Austria, July 5-7, 1993; also published in the Proceedings of the Symposium, 7-11 (1993).
- 16 Kovacs, Z., F. Friedler, and L. T. Fan, Redundancy in Separation Networks for Waste Elimination, presented at the Conference on Hazardous Waste Research, Manhattan, KS, U.S.A., May 25-26, 1993.

- 15 Friedler, F., J. Varga, and L. T. Fan, A Combinatorial Technique for Determining the Optimal Development Strategy for the Chemical and Petroleum Industries, presented in the Session on Industrial Applications of CAD at the AIChE National Meeting, Houston, TX, U.S.A., March 28-April 1, 1993.
- 14 Friedler, F. and L. T. Fan, Reduction of Subproblem Size for the Accelerated Branch and Bound Method of Process Synthesis, presented in the Session on New Advances in Process Synthesis and Analysis at the AIChE National Meeting, Houston, TX, U.S.A., March 28-April 1, 1993.
- 13 Friedler, F. and L. T. Fan, Combinatorial Acceleration of the Branch and Bound Search for Process Network Synthesis, presented in the Session on Computational Methods for Linear and Mixed-Integer Programming at the Symposium on Applied Mathematical Programming and Modeling, Budapest, Hungary, January 6-8, 1993; also published in the Proceedings of the Symposium, 192-200.
- 12 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Combinatorial Technique for Process Design and Synthesis, presented in the Session on Design & Analysis at the AIChE Annual Meeting, Miami, FL, U.S.A., November 1-6, 1992.
- 11 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Combinatorial Foundation of Process Synthesis, presented in the Session on Mathematical Applications in Chemical Engineering at the 42nd CSChE (Canadian Society for Chemical Engineering) Annual Conference, Toronto, Canada, October 18-21, 1992; also published in the Proceedings of the Conference, 207-208.
- 10 Friedler, F. and L. T. Fan, Process Synthesis Incorporating In-Plant Waste Treatment: Algorithmic Approach, presented in the Session on Systematic Design Approaches to Hazardous-Waste Management at the ACS Special Symposium on Hazardous-Waste Management, Atlanta, GA, U.S.A., September 21-23, 1992; also published in the Proceedings of the Symposium, I, 325-328.
- 9 Friedler, F., Z. Kovacs, and L. T. Fan, Unique Separation Networks for Improved Waste Elimination, presented in the Session on Computer Aided Approaches to Hazardous-Waste Management at the ACS Special Symposium on Hazardous-Waste Management, Atlanta, GA, U.S.A., September 21-23, 1992; also published in the Proceedings of the Symposium, II, 457-460.
- 8 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Combinatorial Structure of Process Network Synthesis, presented at the Sixth SIAM Conference on Discrete Mathematics, Vancouver, Canada, June 8-11, 1992.
- 7 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Computer-Aided Waste Minimizing Design of a Chemical Process, presented at the Seventh Annual Conference on Hazardous Waste Research, Boulder, CO, U.S.A., June 1-2, 1992; also published in the Proceedings of the Conference, 107-116.
- 6 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Combinatorial Algorithms for Process Synthesis, presented at the ESCAPE-1 (European Symposium on Computer Aided Process Engineering), Elsinore, Denmark, May 24-28, 1992.

- 5 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Accelerated Branch and Bound Method for Process Network Synthesis, Preprints of the Department of Mathematics, University of Veszprem, Hungary, 3/5, 1-7 (1992).
- 4 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, A Systematic Approach to Waste Minimizing Synthesis of a Chemical Process: Production of Perchloromethyl Mercaptan, presented in the Session on Process Technology for Waste Reduction at the AIChE National Meeting, Pittsburgh, PA, U.S.A., August 17-21, 1991; also published in the Proceedings of the Conference, 93-98.
- 3 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, An Accelerated Branch and Bound Method for Process Synthesis, presented at the Fourth World Congress of Chemical Engineering, Karlsruhe, Germany, June 16-21, 1991; also published in the Proceedings of the Congress, paper 12.2-9.
- 2 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Process Synthesis by Exploiting the Combinatorial Properties of Feasible Process Structures, presented at the Fourth World Congress of Chemical Engineering, Karlsruhe, Germany, June 16-21, 1991; also published in the Proceedings of the Congress, paper 12.2-5.
- 1 Friedler, F., K. Tarjan, Y. W. Huang, and L. T. Fan, Waste Minimizing Synthesis of a Process for Production of Perchloromethyl Mercaptan: Systematic Approach, presented at the Conference on Hazardous Waste Research, Kansas State University, Manhattan, KS, U.S.A., May 29-30, 1991; also published in the Proceedings of the Conference, 248-261.

Attachment 2

**List of Publications on Stochastic Analysis and Modeling
by
L. T. Fan and Collaborators**

NOTE: Only refereed journal articles are provided.

The individual articles are listed from the most recent (2003) to the oldest (1972).

Refereed journal articles

- 67 Fan, L. T., A. Argoti Caicedo, S. T. Chou, and W. Y. Chen, "Stochastic Modeling of Thermal Death Kinetics of a Cell Population: Revisited," *Chemical Engineering Education*, **37**, 228-235 (2003).
- 66 Chen, W. Y., A. Kulkarni, J. L. Milum, and L. T. Fan, "Stochastic Modeling of Carbon Oxidation," *AIChE J.*, **45**, 2557-2570 (1999).
- 65 Chen, X., W. Y. Chen, A. H. Hikal, B. C. Shen, and L.T. Fan, "Stochastic Modeling of Controlled-Drug Release," *Biochemical Engineering Journal*, **2**, 161-177 (1998).
- 64 Fan, L. T., Y. Kang, M. Yashima, and D. Neogi, "Stochastic Behavior of Fluidized Particles in a Liquid-Solid Fluidized Bed," *Chem. Eng. Comm.*, **135**, 147-160 (1995).
- 63 Fan, L. T., B. C. Shen, and S. T. Chou, "Stochastic Modeling of Transient Residence-Time Distributions during Start-Up," *Chem. Eng. Sci.*, **50**, 211-221 (1995).
- 62 Chen, W. Y., Z. P. Zhang, B. C. Shen, and L. T. Fan, "Stochastic Modeling of Tar Molecular Weight Distribution During Coal Pyrolysis," *Chem. Eng. Sci.*, **49**, 3687-3698 (1994).
- 61 Shen, B. C., L. T. Fan, and W. Y. Chen, "Stochastic Modeling of Adsorption in a Batch System," *J. of Hazardous Materials*, **38**, 353-371 (1994).
- 60 Chen, W. Y., G. Nagarajan, Z. P. Zhang, B. C. Shen, and L. T. Fan, "Stochastic Modeling of Devolatilization-Induced Coal Fragmentation during Fluidized-Bed Combustion," *Ind. Eng. Chem. Res.*, **33**, 137-145 (1994).
- 59 Singh, S. K., B. C. Shen, S. T. Chou, and L. T. Fan, "Acid Hydrolysis of 4K2-Carrageenan in a Batch Reactor: Stochastic Simulation of Change of Molecular Weight Distribution with Time," *Biotechnol. Prog.*, **10**, 389-397 (1994).
- 58 Fan, L. T., B. C. Shen, and S. T. Chou, "The Surface-Renewal Theory of Interphase Transport: A Stochastic Treatment," *Chem. Eng. Sci.*, **48**, 3971-3982 (1993).
- 57 Neogi, D., R. Nassar, and L. T. Fan, "Fractional Brownian Motion Modeling of Pressure Fluctuations in Multiphase Flow System," *Applied Stochastic Models and Data Analysis*, **9**, 19-38 (1993).
- 56 Yashima, M., R. Nassar, L. T. Fan, and Y. Kang, "Stochastic Modeling of Pressure Fluctuations in a Three-Phase Fluidized Bed," *AIChE J.*, **38**, 629-634 (1992).
- 55 Nassar, R., S. T. Chou, and L. T. Fan, "Stochastic Analysis of Stepwise Cellulose Degradation," *Chem. Eng. Sci.*, **46**, 1651-1657 (1991).

- 54 Fan, L. T., Y. Y. Chiu, J. R. Schlup, and S. T. Chou, "The Master Equation for Linear Adsorption and Desorption of Gases on Solid Surfaces," *Chem. Eng. Comm.*, **108**, 127-146 (1991).
- 53 Shen, B. C., L. T. Fan, and S. T. Chou, "Dynamic Modeling of Active Transport Across a Biological Cell: Distribution of Protein Complex Molecules in the Cell Membrane and Fluxes of Transported Molecules," *J. of Chin. I. Ch. E.*, **22**, 335-344 (1991).
- 52 Fan, L. T., D. Neogi, M. Yashima, and R. Nassar, "Stochastic Analysis of a Three-Phase Fluidized Bed: Fractal Approach," *AIChE J.*, **36**, 1529-1535 (1990).
- 51 Fox, R. O., and L. T. Fan, "Stochastic Modeling of Chemical Process Systems," *Chemical Engineering Education*, **XXIV**, 56-60 (1990).
- 50 Fox, R. O., and L. T. Fan, "Stochastic Modeling of Chemical Process Systems, Part 2, The Master Equation," *Chemical Engineering Education*, **XXIV**, 88-92 (1990).
- 49 Fox, R. O., and L. T. Fan, "Stochastic Modeling of Chemical Process Systems, Part 3, Application," *Chemical Engineering Education*, **XXIV**, 164-167 (1990).
- 48 Nassar, R., S. T. Chou, L. T. Fan, and J. R. Too, "A Probabilistic Model for the Dynamics of a Structured Population of Unicellular Organisms," *Comm. Statist. Stochastic Models*, **6**, 593 – 614 (1990).
- 47 Duggirala, S. K., and L. T. Fan, "Stochastic Analysis of Attrition – A General Cell Model," *Powder Technology*, **57**, 1-20 (1989).
- 46 Neogi, D., L. T. Fan, N. Yutani, R. Nassar, and W. P. Walawender, "Effect of Superficial Velocity on Pressure Fluctuations in a Gas-Solid Fluidized Bed: A Stochastic Analysis," *Applied Stochastic Models and Data Analysis*, **4**, 13-34 (1988).
- 45 Fox, R. O., and L. T. Fan, "Application of the Master Equation to Coalescence and Dispersion Phenomena," *Chem. Eng. Sci.*, **43**, 655-670 (1988).
- 44 Chou, S. T., L. T. Fan, and J. P. Hsu, "Stochastic Analysis of the Transient Behavior of an Msmpr Crystallizer; Effects of the Seed Size Distribution and Size Dependent Growth Rate, Probability," *Engineering and Informational Sciences*, **1**, 383-404 (1987).
- 43 Duggirala, S. K., and L. T. Fan, "Stochastic Modeling of Non-Linear Sieving Kinetics," *Chem. Eng. Comm.*, **61**, 59-88 (1987).
- 42 Fox, R. O., and L. T. Fan, "Comments on a Stochastic Approach to the Analysis of Chemically Reacting Systems," Letters to the Editors, *Chem. Eng. Sci.*, **42**, 1861-1862 (1987).

- 41 Fox, R. O., and L. T. Fan, "Stochastic Analysis of Axial Solids Mixing in a Fluidized Bed," *Chem. Eng. Comm.*, **60**, 27-45 (1987).
- 40 Nassar, R., S. T. Chou, and L. T. Fan, "Stochastic Analysis of Particle Degradation in a Semi-Continuous Flow System Containing Solid Particles," *Hungarian Journal of Industrial Chemistry Veszprem*, **15**, 73-82 (1987).
- 39 Yutani, N., N. Ototake, and L.T. Fan, "Statistical Analysis of Mass Transfer in Liquids-Solids Fluidized Beds," *Ind. Eng. Chem. Res.*, **26**, 343-347 (1987).
- 38 Fox, R. O., and L. T. Fan, "Stochastic Modeling of Chemical Engineering Systems. Application of the Generalized Master Equation to the Bubble Population in a Bubbling Fluidized Bed," *Chem. Eng. Sci.*, **42**, 1345-1358 (1987).
- 37 Too, J. R., L. T. Fan, and R. Nassar, "A Stochastic Axial Dispersion Model for Tubular Flow Reactors," *Chem. Eng. Sci.*, **41**, 2341-2346 (1986).
- 36 Too, J. R., R. Nassar, S. T. Chou, and L. T. Fan, "Stochastic Analysis of Crystallization in an Open Flow System," *J. of the Chin. I. Ch. E.*, **17**, 304-313 (1986).
- 35 Yutani, N., N. Ototake, and L. T. Fan, "Stochastic Analysis of Fluctuations in the Local Void Fraction of a Gas-Solids Fluidized Bed," *Powder Technology*, **48**, 31-38 (1986).
- 34 Nassar, R., S. T. Chou, and L. T. Fan, "Modeling and Simulation of Deep-Bed Filtration: A Stochastic Compartmental Model," *Chem. Eng. Sci.*, **41**, 2017-2027 (1986).
- 33 Fox, R. O., and L. T. Fan, "A Stochastic Model of the Bubble Population in a Fluidized Bed," *Chem. React. Des. Technol.*, **110**, 291-304 (1986).
- 32 Yutani, N., and L. T. Fan, "Stochastic Analysis and Its Application to Fluidized Beds," *Kagaku Kogaku*, **50**, 321-326 (1986). (In Japanese).
- 31 Nassar, R., J. R. Too, and L. T. Fan, "A Probabilistic Model of the Fischer-Tropsch Synthesis in a Flow Reactor," *Chem. Eng. Comm.*, **43**, 287-300 (1986).
- 30 Too, J. R., R. O. Fox, L. T. Fan, and R. Nassar, "Stochastic Modeling of a Fluidized-Bed Reactor," *AIChE J.*, **31**, 992-998 (1985).
- 29 Fan, L. T., J. R. Too, and R. Nassar, "Stochastic Simulation of Residence Time Distribution Curves," *Chem. Eng. Sci.*, **40**, 1743-1749 (1985).
- 28 Fan, L. T., S. H. Hwang, S. T. Chou, and R. Nassar," An Experimental Study of Deep-Bed Filtration: Stochastic Analysis," *Powder Technology*, **44**, 1-11 (1985).
- 27 Yutani, N., and L. T. Fan, "Mixing of Randomly Moving Particles in Liquid-Solid Fluidized Beds," *Powder Technology*, **42**, 145-152 (1985).

- 26 Hsu, E. H., and L. T. Fan, "Experimental Study of Deep Bed Filtration: A Stochastic Treatment," *AIChE J.*, **30**, 267-273 (1984).
- 25 Nassar, R., J. R. Too, and L. T. Fan, "Stochastic Diffusion Model for Crystal Size Distribution in an Open Flow System," *AIChE J.*, **30**, 1014-1016 (1984).
- 24 Song, J. C., L. T. Fan, and N. Yutani, "Fault Detection of the Fluidized Bed Distributor by Pressure Fluctuation Signal," *Chem. Eng. Comm.* **25**, 105-116 (1984).
- 23 Hiraoka, S., S. H. Shin, L. T. Fan, and K. C. Kim, "Pressure Fluctuations in a Gas-Solid Fluidized Bed – Effect of External Noise and Bubble Residence Time Distribution," *Powder Technology*, **38**, 125-143 (1984).
- 22 Fan, L. T., S. Hiraoka, and S. H. Shin, "Analysis of Pressure Fluctuations in a Gas-Solid Fluidized Bed," *AIChE J.*, **30**, 346-349 (1984).
- 21 Yutani, N., T. C. Ho, L. T. Fan, W. P. Walawender, and J. C. Song, "Statistical Study of the Grid Zone Behavior in a Shallow Gas-Solid Fluidized Bed Using A Mini-Capacitance Probe," *Chem. Eng. Sci.*, **38**, 575-582 (1983).
- 20 Fan, L. T., T. C. Ho, and W. P. Walawender, "Measurements of the Rise Velocities of Bubbles, Slugs and Pressure Waves in a Gas-Solid Fluidized Bed Using Pressure Fluctuation Signals," *AIChE J.*, **29**, 33-39 (1983).
- 19 Too, J. R., L. T. Fan, and R. Nassar, "Markov Chain Models of Complex Chemical Reactions in Continuous Flow Reactors," *Comp. Chem. Eng.*, **7**, 1-12 (1983).
- 18 Lin, S. T., and L. T. Fan, "A Simple Stochastic Model of Two Phase Flow Pressure Drop Accompanied by Boiling Inside Circular Tubes with Inline Static Mixers," *Int. J. Multiphase Flow*, **8**, 279-284 (1982).
- 17 Yutani, N., N. Ototake, J. R. Too, and L.T. Fan, "Estimation of the Particle Diffusivity in a Liquid-Solids Fluidized Bed Based on a Stochastic Model," *Chem. Eng. Sci.*, **37**, 1079-1085 (1982).
- 16 Lin, S. T., and L. T. Fan, "Pressure Drop of Two-Phase Flow through Circular Tubes with In-Line Static Mixers Accompanied by Condensation-Simple Stochastic Modeling of the Data," *Int. J. Heat Mass Transfer*, **24**, 1851-1853 (1981).
- 15 Nassar, R., J. Too, and L. T. Fan, "A Stochastic Treatment of Unimolecular Reactions in Unsteady State Continuous Flow System," *Chem. Eng. Sci.*, **36**, 1307-1317 (1981).
- 14 Nassar, R., J. Too, and L. T. Fan, "Stochastic Modeling of Polymerization in a Continuous Flow Chemical Reactor," *J. of Applied Polymer Science*, **26**, 1-15 (1981).

- 13 Too, J. R., L. T. Fan, R. M. Rubison, and F. S. Lai, "Applications of Nonparametric Statistics to Multicomponent Solids Mixing," *Powder Technol.*, **26**, 131-146 (1980).
- 12 Fan, L. T., L. S. Fan, and R. F. Nassar, "A Stochastic Model of the Unsteady State Age Distribution in a Flow System," *Chem. Eng. Sci.*, **34**, 1172-1174 (1979).
- 11 Fan, L. T., and S. H. Shin, "Stochastic Diffusion Model of Non-Ideal Mixing in a Horizontal Drum Mixer," *Chem. Eng. Sci.*, **34**, 811-820 (1979).
- 10 Wang, R. H., L. T. Fan, and J. R. Too, "Multivariate Statistical Analysis of Solids Mixing," *Powder Technol.*, **21**, 171-182 (1978).
- 9 Wang, R. H., and L. T. Fan, "Stochastic Modeling of Segregation in a Motionless Mixer," *Chem. Eng. Sci.*, **32**, 695-701 (1977).
- 8 Lai, F. S., R. H. Wang, and L. T. Fan, "Reply to Comments on 'An Application of Nonparametric Statistics to the Sampling in Solids Mixing,'" *Powder Technol.*, **12**, 95 (1975).
- 7 Fan, L. T., and R. H. Wang, "Probability Models in Reaction Path Synthesis," *AIChE J.*, **21**, 1233-1234 (1975).
- 6 Radhakrishnan, K. P., J. J. Lizcano, L. T. Fan, and L. E. Erickson, "Experimental Simulation of Stochastic Stream Response to Thermal Inputs and Application of Spectral Analysis Techniques," *Water Research*, **8**, 455-466 (1974).
- 5 Radhakrishnan, K. P., J. J. Lizcano, L. E. Erickson, and L. T. Fan, "Evaluation of Methods for Estimating Stream Water Quality Parameters in a Transient Model from Stochastic Data," *Water Resources Bulletin*, **10**, 899-913 (1974).
- 4 Lizcano, J. J., K. P. Radhakrishnan, L. T. Fan, and L. E. Erickson, "Identification of Parameters in Transient Water Quality Models from Stochastic Data," *Water, Air, and Soil Pollution*, **3**, 261-278 (1974).
- 3 Lai, F. S., R. H. Wang, and L. T. Fan, "An Application of Nonparametric Statistics to the Sampling in Solids Mixing," *Powder Technol.*, **10**, 13-21 (1974).
- 2 Chen, S. J., L. T. Fan, and C. A. Watson, "The Mixing of Solid Particles in a Motionless Mixer – A Stochastic Approach," *AIChE J.*, **18**, 984-989 (1972).
- 1 Shah, P. S., L. E. Erickson, and L. T. Fan, "Growth Models of Cultures with Two Liquid Phases. VI. Parameter Estimation and Statistical Analysis," *Biotechnol. Bioeng.*, **XIV**, 533-570 (1972).