

1. Castellanos, J. and I. Grossmann, "Mathematical Modelling of a Vapour Condenser with Non-condensable Gases" (in Spanish), *Revista del Instituto Mexicano de Ingenieros Quimicos* **15**(5), 58 (1974).
2. Grossmann, I.E. and R.W.H. Sargent, "Optimum Design of Heat Exchanger Networks," *Computers and Chemical Engineering* **2**, 1 (1978).
3. Grossmann, I.E. and R.W.H. Sargent, "Optimum Design of Chemical Plants with Uncertain Parameters," *AIChE J.* **24**, 1021 (1978).
4. Grossmann, I.E. and R.W.H. Sargent, "Optimum Design of Multipurpose Chemical Plants," *Ind. Eng. Chem. Process Des. Development* **18**, 343 (1979).
5. Grossmann, I.E. and J. Santibanez, "Applications of Mixed Integer Linear Programming in Process Synthesis," *Computers and Chemical Engineering* **4**, 205 (1980).
6. Halemane, K.P. and I.E. Grossmann, "A Remark on the Paper Theoretical and Computational Aspects of the Optimal Design Centering, Tolerancing and Tuning Problem," *IEEE Trans. Circuits Syst.* Vol. CAS-28, 163 (1981).
7. Castillo, J. and I.E. Grossmann, "Computation of Phase and Chemical Equilibria," *Computers and Chemical Engineering* **5**, 99 (1981).
8. Halemane, K.P. and I.E. Grossmann, "Selection of Decision and Torn Variables in Process Design Computations," *Proceedings of 1981 Summer Computer Simulation Conference*, 230 (1981).
9. Grossmann, I.E. and J. Davidson, "Computation of Restricted Chemical Equilibria," *Computers and Chemical Engineering* **6**, 181 (1982).
10. Grossmann, I.E. and K.P. Halemane, "A Decomposition Strategy for Designing Flexible Chemical Plants," *AIChE J.* **28**, 686 (1982).
11. Grossmann, I.E., R. Drabbant and R.K. Jain, "Incorporating Toxicology in the Synthesis of Industrial Chemical Complexes," *Chemical Eng. Communications* **17**, 151 (1982).
12. Grossmann, I.E., K.P. Halemane and R.E. Swaney, "Optimization Strategies for Flexible Chemical Processes," *Computers and Chemical Engineering* **7**, 439 (1983).
13. Halemane, K.P. and I.E. Grossmann, "Optimal Process Design under Uncertainty," *AIChE J.* **29**(3), 425 (1983).
14. Avidan, A.I. and I.E. Grossmann, "FLEXPACK - A Computer Package for Optimal Multiperiod Design," *Proceedings of the 3rd International Congress on Computers and Chemical Engineering* (Paris), Vol. II, C-158 (1983).

15. Papoulias, S.A. and I.E. Grossmann, "A Structural Optimization Approach in Process Synthesis. Part I: Utility Systems," *Computers and Chemical Engineering* **7**, 695 (1983).
16. Papoulias, S.A. and I.E. Grossmann, "A Structural Optimization Approach in Process Synthesis. Part II: Heat Recovery Networks," *Computers and Chemical Engineering* **7**, 707 (1983).
17. Papoulias, S.A. and I.E. Grossmann, "A Structural Optimization Approach in Process Synthesis. Part III: Total Processing Systems," *Computers and Chemical Engineering* **7**, 723 (1983).
18. Papoulias, S.A. and I.E. Grossmann, "Optimal Synthesis of Flexible Utility Systems," *Proceedings of the 18th IECEC Conference*, 2066-2071, Orlando (1983).
19. Grossmann, I.E. and M. Morari, "Operability, Resiliency and Flexibility - Process Design Objectives for a Changing World," *Proceedings of 2nd International Conference on Foundations of Computer-Aided Process Design* (Eds. A.W. Westerberg and H.H. Chien), 931 (1984).
20. Swaney, R.E. and I.E. Grossmann, "An Index for Operational Flexibility in Chemical Process Design. Part I: Formulation and Theory," *AIChE J.* **31**, 621 (1985).
21. Swaney, R.E. and I.E. Grossmann, "An Index for Operational Flexibility in Chemical Process Design. Part II: Computational Algorithms," *AIChE J.* **31**, 631 (1985).
22. Biegler, L.T., I.E. Grossmann and A.W. Westerberg, "A Note on Approximation Techniques Used for Process Optimization," *Computers and Chemical Engineering* **9**, 201 (1985).
23. Grossmann, I.E. and C. Floudas, "A New Approach for Evaluating Flexibility in Chemical Process Design," *I. Chem. E. Symposium Series No. 92*, 619 (1985).
24. Biegler, L.T. and I.E. Grossmann, "Strategies in the Optimization of Chemical Processes," *Reviews in Chemical Engineering* **3**, 1 (1985).
25. Grossmann, I.E., "Mixed-integer Programming Approach for the Synthesis of Integrated Process Flowsheets," *Computers and Chemical Engineering* **9**, 463 (1985).
26. Shelton, M.R. and I.E. Grossmann, "A Shortcut Procedure for Refrigeration Systems," *Computers and Chemical Engineering* **9**, 615 (1985).
27. Duran, M.A. and I.E. Grossmann, "An Outer-Approximation Algorithm for a Class of Mixed-integer Nonlinear Programs," *Math Programming* **36**, 307 (1986).
28. Duran, M.A. and I.E. Grossmann, "An Outer-Approximation Algorithm for a Class of Mixed-integer Nonlinear Programs. II. The Relation with Generalized Benders Decomposition Method," DRC Report 06-68-84, Carnegie Mellon University (1984).
29. Wood, R.M., R.J. Wilcox and I.E. Grossmann, "A Note on the Minimum Number of Units for Heat Exchanger Network Synthesis," *Chemical Eng. Communications* **39**, 371 (1985).

30. Floudas, C.A. and I.E. Grossmann, "Synthesis of Flexible Heat Exchanger Networks for Multiperiod Operation," *Computers and Chemical Engineering* **10**, 153 (1986).
31. Vaselenak, J.A., I.E. Grossmann and A.W. Westerberg, "Heat Integration in Batch Processing," *I.E.C. Process Design and Dev.* **25**, 357 (1986).
32. Floudas, C.A., A.R. Ciric and I.E. Grossmann, "Automatic Synthesis of Optimal Heat Exchanger Network Configurations," *AIChE J.* **32**, 276 (1986).
33. Duran, M.A. and I.E. Grossmann, "Simultaneous Optimization and Heat Integration of Chemical Processes," *AIChE J.* **32**, 123 (1986).
34. Duran, M.A. and I.E. Grossmann, "A Mixed-integer Nonlinear Programming Algorithm for Process Systems Synthesis," *AIChE J.* **32**, 592 (1986).
35. Shelton, M.R. and I.E. Grossmann, "Optimal Synthesis of Integrated Refrigeration Systems. I: Mixed-integer Programming Model," *Computers and Chemical Engineering* **10**, 445 (1986).
36. Shelton, M.R. and I.E. Grossmann, "Optimal Synthesis of Integrated Refrigeration Systems. II: Implicit Enumeration Algorithm," *Computers and Chemical Engineering* **10**, 461 (1986).
37. Biegler, L.T., I.E. Grossmann, G.L. Thompson and A.W. Westerberg, "Strategies for Optimal Process Redesign," *Proceedings 4th Symposium on Energy Eng. Sci.*, Argonne, IL, p. 102 (1986).
38. Vaselenak, J.A., I.E. Grossmann and A.W. Westerberg, "An Embedding Formulation for the Optimal Scheduling and Design of Multipurpose Batch Plants," *Ind. Eng. Chem. Res.* **26**, 139 (1987).
39. Vaselenak, J.A., I.E. Grossmann and A.W. Westerberg, "Optimal Retrofit Design of Multiproduct Batch Plants," *Ind. Eng. Chem. Res.* **26**, 718 (1987).
40. Grossmann, I.E. and C.A. Floudas, "Active Constraint Strategy for Flexibility Analysis in Chemical Processes," *Computers and Chemical Engineering* **11**, 675 (1987).
41. Floudas, C.A. and I.E. Grossmann, "Automatic Generation of Multiperiod Heat Exchanger Network Configurations," *Computers and Chemical Engineering* **11**, 123 (1987).
42. Floudas, C.A. and I.E. Grossmann, "Synthesis of Flexible Heat Exchanger Networks with Uncertain Flowrates and Temperatures," *Computers and Chemical Engineering* **11**, 319 (1987).
43. Floudas, C.A. and I.E. Grossmann, "Automatic Synthesis of Flexible Heat Exchanger Networks for Multiperiod Operation," *ASME Advanced Energy Systems AES-Vol. 2-1*, 75 (1986).
44. Kocis, G.R. and I.E. Grossmann, "Relaxation Strategy for the Structural Optimization of Process Flowsheets," *Ind. Eng. Chem. Res.* **26**, 1869 (1987).

45. Olsbu, A., P.A. Loeken and I.E. Grossmann, "A Mixed-Integer Programming Model for the Design and Planning of Power Systems in Oil Production Platforms," *Engineering Costs and Production*, **14**, 281 (1988).
46. Lang, Y.D., L.T. Biegler and I.E. Grossmann, "Simultaneous Optimization and Heat Integration with Process Simulators," *Computers and Chemical Engineering* **12**, 311 (1988).
47. Pistikopoulos, E.N. and I.E. Grossmann, "Optimal Retrofit Design for Improving Process Flexibility-Linear Systems," *Computers and Chemical Engineering* **12**, 719 (1988).
48. Yee, T. and I.E. Grossmann, "Optimization Model for Structural Modifications in the Retrofit of Heat Exchanger Networks," *Proceedings of Foundations of Computer Aided Process Operations* (Eds. G.V. Reklaitis and H.D. Spriggs, Elsevier), 653 (1987).
49. Biegler, L.T., I.E. Grossmann and G.V. Reklaitis, "Applications of OR Techniques in Chemical Engineering," *Handbook of Engineering Design Using Operations Research Methods*, North-Holland Publishing Co. (1987).
50. Grossmann, I.E., A.W. Westerberg and L.T. Biegler, "Retrofit Design of Chemical Processes," *Proceedings of Foundations of Computer Aided Process Operations* (Eds. G.V. Reklaitis and H.D. Spriggs, Elsevier), 403 (1987).
51. Pistikopoulos, E.N. and I.E. Grossmann, "Evaluation and Redesign for Improving Flexibility in Linear Systems with Infeasible Nominal Conditions," *Computers and Chemical Engineering* **12**, 841 (1988).
52. Pistikopoulos, E.N. and I.E. Grossmann, "Stochastic Optimization of Flexibility in Retrofit Design of Linear Systems," *Computers and Chemical Engineering* **12**, 1215 (1988).
53. Kocis, G.R. and I.E. Grossmann, "Global Optimization of Nonconvex MINLP Problems in Process Synthesis," *Ind. Eng. Chem. Res.* **27**, 1407 (1988).
54. Kocis, G.R. and I.E. Grossmann, "Solution of Mixed Integer Nonlinear Programming Problems in Engineering Design with DICOPT," *Proceedings Design Theory '88 NSF Workshop*, RPI, p. 5.6.1 (1988).
55. Birewar, D. and I.E. Grossmann, "Incorporating Scheduling in the Optimal Design of Multiproduct Batch Plants," *Computers and Chemical Engineering* **13**, 141 (1989).
56. Kocis, G.R. and I.E. Grossmann, "Computational Experience with DICOPT in Solving MINLP Problems in Process Systems Engineering," *Computers and Chemical Engineering* **13**, 307 (1989).
57. Sahinidis, N., I.E. Grossmann, R.E. Fornari and M. Chatrathi, "Optimization Model for Long Range Planning in the Chemical Industry," *Computers and Chemical Engineering* **13**, 1049 (1989).

58. Kocis, G.R. and I.E. Grossmann, "Modelling and Decomposition Strategy for the MINLP Optimization of Process Flowsheets," *Computers and Chemical Engineering* **13**, 797 (1989).
59. Pistikopoulos, E.N. and I.E. Grossmann, "Optimal Retrofit Design for Improving Flexibility in Nonlinear Systems. I. Fixed Degree of Flexibility," *Computers and Chemical Engineering* **13**, 1003 (1989).
60. Pistikopoulos, E.N. and I.E. Grossmann, "Optimal Retrofit Design for Improving Flexibility in Nonlinear Systems. II. Optimal Level of Flexibility," *Computers and Chemical Engineering* **13**, 1087 (1989).
61. Birewar, D. and I.E. Grossmann, "Efficient Optimization Algorithms for Zero-Wait Scheduling of Multiproduct Batch Plants," *Ind. Eng. Chem. Res.* **28**, 1333 (1989).
62. Westerberg, A.W., I.E. Grossmann, S. Talukdar, F. Prinz, S. Fenves and M.L. Maher, "Applications of AI in Design Research at Carnegie Mellon University's EDRC," *Proceedings of AI Eng. 89 Conference*, Cambridge, England, July (1989).
63. Viswanathan, J. and I.E. Grossmann, "A Combined Penalty Function and Outer Approximation Method for MINLP Optimization," *Computers and Chemical Engineering* **14**, 769 (1990).
64. Gundersen, T. and I.E. Grossmann, "Improved Optimization Strategies for Automated Heat Exchanger Networks through Physical Insights," *Computers and Chemical Engineering* **14**, 925 (1990).
65. Birewar, D. and I.E. Grossmann, "Simultaneous Planning and Scheduling of Multiproduct Batch Plants," *Ind. Eng. Chem. Res.* **29**, 570 (1990).
66. Grossmann, I.E., "MINLP Optimization Algorithms and Strategies for Process Synthesis," *Proceedings of FOCAPD '89*, Eds. Sirrola *et al*, p.105, Elsevier (1990).
67. Sahinidis, N.V. and I.E. Grossmann, "Reformulation of the Multiperiod MILP Model for Capacity Expansion of Chemical Processes," *Operations Research* **40**(Supp. 1), S127-S144 (1992).
68. Straub, D.A. and I.E. Grossmann, "Integrated Stochastic Metric of Flexibility for Systems with Discrete State and Continuous Parameter Uncertainties," *Computers and Chemical Engineering* **14**, 967 (1990).
69. Birewar, D. and I.E. Grossmann, "Simultaneous Synthesis, Sizing and Scheduling of Multiproduct Batch Plants," *Ind. Eng. Chem. Res.* **29**, 2242 (1990).
70. Grossmann, I.E., "Mixed Integer Nonlinear Programming Techniques for the Synthesis of Engineering Systems," *Research in Engineering Design* **1**, 205 (1990).
71. Kravanja, Z. and I.E. Grossmann, "PROSYN: An MINLP Process Synthesizer," *Computers and Chemical Engineering* **14**, 1363 (1990).
72. Yee, T.F., I.E. Grossmann and Z. Kravanja, "Simultaneous Optimization Models for Heat Integration. I. Energy and Area Targeting," *Computers and Chemical Engineering* **14**, 1151 (1990).

73. Yee, T.F. and I.E. Grossmann, "Simultaneous Optimization Models for Heat Integration. II. Synthesis of Heat Exchanger Networks," *Computers and Chemical Engineering* **14**, 1165 (1990).
74. Yee, T.F., I.E. Grossmann and Z. Kravanja, "Simultaneous Optimization Models for Heat Integration. III. Optimization of Process Flowsheets and Heat Exchanger Networks," *Computers and Chemical Engineering* **14**, 1185 (1990).
75. Sahinidis, N.V. and I.E. Grossmann, "Multiperiod Capacity Expansion for Optimal Design of Chemical Complexes," *Operational Research '90*, 549 (1990).
76. Sahinidis, N.V. and I.E. Grossmann, "MINLP Model for Cyclic Multiproduct Scheduling on Continuous Parallel Lines," *Computers and Chemical Engineering* **15**, 85 (1991).
77. Sahinidis, N.V. and I.E. Grossmann, "Reformulation of Multiperiod MILP Models for Planning and Scheduling of Chemical Processes," *Computers and Chemical Engineering* **15**, 255 (1991).
78. Yee, T. and I.E. Grossmann, "A Screening and Optimization Approach for the Optimal Retrofit of Heat Exchanger Networks," *Ind. Eng. Chem. Res.* **30**, 146 (1991).
79. Raman, R. and I.E. Grossmann, "Relation Between MILP Modelling and Logical Inference for Chemical Process Synthesis," *Computers and Chemical Engineering* **15**, 73 (1991).
80. Sahinidis, N.V. and I.E. Grossmann, "Multiperiod Investment Decision Model for Multiproduct Processing Networks," *Ind. Eng. Chem. Research* **29**, 1165 (1991).
81. Sahinidis, N.V. and I.E. Grossmann, "Convergence Properties of Generalized Benders Decomposition," *Computers and Chemical Engineering*, **15**, 481 (1991).
82. Raman, R. and I.E. Grossmann, "Logical Inference in Branch and Bound Search for Process Synthesis," *Proceedings of Process Systems Engineering 91*, I. 10.1, Montreal (1991).
83. Grossmann, I.E., Voudouris, V.T. and O. Ghattas, "Mixed-Integer Linear Programming Reformulations of Some Nonlinear Discrete Design Optimization Problems," *Recent Advances in Global Optimization* (eds. C.A. Floudas and P.M. Pardalos), 478-512, Princeton University Press (1992).
84. Ghattas, O. and I.E. Grossmann, "MINLP and MILP Strategies for Discrete Sizing Structural Optimization Problems," *Proceedings of ASCE 10th Conference on Electronic Computation*, accepted for publication.
85. Grossmann, I.E. and D.A. Straub, "Recent Developments in the Evaluation and Optimization of Flexible Chemical Processes," *Proceedings of COPE '91* (Eds. Puigjaner and Espuña), 41, Elsevier (1991). Also in *Proceedings NATO-ASI on Batch Processing* (1992).
86. Raman, R. and I.E. Grossmann, "Integration of Logic and Heuristic Knowledge in the MINLP Optimization for Process Synthesis," *Computers and Chemical Engineering* **16**, 155-171 (1992).

87. Diwekar, U.M., I.E. Grossmann and E.S. Rubin, "An MINLP Process Synthesizer for a Sequential Modular Simulator," *Ind. Eng. Chem. Research* **31**, 313 (1992).
88. Straub, D.A. and I.E. Grossmann, "Evaluation and Optimization of Stochastic Flexibility in Multiproduct Batch Plants," *Computers and Chemical Engineering* **16**, 69-87 (1992).
89. Varvarezos, D.K., I.E. Grossmann and L.T. Biegler, "An Outer Approximation Method for Multiperiod Design Optimization," *Ind. Eng. Chem. Research* **31**, 1466-1477 (1992).
90. Fenves, S.J. and I.E. Grossmann, "An Interdisciplinary Course in Engineering Synthesis," *Research in Engineering Design*, **3**, 223-231 (1992).
91. Voudouris, V.T. and I.E. Grossmann, "Mixed-Integer Linear Programming Models for the Optimal Design of Batch Processes with Discrete Sizes," *Ind. Eng. Chem. Research* **31**, 1315-1325 (1992).
92. Quesada, I. and I.E. Grossmann, "An LP/NLP Based Branch and Bound Algorithm for MINLP Optimization," *Computers and Chemical Engineering*, **16**, 937 (1992).
93. Amarger, R., L.T. Biegler and I.E. Grossmann, "REFORM—An Intelligent Interface for Design Optimization," *Computers and Chemical Engineering*, **16**, 623-636 (1992).
94. Grossmann, I.E., "Mathematical Methods for Heat Exchanger Network Synthesis," *Proceedings of the IEA Workshop on Process Integration*, Gothenburg (1992).
95. Raman, R. and I.E. Grossmann, "Symbolic Integration of Logic in Mixed Integer Linear Programming Techniques for Process Synthesis," *Computers and Chemical Engineering*, **17**, 909 (1993).
96. Hooker, J.N., H. Yan, I.E. Grossmann, and R. Raman "Logic Cuts for Processing Networks with Fixed Charges," *Computers and Operations Research* **21**, 265-279 (1994).
97. Straub, D.A. and I.E. Grossmann, "Design Optimization of Stochastic Flexibility," *Computers and Chemical Engineering*, **17**, 339 (1993).
98. Raman, R. and I.E. Grossmann, "Symbolic Integration of Logic in MILP Branch and Bound Methods for the Synthesis of Process Networks," *Annals of Operations Research*, **42**, 169-191 (1993).
99. Quesada, I. and I.E. Grossmann, "Global Optimization Algorithm for Heat Exchanger Networks," *Ind. Eng. Chem. Research*, **32**, 487 (1993).
100. Viswanathan, J. and I.E. Grossmann, "An Alternate MINLP Model for Finding the Number of Trays Required for a Specified Separation Objective," *Computers and Chemical Engineering*, **17**, 949-955 (1993).
101. Grossmann, I.E., J. Quesada, R. Raman and V. Voudouris, "Mixed Integer Optimization Techniques for the Design and Scheduling of Batch Processes," *Batch Processing Systems Engineering* (Eds. G.V. Reklaitis, A.K. Sunol, D.W.T. Rippin, O. Hortacsu), 451-494, Springer-Verlag, Berlin (1996).

102. Kravanja, Z. and I.E. Grossmann, "PROSYN—An Automated Topology and Parameter Process Synthesizer," Supplement to *Computers and Chemical Engineering*, **17**, S87-S94 (1993).
103. Novak, Z., Z. Kravanja, and I.E. Grossmann, "Simultaneous Optimization Model for Multicomponent Separation," Supplement to *Computers and Chemical Engineering*, **18**, S125-S130 (1993).
104. Westerlund, T., F. Pettersen and I.E. Grossmann, "Optimization of Pump Configurations as a MINLP Problem," *Computers and Chemical Engineering*, **9**, 845-858 (1994)
105. Varvarezos, D.K., L.T. Biegler and I.E. Grossmann, "Multiperiod Design Optimization with SQP Decomposition," *Computers and Chemical Engineering*, **18**, 579 (1994).
106. Raman, R. and I.E. Grossmann, "Modeling and Computational Techniques for Logic Based Integer Programming," *Computers and Chemical Engineering*, **18**, 563 (1994).
107. Voudouris, V.T. and I.E. Grossmann, "Optimal Synthesis of Multiproduct Batch Plants with Cyclic Scheduling and Inventory Considerations," *I&EC Research*, **32**, 1962-1980 (1993).
108. Daichendt, M.M. and I.E. Grossmann, "Preliminary Screening Procedure for the MINLP Synthesis of Process Systems. I. Aggregation and Decomposition Techniques," *Computers and Chemical Engineering*, **18**, 663 (1994).
109. Daichendt, M.M. and I.E. Grossmann, "Preliminary Screening Procedure for the MINLP Synthesis of Process Systems. II. Heat Exchanger Networks," *Computers and Chemical Engineering*, **18**, 679 (1994).
110. Pinto, J. and I.E. Grossmann, "Optimal Cyclic Scheduling of Multistage Multiproduct Continuous Plants," *Computers and Chemical Engineering*, **18**, 797-816 (1994)
111. Viswanathan, J. and I.E. Grossmann, "Optimal Feed Locations and Number of Trays for Distillation Columns with Multiple Feeds," *I&EC Research*, **32**, 2942-2949 (1993).
112. Norton, L.C. and I.E. Grossmann, "Strategic Planning Model for Complete Process Flexibility," *Ind.Eng.Chem.Res.*, **33**, 69-76 (1994).
113. Kravanja Z. and I.E. Grossmann, "New developments and capabilities in PROSYN—an automated topology and parameter process synthesizer", *Computers Chem. Engng.*, **18**, 1097-1114 (1994).
114. Quesada, I.E. and I.E. Grossmann, "A Global Optimization Algorithm for Linear Fractional and Bilinear Programs," *Journal of Global Optimization*, **6**, 39-76 (1995).
115. Quesada, I. and I.E. Grossmann, "Global Optimization of Bilinear Process Networks with Multicomponent Streams," *Computers Chem. Engng.*, **19**, 1219-1242 (1995).

116. Voudouris, V. and I.E. Grossmann, "An MILP Model for the Optimal Design and Scheduling of a Special Class of Multipurpose Plants," *Computers Chem. Engng.*, **20**, 1335-1360 (1996)
117. Daichendt, M.M. and I.E. Grossmann, "A Preliminary Screening Procedure for MINLP Heat Exchanger Network Synthesis Using Aggregated Models," *Chemical Engineering Design and Research*, **72**, 357 (1994)
118. Clay, R.L. and I.E. Grossmann, "Optimization of Stochastic Production Planning Models," *Chemical Engineering Design and Research*, **72**, 415 (1994)
119. Varvarezos, D., L. T. Biegler and I.E. Grossmann, "Modeling Uncertainty and Analyzing Bottleneck Characteristics in Multiperiod Design Optimization", *Computers and Chemical Engineering*, **19**, 497-511 (1995).
120. Varvarezos, D.K., I.E. Grossmann and L.T. Biegler, "A Sensitivity Based Approach for the Flexibility Analysis and Design of Linear Process Systems", *Computers and Chemical Engineering*, **19**, 1301-1316 (1995).
121. Grossmann, I.E. and M.M. Daichendt, "New Trends in Optimization-based Methods for Process Synthesis", *Computers and Chemical Engineering*, **20**, 665-683 (1996).
122. Quesada, I. and I.E. Grossmann, "Alternative Bounding Approximations for the Global Optimization of Various Engineering Design Optimization problems," in *Global Optimization in Engineering Design* (ed. I.E. Grossmann), pp.309-331, Kluwer (1996).
123. Clay, R.L. and I.E. Grossmann, "A Disaggregation Algorithm for the Optimization of Stochastic Production Planning Models," *Computers and Chemical Engineering* **21**, 751-774 (1997).
124. Floudas, C.A. and I.E. Grossmann, "Algorithmic Approaches to Process Synthesis: Logic and Global Optimization", Proceedings of International Meeting on Foundations of Computer Aided Process Design (eds. Doherty and Biegler), 198-221 (1995).
125. Cagan, J., I.E. Grossmann and J.N. Hooker, "A Conceptual Framework for Combining Artificial Intelligence and Optimization in Engineering Design", *Research in Engineering Design* , **9**, 20-34 (1997). .
126. Turkay, M. and I.E. Grossmann, "Logic-Based MINLP Algorithms For the Optimal Synthesis of Process Networks," *Computers and Chemical Engineering* , **20**, 959-978 (1996).
127. Pinto, J. and I.E. Grossmann, "A Continuous Time MILP Model for Short Term Scheduling of Multistage Batch Plants", *I&EC Research* , **34**, 3037-3051 (1995).
128. Grossmann, I.E. and Z. Kravanja, "Mixed-Integer Nonlinear Programming Techniques for Process Systems Engineering", *Computers and Chemical Engineering*, **19**, S189-S204 (1995).
129. Hoch, P.M., A. M. Eliceche and I.E. Grossmann, "Evaluation and Design Flexibility in Distillation Columns using Rigorous Models", *Computers and Chemical Engineering*, **19**, S189-S204 (1995).

130. Turkay, M. and I.E. Grossmann, "Logic-Based Outer-Approximation and Benders Decomposition Algorithms for the Synthesis of Process Networks", *State of the Art in Global Optimization: Computational Methods and Applications* (eds. C.A. Floudas and P.M. Pardalos), pp.585-607 Kluwer, (1996).
131. Pinto, J. and I.E. Grossmann, "An Alternate MILP Model for Short Term Batch Scheduling with Pre-ordering Constraints", *Ind. Eng. Chem. Research*, **35**, 338-342 (1996).
132. Iyer, R. and I.E. Grossmann, "Global Optimization of Heat Exchanger Network with Fixed Configuration for Multiperiod Design", in *Global Optimization in Engineering Design* (ed. I.E. Grossmann), pp.289-308, Kluwer (1996).
133. Kravanja, Z. and I.E. Grossmann, "A Computational Approach for the Modelling/Decomposition Strategy in the MINLP Optimization of Process Flowsheets with Implicit Models", *Ind. Eng. Chem. Research*, **35**, 2065-2070 (1996).
134. Daichendt, M.M. and I.E. Grossmann, "Integration of Hierarchical Decomposition and Mathematical Programming for the Synthesis of Process Flowsheets," *Computers and Chemical Engineering* , **22**, 147-175 (1998).
135. Pinto, J. and I.E. Grossmann, "Assignment and Sequencing Models for the Scheduling of Chemical Processes", *Annals of Operations Research* **81** 433-466.(1998).
136. Lee, H., J.M. Pinto, I.E. Grossmann and S. Park, "MILP Model for Refinery Short Term Scheduling of Crude Oil Unloading with Inventory Management", *I&EC Research*, **35**, 1630-1641 (1996).
137. Iyer, R. and I.E. Grossmann, "Optimal Multiperiod Planning of Utility Systems", *Computers and Chemical Engineering* , **21**, 787-800 (1997).
138. Pinto, J.M. and I.E. Grossmann, "A Logic Based Approach to Scheduling Problems with Resource Constraints", *Computers and Chemical Engineering* , **21**, 801-808 (1997).
139. Schmidt, C.W. and I.E. Grossmann, "A Mixed Integer Programming Model for Stochastic Scheduling in New Product Development", *Computers and Chemical Engineering*, **20**, S1239-S1244 (1996).
140. Grossmann, I.E. and M. Turkay, "Solution of Algebraic Systems of Disjunctive Equations", *Computers and Chemical Engineering*, **20**, S339-S334 (1996).
141. Novak, Z., Z. Kravanja, and I.E. Grossmann, "Simultaneous Synthesis of Distillation Sequences in Overall Process Schemes using an Improved MINLP Approach," *Computers and Chemical Engineering*, **20**, 1425-1440 (1996).
142. Pinto, J.M. and I.E. Grossmann, I.E., "A Continuous Time MILP Model for Short Term Scheduling of Batch Plants with Pre-Ordering Constraints", *Computers and Chemical Engineering*, **20**, S1197-S1202 (1996).

143. Turkay, M. and I.E. Grossmann, "Disjunctive Optimization Techniques for the Optimization of Process Systems with Discontinuous Investment Costs. Multiple Size Regions", *Ind.Eng.Chem. Res.* **35**, 2611-2623 (1996).
144. Zamora, J. and I.E. Grossmann, "A Global MINLP Optimization Algorithm for the Synthesis of Heat Exchanger Networks with No Stream Splits", *Computers and Chemical Engineering*, **22**, 367-384 (1998).
145. Schmidt, C.W. and I.E. Grossmann, "Optimization Models for the Scheduling of Testing Tasks in New Product Development", *Ind.Eng.Chem. Res.* **35**, 3498-3510 (1996).
146. Cerda, J., G. P. Henning and I.E. Grossmann, "A Mixed-Integer Linear Programming Model for Short Term Batch Scheduling in Parallel Lines", *Ind.Eng.Chem. Res.* **36**, 1695-1707 (1997).
147. Iyer, R. and I.E. Grossmann, "Synthesis and Operational Planning of Utility Systems for Multiperiod Operation", *Computers and Chemical Engineering* **22**, 979-993 (1998).
148. Zamora, J.M and I.E. Grossmann, "A Comprehensive Global Optimization Approach for the Synthesis of Heat Exchanger Networks with NoStream Splits", *Computers and Chemical Engineering* **21**, S65-S70 (1997).
149. Vecchietti, A. and I.E. Grossmann, "LOGMIP: A Discrete Continuous Nonlinear Optimizer", *Computers and Chemical Engineering* **21**, S427-S432 (1997).
150. Turkay, M. and I.E. Grossmann, "Structural Flowsheet Optimization with Complex Investment Cost Functions", *Computers and Chemical Engineering* **22**, 673-686 (1998).
151. Bruno, J.C., F. Fernandez, F. Castells and I.E. Grossmann, "MINLP Model for Optimal Synthesis and Operation of Utility Plants", *Transaction of the Institution of Chemical Engineers* , **76**, pp.246-258 (1998).
152. Kravanja, Z. and I.E. Grossmann, "Multilevel-hierarchical MINLP Synthesis of Process Flowsheets", *Computers and Chemical Engineering* **21**, S421-S426 (1997).
153. Iyer, R. and I.E. Grossmann, "A Bilevel Decomposition Algorithm for Long Range Planning of Process Networks," *Ind.Eng.Chem. Res.* , **37**, 474-481 (1998).
154. Turkay, M. and I.E. Grossmann, "Tight Mixed-Integer Optimization Models for the Solution of Linear and Nonlinear Systems of Disjunctive Equations," *Computers and Chemical Engineering* **22**, 1229-1239 (1998).
155. Pinto, J.M., A. Turkay, B. Bolio and I.E. Grossmann, "STBS: Continuous Time MILP Models for Short Term Scheduling of Batch Plants with Pre-ordering Constraints", *Computers and Chemical Engineering* **22**, 1297-1308 (1998).
156. Zamora, J.M. and I.E. Grossmann, "A Branch and Contract Algorithm for Problems with Concave Univariate, Bilinear and Linear Fractional Terms," *Journal of Global Optimization* **14**, 217-249 (1999).

157. Iyer, R., I.E. Grossmann, S. Vasantharajan and A.S. Cullick, "Optimal Planning and Scheduling of Offshore Oil Field Infrastructure Investment and Operations," *Ind.Eng.Chem. Res.* **37**, pp.1380-1397 (1998).
158. Zamora, J.M. and I.E. Grossmann, "Continuous Global Optimization of Structured Process System Models", *Computers and Chemical Engineering* **22**, 1749-1770 (1998).
159. Schmidt, C.W. and I.E. Grossmann, "Optimization of Industrial Scale Scheduling Problems in New Product Development," *Computers and Chemical Engineering* **22**, pp.S1027-S1030 (1998).
160. Grossmann, I.E., H. Yeomans and Z. Kravanja, "A Rigorous Disjunctive Optimization Model for Simultaneous Flowsheet Optimization and Heat Integration," *Computers and Chemical Engineering* **22**, pp. S157-S164 (1998).
161. Yeomans, H. and I.E. Grossmann, "A Systematic Modeling Framework for Superstructure Optimization in Process Synthesis," *Computers and Chemical Engineering* , **23**, 709-731 (1999).
162. Jain, V. and I.E. Grossmann, "Cyclic Scheduling and Maintenance of Parallel Process Units with Decaying Performance", *AIChE J.*, **44**, pp. 1623-1636 (1998)
163. Schmidt, C.W. and I.E. Grossmann, "The Exact Overall Time Distribution of a Project with Uncertain Task Durations," *Eur. J. of Opns. Res.* **126**, pp.614-636 (2000)
164. Perstinides, A., I.E. Grossmann and G.J. McRae, "Parametric Optimization of MILP Programs and a Framework for the Parametric Optimization of MINLPs", *Computers and Chemical Engineering* **22**, pp.S205-S212 (1998).
165. Galan, B. and I.E. Grossmann, "Optimal Design of Distributed Wastewater Treatment Networks," *Ind.Eng.Chem. Res.* **37**, 4036-4048 (1998)
166. Van den Heever, S.A. and I.E. Grossmann, "Disjunctive Multiperiod Optimization Methods for Design and Planning of Chemical Process Systems," *Computers and Chemical Engineering* **23**, 1075-1095 (1999).
167. Golovashkin, D. and I.E. Grossmann, "Interior Cuts-A New Type of Cutting Planes for Indefinite Quadratic Programming," Internal Report, Carnegie Mellon University (1998).
168. Jain, V. and I.E. Grossmann, "Resource Constrained Scheduling of Tests in New Product Development," *Ind.Eng.Chem. Res.* **38**, 3013-3036 (1999).
169. Yeomans, H. and I.E. Grossmann, "Nonlinear Disjunctive Programming Models for the Synthesis of Heat Integrated Distillation Sequences," *Computers and Chemical Engineering* **23**, 1135-1151 (1999).
170. Caballero, J.A. and I.E. Grossmann, "Aggregated Models for Integrated Distillation Systems," *I&EC Research* , **38**, 2330-2344 (1999).

171. Caballero, J.A. and I.E. Grossmann, "Aggregated Models for Azeotropic Distillation Systems," *Computers and Chemical Engineering* **23**, pp.S85-S88 (1999).
172. Grossmann, I.E., J.A. Caballero and H. Yeomans, "Mathematical Programming Approaches for the Synthesis of Chemical Process Systems," *Korean J. Chem. Eng.*, **16**, 407-426 (1999).
173. Galan, B. and I.E. Grossmann, "Optimization Strategies for the Design and Synthesis of Distributed Wastewater Treatment Networks", *Computers and Chemical Engineering* **23**, pp.S161-S164 (1999).
174. Vecchiotti, A. and I.E. Grossmann, "LOGMIP: A Disjunctive 0-1 Nonlinear Optimizer for Process Systems Models, *Computers and Chemical Engineering* **23**, 555-565 (1999).
175. Grossmann, I.E. and S. Lee, "Generalized Disjunctive Programming: Nonlinear Convex Hull Relaxation and Algorithms", *Computational Optimization and Applications* **26**, 83-100 (2003).
176. Lee, S. and I.E. Grossmann, "New Algorithms for Nonlinear Generalized Disjunctive Programming," *Computers and Chemical Engineering*, **24**, pp.2125-2141 (2000).
177. Vecchiotti, A. and I.E. Grossmann, "Modeling Issues and Implementation of Language for Disjunctive Programming," *Computers and Chemical Engineering* **24**, pp.2143-2155 (2000).
178. Bok, J-K, I.E. Grossmann and S. Park, "Supply Chain Optimization in Continuous Flexible Process Networks", *I&EC Res.* **39**, 1279-1290 (2000).
179. Van den Heever, S.A., and I.E. Grossmann, "An Iterative Aggregation/Disaggregation Approach for the Solution of a Mixed Integer Nonlinear Oilfield Infrastructure Planning Model," *I&EC Res.* **39**, 1955-1971 (2000).
180. Wang, J. and I.E. Grossmann, "Schedule Optimization and Simulation Based on Petri Nets," Internal Report, Carnegie Mellon University (1999).
181. Yeomans, H. and I.E. Grossmann, "Disjunctive Programming Model for the Optimal Design of Distillation Columns and Separation Sequences", *I&EC Res.* **39**, pp. 1637-1648.(2000).
182. Jain, V. and I.E. Grossmann, "Algorithms for Hybrid MILP/CP Models for a Class of Optimization Problems, "INFORMS Journal of Computing, **13**, 258-276 (2001).
183. Grossmann, I.E. and J. Hooker, "Logic Based Approaches for Mixed Integer Programming Models and their Application in Process Synthesis", Proceedings of 5th FOCAPD Conference (eds. M.F. Malone et al.), AICHE Symposium Series, **96** No. 323, 70-83 (2000).
184. Balasubramanian, J. and I.E. Grossmann, "Scheduling to Minimize Expected Completion Time in Flowshop Plants with Uncertain Processing Times," *Computers and Chemical Engineering* **26**, 41-57(2002).

185. Lee, S., C. Phalakornkule, M.D. Domach and I.E. Grossmann, "Recursive MILP Model for finding all the Alternate Optima in LP models for Metabolic Networks," *Computers and Chemical Engineering* **24**, 711-716 (2000).
186. Van den Heever, S.A., I.E. Grossmann, S. Vasantharajan and K. Edwards, "Integrating Complex Economic Objectives with the Design and Planning of Offshore Oilfield Facilities," *Computers and Chemical Engineering* **24**, 1049-1056 (2000).
187. Harjunkoski, I., V. Jain and I.E. Grossmann, "Hybrid Mixed-integer/Constrained Logic Programming Strategies for Solving Scheduling and Combinatorial Optimization Problems," *Computers and Chemical Engineering* **24**, 337-343 (2000).
188. Jain, V. and I.E. Grossmann, "A Disjunctive Model for Scheduling in a Manufacturing and Packing Facility with Intermediate Storage," *Optimization and Engineering*, **1**, pp.215-231 (2000)
189. Perea, E., I.E. Grossmann and E. Ydstie, "Towards the Integration of Dynamics and Control for Supply Chain Management," *Computers and Chemical Engineering* **24**, 1143-1150 (2000).
190. Yeomans, H. and I.E. Grossmann, "Optimal Design of Complex Distillation Columns using Rigorous Tray-by-tray Disjunctive Programming Models, *I&EC Research*, 39, pp. 4326-4335 (2000).
191. Perea, E., I.E. Grossmann, E. Ydstie and T. Tahmassebi, "Dynamic Modeling and Decentralized Control of Supply Chains," *I&EC Res.* **40**, 3369-3383 (2001).
192. Van den Heever, S.A., I.E. Grossmann, S. Vasantharajan and K. Edwards, "A Lagrangean Decomposition Heuristic for the Design and Planning of Offshore Hydrocarbon Field Infrastructures with Complex Economic Objectives," *I&EC Res.* **40**, 2857-2875(2001).
193. Hostrup, M., R. Gani, Z. Kravanja and A. Sorsak and I.E. Grossmann, "Integration of Thermodynamic Insights and MINLP Optimization for the Synthesis of Process Flowsheets," *Computers and Chemical Engineering* **25**, 73-83 (2001).
194. Caballero, J.A. and I.E. Grossmann, "Generalized Disjunctive Programming Model for the Optimal Synthesis of Thermally Linked Distillation Columns," *I&EC Research*, **40**, 2260-2274 (2001).
195. Phalakornkule, C., S. Lee, T. Zhu, R. Koepsel, M.M. Atai, I.E. Grossmann and M.M. Domach, "A MILP-Based Flux Alternative Generation and NMR Experimental Design Strategy for Metabolic Engineering," *Metabolic Engineering*, **3**, 124-137 (2001).
196. Reyes-Labarta, J.A. and I.E. Grossmann, "Disjunctive Programming Models for the Optimal Design of Complex Liquid-Liquid Multistage Extractors," *AIChE J.* **47**, 2243-2252 (2001).

197. Lee, S. and I.E. Grossmann, "A Global Optimization Algorithm for Nonconvex Generalized Disjunctive Programming and Applications to Process Systems," *Computers and Chemical Engineering* **25**, 1675-1697 (2001).
198. Jackson, J. and I.E. Grossmann, "A Disjunctive Programming Approach for the Optimal Design of Reactive Distillation Columns," *Computers and Chemical Engineering* **25**, 1661-1673 (2001).
199. Balasubramanian and I.E. Grossmann, "A Novel Branch and Bound Algorithm for Scheduling Flowshop Plants with Uncertain Processing Times," *Computers and Chemical Engineering* **26**, 41-57 (2002).
200. Harjunkski, I. and I.E. Grossmann, "A Decomposition Approach for the Scheduling of a Steel Plant Production," *Computers and Chemical Engineering* **25**, 1647-1660 (2001).
201. Maravelias, C.T. and I.E. Grossmann, "Simultaneous Planning for New Product Development and Batch Manufacturing Facilities," *I&EC Research* **40**, 6147-6164 (2001).
202. Grossmann, I.E., "Review of Nonlinear Mixed-Integer and Disjunctive Programming Techniques," *Optimization and Engineering*, 3, 227-252 (2002).
203. Harjunkski, I. and I.E. Grossmann, "Hybrid CP/MILP Method for Scheduling of Multistage Batch Plants," *Proceedings ESCAPE-11* (eds. R. Gani and S.B. Jorgensen), pp.877-882 (2001).
204. Caballero, J.A. and I.E. Grossmann, "Generalized Disjunctive Programming Model for the Synthesis of Thermally Linked Distillation Columns," *Proceedings ESCAPE-11* (eds. R. Gani and S.B. Jorgensen), pp.363-368 (2001).
205. Reyes-Labarta, J.A. and I.E. Grossmann, "Optimal Synthesis of Liquid-liquid Multistage Extractors," *Proceedings ESCAPE-11* (eds. R. Gani and S.B. Jorgensen), pp. 487-492 (2001).
206. Jackson, J.R. and I.E. Grossmann, "High Level Optimization Model for the Retrofit Planning of Process Networks," *I&EC Research* **41**, 3762-3770 (2002).
207. Harjunkski, I. and I.E. Grossmann, "Decomposition Techniques for Multistage Scheduling Problems using Mixed-integer and Constraint Programming Methods," *Computers and Chemical Engineering* **26**, 1533-1552 (2002).
208. Balasubramanian, J. and I.E. Grossmann, "Scheduling to Minimize the Expected Completion Time in Flowshops with Uncertain Processing Times," *Proceedings ENPROMER Vol. 1*, pp. 205-210 (2001).
209. Maravelias, C. and I.E. Grossmann, "Simultaneous Planning for New Product Development and Design of Manufacturing Facilities," *Proceedings ENPROMER Vol. 1*, pp. 211-216 (2001).

210. Vecchietti, A., S. Lee and I.E. Grossmann, "Characterization and Formulation of Disjunctions and their Relaxations," *Proceedings ENPROMER* Vol. 1, pp. 409-414 (2001).
211. Grossmann, I.E., S.A. van den Heever and I. Harjunkoski, "Discrete Optimization Methods and their Role in the Integration of Planning and Scheduling," *AIChE Symposium Series No. 326, Vol. 98*, pp.150-168 (2002)
212. Lee, S. and I.E. Grossmann, "Global Optimization of Nonlinear Generalized Disjunctive Programming with Bilinear Equality Constraints: Applications to Process Networks," *Computers and Chemical Engineering* **27**,1557-1575 (2003).
213. Barttfeld, M., P.A. Aguirre and I.E. Grossmann, "Alternative Representations and Formulations for the Economic Optimization of Multicomponent Distillation Columns," *Computers and Chemical Engineering* **27**, 363-383 (2003).
214. Caballero, J. and I.E. Grossmann, "Logic-Based Methods for Generating and Optimizing Thermally Coupled Distillation Columns," *European Symposium on Computer Aided Engineering-12* (eds. J. Grievink and J. van Schijndel), 169-174 , Elsevier, Amsterdam (2002).
215. Vecchietti, A., S. Lee and I.E. Grossmann, "Modeling of Discrete/Continuous Optimization Problems: Characterization and Formulation of Disjunctions and their Relaxations," *Computers and Chemical Engineering* **27**, 433-448 (2003).
216. Maravelias, C.T. and I.E. Grossmann, "Logic Inference and a Decomposition Algorithm for the Resource-Constrained Scheduling of Tasks in Development of New Pharmaceuticals and Agrochemicals," *Handbook on Modeling for Discrete Optimization* (eds. Appa, Pisoulis and Williams), pp.265-289, Springer (2006).
217. Lee, S. and I.E. Grossmann, "Logic-based Modeling and Solution of Nonlinear Discrete/Continuous Optimization Problems," *Annals of Operations Research (Eds. M. Guignard and K. Spielberg): State of the Art and Recent Advances in Integer Programming*, 139, 267-288 (2005).
218. Perea, E., E. Ydstie and I.E. Grossmann, "A Model Predictive Control Strategy for Supply Chain Optimization," *Computers and Chemical Eng.*, **27**, 1201-1218 (2003).
219. Balasubramanian, J. and I.E. Grossmann, "Scheduling Optimization under Uncertainty – An Alternative Approach," *Computers and Chemical Engineering* **27**, 469-490 (2003).
220. Maravelias, C.T. and I.E. Grossmann, "A New MILP Variable Resource Constrained Scheduling Model for the Testing of New Pharmaceuticals and Agrochemicals," *Proceedings FOCAPO2003 (Eds. I.E. Grossmann and C.M. McDonald)*, pp.253-256 (2003).

222. Brusis, D., J. Stichlmair and I.E. Grossmann, "Optimization of a Distillation Column Using External Functions in GAMS," working paper (2002).
223. Van den Heever, S.A. and I.E. Grossmann, "A Strategy for the Integration of Production Planning and Reactive Scheduling in the Optimization of a Hydrogen Supply Network," *Computers and Chemical Engineering*, **27**, 1813-1839 (2003).
224. Van den Heever, S.A. and I.E. Grossmann, "A Mixed-integer Nonlinear Programming Approach to the Optimal Planning of Offshore Oilfield Infrastructures," *Handbook on Modeling for Discrete Optimization* (eds. Appa, Pisoulis and Williams), pp.291-315, Springer (2006).
225. Jackson, J.R., J. Hofmann, J. Wassick and I.E. Grossmann, "A Nonlinear Multiperiod Process Optimization Model for Production Planning in Multi-Plant Facilities," *Proceedings FOCAPO2003* (Eds. I.E. Grossmann and C.M. McDonald), pp.281-284 (2003).
226. Houze, M., N. Juhasz and I.E. Grossmann, "Optimization Model for the Production and Scheduling of Catalyst Loads Changeouts in a Process with Decaying Performance," *Proceedings FOCAPO2003* (Eds. I.E. Grossmann and C.M. McDonald), pp.311-314 (2003).
227. Caballero, J.A. and I.E. Grossmann "Thermodynamically Equivalent Configurations for Thermally Coupled Distillation Columns," *AIChE Journal*, **49**, 2864-2884 (2003).
228. Maravelias, C.T. and I.E. Grossmann, "A New General Continuous-Time State Task Network Formulation for Short Term, Scheduling of Multipurpose Batch Plants," *I&EC Research*, **42**, 3056-3074(2003).
229. Maravelias, C.T. and I.E. Grossmann, "A General Continuous-Time State Task Network Formulation for Short Term, Scheduling of Multipurpose Batch Plants with Due Dates," *Proceedings ESCAPE-13* (Eds. A. Kraslawski and I. Turunen), pp. 215-220. (2003).
230. Lee, S., J.S. Logsdon, M.J. Foral and I.E. Grossmann, "Superstructure Optimization of the Olefin Separation Process," *Proceedings ESCAPE-13* (Eds. A. Kraslawski and I. Turunen), pp. 191-196. (2003).
231. Caballero, J.A.; Reyes-Labarta, J.A.; Grossmann, I.E. "Synthesis of Integrated Distillation Systems," *Proceedings ESCAPE-13* (Eds. A. Kraslawski and I. Turunen), pp. 59-64 (2003).
232. Biegler, L.T. and Ignacio E. Grossmann, "Retrospective on Optimization," *Computers and Chemical Engineering*, **28**, 1169-1192 (2004).

233. Grossmann, I.E. and L.T. Biegler, "Future Perspective on Optimization," *Computers and Chemical Engineering*, **28**, 1193-1218 (2004).
234. Jackson, J. and I. E. Grossmann, "A Temporal Decomposition Scheme for Nonlinear Multisite Production Planning and Distribution Models," *I&EC Research*, **42**, 3045-3055 (2003).
235. Goel, V. and I.E. Grossmann, "A Stochastic Programming Approach to Planning of Offshore Gas Field Developments under Uncertainty in Reserves", *Computers and Chemical Engineering*, **28**, 1409-1429 (2004).
236. Zhu, T., C. Phalakornkule, S. Ghosh, I.E. Grossmann, R.R. Koepsel, M.M Ataa and M.Domach, "A Metabolic Network Analysis & NMR Experiment Design Tool with User Interface-driven Model Construction For Depth-first Search Analysis," *Metabolic Engineering*, **5**, 74-85 (2003).
237. Maravelias, C.T. and I. E. Grossmann, "A Hybrid MILP/CP Decomposition Approach for the Continuous Time Scheduling of Multipurpose Batch Plants," *Computers and Chemical Engineering*, **28**, 1921-1949 (2004).
238. Balasubramanian, J. and I. E. Grossmann, "Approximation to Multistage Stochastic Optimization in Multiperiod Batch Plant Scheduling under Demand Uncertainty," *I&EC Research* **43**, 3695-3713 (2004).
239. Mizutani, F.T., L.P. Pessoa, E. M. Querioz, S. Hauan and I.E. Grossmann, "Mathematical Programming Model for HEN Synthesis Including Detailed Designs. I. Shell and Tube Heat Exchanger Design," *Ind. Eng. Chem. Res.*, **42** (17), 4009 - 4018, 2003
240. Mizutani, F.T., L.P. Pessoa, E. M. Querioz, S. Hauan and I.E. Grossmann, "Mathematical Programming Model for HEN Synthesis Including Detailed Designs. II. Network Synthesis," *Ind. Eng. Chem. Res.*, **42** (17), 4019 -4027, 2003.
241. Barttfeld, M., P.A. Aguirre and I.E. Grossmann, "A Decomposition Method for Synthesizing Complex Column Configurations Using Tray-by-Tray GDP Models," *Computers and Chemical Engineering*, **28**, 2165–2188 (2004).
242. Maravelias, C.T. and I.E. Grossmann, "Minimization of Makespan with Discrete-Time State-Task Network Formulation," *Ind. Eng. Chem. Res*, **42**, 6252-6257 (2003).
243. Sawaya, N.W. and I.E. Grossmann, "A Cutting Plane Method for Solving Linear Generalized Disjunctive Programming Problems," *Computers and Chemical Engineering*, **29**, 1891-1913 (2005).

244. Grossmann, I.E., "Challenges in the New Millennium: Product Discovery and Design, Enterprise and Supply Chain Optimization, Global Life Cycle Assessment," *Computers and Chemical Engineering*, **29**, 29-39 (2005).
245. Caballero, J.A. and I. E. Grossmann, "General Design of Distillation System: From Conventional to Thermally Coupled Distillation Systems," *Computers and Chemical Engineering* **28**, 2307–2329 (2004).
246. Maravelias, C.T. and I. E. Grossmann, "Optimal resource investment and scheduling of tests for new product development," *Computers and Chemical Engineering*, **28** pp. 1021–1038 (2004)
247. Maravelias C.T. and I.E. Grossmann, "Using MILP and CP for the scheduling of batch chemical processes, *Proceedings CPAIOR 2004, Lecture Notes Comp. Sci.*, 3011: pp. 1-20 (2004).
248. Grossmann, I.E., P.A. Aguirre and M. Barttfeld, "Optimal Synthesis of Complex Distillation Columns Using Rigorous Models, Proceedings of European Symposium on Computer-Aided Process Engineering-14 (Eds. A. Barbosa-Povoa and H. Matos), pp. 53-74, Elsevier (2004). Also in: *Computers and Chemical Engineering*, 29 pp. 1203-1215 (2005).
249. Goel, V. and I.E. Grossmann, "A Class of Stochastic Programs with Decision Dependent Uncertainty," *Mathematical Programming*, Ser. B 108, 355–394 (2006).
250. Bergamini, M.L., P. Aguirre and I.E. Grossmann, "Logic Based Outer-Approximation for Global Optimization of Synthesis of Process Networks," *Computers and Chemical Engineering* **29**, 1914-1933 (2005).
251. Agarwal, A. and I.E. Grossmann, "Linear coupled component automata for MILP modeling of hybrid systems," *Computers & Chemical Engineering*, 33, 162-175 (2009).
252. Maravelias, C.T. and I.E. Grossmann, "On the Relation of Continuous and Discrete Time Models for the State-Task Network Formulation," *AIChE J.* **52**, 843-849 (2006).
253. Mendez, C.A., I.E. Grossmann, I. Harjunkoski and P. Kabore, "A Simultaneous Optimization Approach for Off-line Blending and Scheduling of Oil-refinery Operations," *Computers and Chemical Engineering*, **30**, 614-634 (2006).
254. Vecchietti A, and Grossman I.E., "Computational Experience with LogMIP Solving Linear and Nonlinear Disjunctive Programming Problems," Proceedings of the Sixth International Conference on Foundation of Computer Aided Process Design (FOCAPD 2004), p. 587-590 (2004).
255. Goel, V., I. E. Grossmann, A.S. El-Bakry and E.L. Mulkay, "A Novel Branch and Bound Algorithm for Optimal Development of Gas Fields under Uncertainty in Reserves," *Computers and Chemical Engineering*, **30**, 1076-1092 (2006).

256. Bizet, V.M., N. Juhasz and I.E. Grossmann, "Optimization Model for the Production and Scheduling of Catalyst Changeovers in a Process with Decaying Performance," *AIChE Journal*, **51**, 909-921 (2005).
257. Ghosh, S., T. Zhu, I.E. Grossmann, M.M. Ataai and M.M. Domach, "Closing the loop between feasible flux scenario identification for construct evaluation and resolution of realized fluxes via NMR," *Computers and Chemical Engineering*, **29**, 459-466 (2005).
258. Castro, P.M. and I.E. Grossmann, "An Efficient MILP Model for the Short-Term Scheduling of Single Stage Batch Plants," *Computers and Chemical Engineering*, **30**, 1003-1018 (2006).
259. Karuppiah, R. and I.E. Grossmann, "Global Optimization for the Synthesis of Integrated Water Systems in Chemical Processes," *Computers and Chemical Engineering*, **30**, 650-673 (2006).
260. Goel, V. and I. E. Grossmann, "A Lagrangean Duality based Branch and Bound for Solving Linear Stochastic Programs with Decision Dependent Uncertainty," Proceedings ESCAPE-15, pp.55-60, Barcelona, Spain (2005).
261. San Román, M.F., E. Bringas, I. Ortiz and I. E. Grossmann, "Optimal Synthesis of an Emulsion Pertraction Process for the Removal of Pollutant Anions in Industrial Wastewater Systems," Proceedings ESCAPE-15, pp.649-654, Barcelona, Spain (2005). *Computers & Chemical Engineering*, **31**, pp.456-465 (2007).
262. Caballero, J.A., D.Milán-Yañez and I.E. Grossmann, "Optimal Synthesis of Distillation Columns: Integration of Process Simulators in a Disjunctive Programming Environment," Proceedings ESCAPE-15, pp.715-720, Barcelona, Spain (2005).
263. Mendez, C.A., J. Myers, S. Roberts, J. Logsdon, A. Vaia and I. E. Grossmann, "MINLP model for synthesis of Paraxylene Separation Processes based on Crystallization Technology," Proceedings ESCAPE-15, pp. 829-834, Barcelona, Spain (2005).
264. Erdirik Dogan, M. and I. E. Grossmann, "Simultaneous Planning and Scheduling for Multiproduct Continuous Plants", *Ind. Eng. Chem. Res.*, **45**. 299-315 (2006).
265. Mendez, C.A., J. Cerdá, I. E. Grossmann, I. Harjunkoski, and M. Fahl, "State-Of-The-Art Review of Optimization Methods for Short-Term Scheduling of Batch Processes," *Computers & Chemical Engineering* **30**, 913-946 (2006).
266. Sawaya, N.W. and I.E. Grossmann, "Computational Implementation of Non-Linear Convex Hull Reformulation," *Computers & Chemical Engineering*, **31**, 856-866 (2007).
267. Castro, P.M. and I.E. Grossmann, "A New Continuous-time MILP Model for the Short-Term Scheduling of Multi Stage Batch Plants," *Ind. Eng. Chem. Res.*, **44**, 9175-9190 (2005).

268. Caballero, J. A., D. Milan-Yanez and I.E. Grossmann, I. E., “Rigorous Design of Distillation Columns: Integration of Disjunctive Programming and Process Simulators,” *Ind. Eng. Chem. Res.* **44**, 6760-6775 (2005).
269. Flores-Tlacuahuac, A. and I.E. Grossmann, “Simultaneous Cyclic Scheduling and Control of a Multiproduct CSTR,” *Ind. Eng. Chem. Res.* **45**, 6698-6712 (2006).
270. Park, M., S. Park, F.D. Mele and I.E. Grossmann, “Modeling of Purchase and Sales Contracts in Supply Chain Optimization,” *Ind. Eng. Chem. Res.* **45**, 5013-5026 (2006).
271. Karuppiah, R. and I.E. Grossmann, “Global Optimization of Multiscenario Mixed Integer Nonlinear Programming Models Arising in the Synthesis of Integrated Water Networks under Uncertainty,” Proceedings ESCAPE-16/PSE 2006, pp. 1747-1752, Garmisch-Partenkirchen, Germany (2006).
272. Tarhan, B. and I.E. Grossmann, “A Multistage Stochastic Programming Approach with Strategies for Uncertainty Reduction in the Synthesis of Process Networks with Uncertain Yields,” Proceedings ESCAPE-16/PSE 2006, pp. 1937-1942, Garmisch-Partenkirchen, Germany (2006).
273. Bonami, P., L.T. Biegler, A.R. Conn, G. Cornuejols, I.E. Grossmann, C.D. Laird, J. Lee, A. Lodi, F. Margot, N. Sawaya, A. Wächter, “An algorithmic framework for convex mixed integer nonlinear programs,” *Discrete Optimization* **5**, 186-204 (2008).
274. Castro, P., C. Méndez, I.E. Grossmann, I. Harjunkoski and M. Fahl, “Efficient MILP-based solution strategies for large-scale industrial batch scheduling problems,” Proceedings ESCAPE-16/PSE 2006, pp. 2231-2236, Garmisch-Partenkirchen, Germany (2006).
275. Caballero, J.A., A. Odjo and I.E. Grossmann, “Integration of Generalized Disjunctive Programming with Modular Process Simulators,” Proceedings ESCAPE-16/PSE 2006, pp. 125-130, Garmisch-Partenkirchen, Germany (2006).
276. Flores-Tlacuahuac, A. and I.E. Grossmann, “An Effective MIDO Approach Simultaneous Cyclic Scheduling and Control of Polymer Grade Transition Operations,” Proceedings ESCAPE-16/PSE 2006, pp. 1221-1226, Garmisch-Partenkirchen, Germany (2006).
277. Caballero, J.A. and I.E. Grossmann, “Structural considerations and modeling in the synthesis of heat integrated – thermally coupled distillation sequences,” *Ind. Eng. Chem. Res.* **45**, 6698-6712 (2006).
278. Ghosh, S., I.E. Grossmann, M.M. Ataii, and M.M. Domach, “A Three-Level Problem-Centric Strategy for Selecting NMR Precursors and Analytes,” *Metabolic Engineering*, **8**, 491-507 (2006).
279. Castro, P.M., I.E. Grossmann and Augusto Q. Novais, “Two New Continuous-time Models for the Scheduling of Multistage Batch Plants with Sequence Dependent Changeovers,” *Ind. Eng. Chem. Res.* **45**, 6210-6226 (2006).

280. Karuppiah, R. and I.E. Grossmann, "A Lagrangean based Branch-and-Cut algorithm for global optimization of nonconvex Mixed-Integer Nonlinear Programs with decomposable structures," *Journal of Global Optimization* 41, 163 (2008).
281. Bringas, E., R. Karuppiah, M.F. San Román, I. Ortiz, I.E. Grossmann, "Optimal Groundwater Remediation Network Design Using Selective Membranes," *Ind. Eng. Chem. Res.*, **46**, 5555–5569 (2007).
282. Tarhan, B. and I.E. Grossmann, "A Multistage Stochastic Programming Approach with Strategies for Uncertainty Reduction in the Synthesis of Process Networks with Uncertain Yields," (extended version) *Computers and Chemical Engineering* 32, 766-788 (2008).
283. Castro, P.M. and I. E. Grossmann and Augusto Q. Novais. A New Continuous-Time Formulation for the Scheduling of Single Stage Batch Plants with Sequence Dependent Changeovers. Proceedings of CHISA 2006. Editor: Jan Novosad, Process Engineering Publisher, Czech Republic, 905.
284. Bergamini, M.L., I.E. Grossmann, N. Scenna and P. Aguirre, "An Improved Piecewise Outer-Approximation Algorithm for the Global Optimization of MINLP Models Involving Concave and Bilinear Terms," *Computers and Chemical Engineering* **32**, 477–493 (2008).
285. Terrazas-Moreno, S., A. Flores-Tlacuahuac and I.E. Grossmann, "Simultaneous Cyclic Scheduling and Optimal Control of Polymerization Reactors," *AIChE J.*, **53**, 2301-2315 (2007).
286. Caballero, J.A., A. Odjo and I. E. Grossmann, "Flowsheet Optimization with Complex Cost and Size Functions Using Process Simulators," *AIChE J.*, **53**, 2351-2366 (2007)
287. Karuppiah, R. and I.E. Grossmann, "Global Optimization of Multiscenario Mixed Integer Nonlinear Programming Models arising in the Synthesis of Integrated Water Networks under Uncertainty," *Computers and Chemical Engineering*, 32, 145-160 (2008).
288. Caballero, J. and I.E. Grossmann, "Una Revisión el Estado del Arte en Optimización", *Revista Iberoamericana de Automática e Información Industrial*, **4**, 5-23 (2007).
289. Grossmann, I.E. and K. Furman, "Challenges in Enterprise-wide Optimization for the Process Industries," submitted for publication (2007).
290. Erdirik-Dogan, M., I.E. Grossmann, J. Wassick, "A Bi-level Decomposition Scheme for the Integration of Planning and Scheduling in Parallel Multi-Product Batch Reactors," Proceedings ESCAPE-17, pp.625-630 (2007).

291. Caballero, J.A. and I.E. Grossmann, "Logic Based Algorithms for the Rigorous Design of Thermally Coupled Distillation Sequences," Proceedings ESCAPE-17, pp.351-356 (2007).
292. Ortiga, J., J.C. Bruno, A. Coronas and I.E. Grossmann, "Review of Optimization Models for the Design of Polygeneration Systems in District Heating and Cooling Networks," Proceedings ESCAPE-17, pp.1121-1126 (2007).
293. Erdirik-Dogan, M. and I.E. Grossmann, "Planning Models for Parallel Batch Reactors with Sequence-dependent Changeovers," *AIChE J.*, **53**, 2284-2300 (2007)
294. Ponce-Ortega, J.M., A. Jiménez-Gutiérrez and I. E. Grossmann, "Optimal Synthesis of Heat Exchanger Networks Involving Isothermal Process Streams," *Computers & Chemical Engineering*, **32**, 1918-1942 (2008)
295. Erdirik-Dogan, M. and I.E. Grossmann, "Simultaneous Planning and Scheduling of Single-Stage Multiproduct Continuous Plants with Parallel Lines," *Computers and Chemical Engineering* **32**, 2664-2683 (2008).
296. Erdirik-Dogan, M. and I.E. Grossmann, "A slot-based formulation for the short-term scheduling of multi-stage, multi-product batch plants with resource constraints and sequence-dependent changeovers," *I&EC Research* **47**, 1159 (2008).
297. Karuppiah, R. K.C. Furman and I.E. Grossmann, "Global Optimization for Scheduling Refinery Crude Oil Operations," *Computers & Chemical Engineering* **32**, 2745–2766 (2008).
298. Karuppiah, R. A. Peschel, M. Martín, I.E. Grossmann , W. Martinson and L. Zullo "Energy Optimization for the Design of Corn-based Ethanol Plants," *AIChE J.*, **54**, 1499-1525 (2008).
299. You, F. and I.E. Grossmann, "Design of Responsive Process Supply Chains under Demand Uncertainty," *Computers & Chemical Engineering*, **32**, 3090-3111 (2008).
300. Terrazas-Moreno, S., A. Flores-Tlacuahuac, I.E. Grossmann, "Lagrangean heuristic for the scheduling and control of polymerization reactors," *AIChE J.*, **54**, 63-182 (2008).
301. Castro, P.M., M. Erdirik-Dogan and I.E. Grossmann, "Simultaneous batching and scheduling of single stage batch plants with parallel units," *AIChE J.*, **54**, 183-193 (2008).
302. Erdirik-Dogan, M., I.E. Grossmann and J. Wassick, "Short-Term Scheduling of Batch Plants with Parallel Reactors Forming Mobile Work Groups," *I&EC Research* **47**, 6070–6080 (2008).

303. Terrazas-Moreno, S., A. Flores-Tlacuahuac and I.E. Grossmann, "Simultaneous Design, Scheduling, and Optimal Control of a Methyl-Methacrylate Continuous Polymerization Reactor," *AIChE J.*, **54** 3160–3170 (2008).
304. Caballero, J.A. and I.E. Grossmann, "An Algorithm for the Use of Surrogate Models in Modular Flowsheet Optimization," *AIChE J.*, **54**, 2633 - 2650 (2008).
305. You, F. and I.E. Grossmann, "Mixed-Integer Nonlinear Programming Models and Algorithms for Large-Scale Supply Chain Design with Stochastic Inventory Management," *I&EC Research* **47**, 7802–7817 (2008).
306. Lima, R.M. and I.E. Grossmann, "Optimal synthesis of p-xylene separation processes based on crystallization technology," *AIChE J.* **55** 354–373 (2009)
307. Ponce-Ortega, J.M., A. Jiménez-Gutiérrez, and I.E. Grossmann "Simultaneous Retrofit and Heat Integration of Chemical Processes," *Industrial Engineering Chemistry Research*, **47**, 5512-5528 (2008).
308. Grossmann, I.E., M. Erdirik-Dogan and R. Karuppiah, "Overview of Planning and Scheduling for Enterprise-wide Optimization for Process Industries," *Automatisierungstechnik*, **56**, 64-79 (2008).
309. Guillen-Gosalbez, G. and I.E. Grossmann, "Optimal design and planning of sustainable chemical supply chains under uncertainty," *AIChE J.*, **55**, 99-121 (2009).
310. Guillen-Gosalbez, G. and I.E. Grossmann, "A global optimization strategy for the environmentally conscious design of chemical supply chains under uncertainty in the damage assessment model," *Computers & Chemical Engineering*, **34**, 42–58 (2010).
311. Tarhan, B. and I.E. Grossmann, "Decomposition Method for Solving MINLP Model for Oilfield Exploration and Production Operations Under Uncertainty," *Proceedings FOCAPO 2008* (eds. Bassett, Ierapertitou, Pistikopoulos), 367-370 (2008).
312. Castro, P.M., I.E. Grossmann and A.Q. Novais, "Batching and Scheduling Of Single Stage Batch Plants For Different Production Flexibility Scenarios," *Proceedings FOCAPO 2008* (eds. Bassett, Ierapertitou, Pistikopoulos), 371-374 (2008).
313. Terrazas-Moreno, S., A. Flores-Tlacuahuac and I.E. Grossmann, "Simultaneous Design, Scheduling, and Optimal Control of a Polymerization Reactor," *Proceedings FOCAPO 2008* (eds. Bassett, Ierapertitou, Pistikopoulos), 379-382 (2008).

314. Rocha, R., I.E. Grossmann and Marcus V. S. Poggi de Aragão, "Petroleum Allocation at Petrobras: Mathematical Model and a Solution Algorithm," Proceedings FOCAPO 2008 (eds. Bassett, Ierapertitou, Pistikopoulos), 405-408 (2008).
315. Mouret, S., I.E. Grossmann and P. Pectiaux, "A Deterministic Finite Automaton Approach Generating Symmetry-Breaking Constraints for Crude-Oil Scheduling Problems," Proceedings FOCAPO 2008 (eds. Bassett, Ierapertitou, Pistikopoulos), 421-424 (2008).
316. Flores-Tlacuahuac, A. and I.E. Grossmann, "Simultaneous Scheduling And Control of Multiproduct Continuous Parallel Lines," Proceedings FOCAPO 2008 (eds. Bassett, Ierapertitou, Pistikopoulos), 437-440 (2008).
317. Alattas, A., I.E. Grossmann and I. Palou-Rivera, "Optimal Model-Based Production Planning for Refinery Operations," Proceedings FOCAPO 2008 (eds. Bassett, Ierapertitou, Pistikopoulos), 447-450 (2008).
318. You, F., J.M. Wassick and I.E. Grossmann, "Global Supply Chain Planning Under Demand and Freight Rate Uncertainty," Proceedings FOCAPO 2008 (eds. Bassett, Ierapertitou, Pistikopoulos), 447-450 (2008).
319. You, F., J.M. Wassick and I.E. Grossmann, "Risk Management for a Global Supply Chain Planning under Uncertainty: Models and Algorithms," *AIChE J.* **55**, 931-946 (2009).
320. Tarhan, B., V. Goel and I.E. Grossmann, "A Multistage Stochastic Programming Approach for the Planning of Offshore Oil or Gas Field Infrastructure under Decision Dependent Uncertainty," *Ind. Eng. Chem. Research* **48**, 3078-3097 (2009).
321. Chavez-Islas, L.M., , C.L. Heard, and I.E. Grossmann, "Synthesis and Optimization of an Ammonia-Water Absorption Refrigeration Cycle Considering Different Types of Heat Exchangers by Application of Mixed-Integer Nonlinear Programming," *Ind. Eng. Chem. Research* **48**, 2972-2990 (2009).
322. You, F. and I.E. Grossmann, "Integrated Multi-Echelon Supply Chain Design with Inventories under Uncertainty: MINLP Models, Computational Strategies," *AIChE J.*, **56**, 419-440 (2010).
323. Sawaya, N. and I.E. Grossmann, "A hierarchy of relaxations for linear generalized disjunctive programming," *European Journal of Operational Research* **216** 70-82 (2012).

324. de Prada, C., I. E. Grossmann, D. Sarabia and S. Cristea, "A strategy for predictive control of a mixed continuous batch process," *Journal of Process Control* **19**, 123–137 (2009).
325. You, F., P.M. Castro and I.E. Grossmann, "Dinkelbach's Algorithm as an Efficient Method for Solving a Class of MINLP Models for Large-Scale Cyclic Scheduling Problems," *Computers and Chemical Engineering*, **33**, 1879-1889 (2009).
326. Guillen-Gosalbez, G., F.D. Mele and I.E. Grossmann, "A Bi-criterion Optimization Approach for the Design and Planning of Hydrogen Supply Chains for Vehicle Use," *AIChE J.*, **56**, 650-667 (2010).
327. Mouret, S., I.E. Grossmann and P. Pestaiaux, "A Novel Priority-Slot Based Continuous-Time Formulation for Crude-Oil Scheduling Problems," *Ind.Eng.Chem. Res.* **48**, 8515–8528 (2009).
328. Caballero, J.A., I.E. Grossmann, M. Keyvani and E.S. Lenz, "Design of Hybrid Distillation-Vapor Membrane Separation Systems," *Ind.Eng.Chem. Res.* **48**, 9151–9162 (2009).
329. Castro, P.M., I. Harjunoski and I.E. Grossmann, "New Continuous-Time Scheduling Formulation for Continuous Plants under Variable Electricity Cost," *Ind. Eng. Chem. Res.* **48**, 6701-6714 (2009).
330. Rocha, R., I.E. Grossmann and Marcus V. S. Poggi de Aragão, "Petroleum allocation at PETROBRAS: Mathematical model and a solution algorithm," *Computers and Chemical Engineering* **33**, 2123–2133 (2009).
331. Drummond D., Rodrigues, M.T.M., Grossmann I. and Guirardello R., "A mathematical model for water removal in the press section of a paper manufacture industry," *Chemical Engineering Transactions*, **17**, 1257-1262 (2009).
332. Kamath, R.S., I.E. Grossmann and L.T. Biegler, "Modeling of Multi-Stream Heat Exchangers with Phase Changes for Cryogenic Applications," *Proceedings 10th Int. Symposium on Process Systems Engineering* (eds. R.M.B. Alves, C.A.Oller and E.C. Biscaya), pp.921-926, Elsevier (2009).
333. Grossmann, I.E., "Research Challenges in Planning and Scheduling for Enterprise-wide Optimization for Process Industries," *Proceedings 10th Int. Symposium on Process Systems Engineering* (eds. R.M.B. Alves, C.A.Oller and E.C. Biscaya), pp.15-22, Elsevier (2009).
334. Ruiz, J. and I.E. Grossmann, "Global Optimization of Nonconvex Generalized Disjunctive Programs," *Proceedings 10th Int. Symposium on Process Systems Engineering* (eds. R.M.B. Alves, C.A.Oller and E.C. Biscaya), pp.879-884, Elsevier (2009).

335. Caballero, J.A. and I.E. Grossmann, “Rigorous Design of Complex Liquid-Liquid Multistaged Extractors combining Mathematical Programming and Process Simulators,” *Proceedings 10th Int. Symposium on Process Systems Engineering* (eds. R.M.B. Alves, C.A.Oller and E.C. Biscaya), pp.981-986, Elsevier (2009).
336. Mouret, S., I.E. Grossmann and P. Pestiaux, “Tightening the Linear Relaxation of a Mixed Integer Nonlinear Program Using Constraint Programming,” *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems* (Eds. W. van Hoeve and J.N. Hooker), 208-222, Springer (2009).
337. Ruiz, J.P. and I.E. Grossmann, “Strengthening of Lower Bounds in the Global Optimization of Bilinear and Concave Generalized Disjunctive Programs,” *Computers and Chemical Engineering* **34** 914–930 (2010).
338. Rocha, R., I.E. Grossmann and Marcus V. S. Poggi de Aragão, “Cascading Knapsack Inequalities: reformulation of a crude oil distribution problem” *Annals of Operations Research* **203**, 217-234 (2013).
339. Tarhan, B., I.E. Grossmann and V. Goel, “Computational Strategies for Non-convex Multistage MINLP Models with Decision-Dependent Uncertainty and Gradual Uncertainty Resolution,” *Annals of Operations Research* **203**, 141-166 (2013).
340. Kamath, R.S., I.E. Grossmann and L.T. Biegler, “Aggregate Models based on Improved Group Methods for Simulation and Optimization of Distillation Systems,” *Computers & Chemical Engineering* **34**,1312–1319 (2010).
341. Grossmann, I.E. and G. Guillen-Gosalbez, “Scope for the Application of Mathematical Programming Techniques in the Synthesis and Planning of Sustainable Processes,” *Proceedings of FOCAPD-2009* (Eds. M. El-Halwagi and A. Linninger), pp.55-76, Francis Taylor (2009). Extended version published in *Computers and Chemical Engineering* **34**, 1365–1376 (2010).
342. Ahmetović, E. and I.E. Grossmann, “General Superstructure and Global Optimization for the Design of Integrated Process Water Networks,” *AIChE J.* **57**, 434-457 (2011).
343. Karuppiah, R., M. Martin, and I. E. Grossmann, “A Simple Heuristic for Reducing the Number of Scenarios in Two-stage Stochastic Programming,” *Computers & Chemical Engineering* **34** 1246–1255 (2010).
344. Castro, P.M., I. Harjunkoski and I.E. Grossmann, “Greedy Algorithm for Scheduling Batch Plants with Sequence-Dependent Changeovers,” *AIChE J.* **57**, 373-387 (2011).

345. You, F. and I.E. Grossmann, "Balancing Responsiveness and Economics in Process Supply Chain Design with Multi-Echelon Stochastic Inventory," *AIChE J.*, **57**, 178-192 (2011).
346. Castro, P.M., I. Harjunoski and I.E. Grossmann, "Optimal Short-Term Scheduling of Large-Scale Multistage Batch Plants," *Ind. Eng. Chem. Res.*, **48** pp 11002–11016 (2009).
347. Lima, R., I.E. Grossmann and Y. Jiao, "Long-term scheduling of a single-stage multi-product continuous process to manufacture high performance glass," *Computers & Chemical Engineering* **35**, 554-574 (2011).
348. Kamath, R., I. E. Grossmann, L. T. Biegler, "Modeling of Multi-Stream Heat Exchangers with Phase Changes for Cryogenic Applications," in 10th International Symposium on Process Systems Engineering - PSE2009, R. Alves, C. Oller, E. Chalbaud Biscaia (eds.), Elsevier, Amsterdam, pp. 921-927(2009).
349. Frausto-Hernandez, S., V. Rico-Ramirez and I. E. Grossmann, "Strategic Capacity Allocation under Uncertainty by Using a Two-Stage Stochastic Decomposition Algorithm with Incumbent Solutions," *Ind.Eng.Chem.Res.*, **49**, 2812–2821 (2010).
350. Flores-Tlacuahuac, A. and I.E. Grossmann, I.E., "Simultaneous Cyclic Scheduling and Control of Multiproduct Tubular Reactors," *Ind.Eng.Chem. Res.* **49**, 11453–11463 (2010).
351. Terrazas-Moreno, S., I.E. Grossmann and J. Wassick, "Optimal Design of Reliable Integrated Chemical Production Sites," *Computers & Chemical Engineering*, **34** 1919-1936 (2010).
352. Ahmetovic, E., M. Martin and I.E. Grossmann, "Optimization of Energy and Water Consumption in Corn-based Ethanol Plants," *Ind.Eng.Chem. Res.* **49**, 7972–7982 (2010).
353. You, F., I.E., Grossmann and J.M. Wassick, "Multi-Site Capacity, Production and Distribution Planning with Reactor Modifications: MILP Model, Bi-level Decomposition Algorithm vs. Lagrangean Decomposition Scheme," *Ind.Eng.Chem. Res.* **50**, 4831-4849 (2011).
354. Castro, P., I. Harjunoski and I.E. Grossmann, "Rolling-Horizon Algorithm for Scheduling under Time-Dependent Utility Pricing and Availability." *Proceedings of ESCAPE 20*, Vol 28. Editors: S. Pierucci and G. Buzzi Ferraris, Elsevier, 1171 (2010).
355. Castro, P., I. Harjunoski and I.E. Grossmann, "Effective Decomposition Algorithm for Multistage Batch Plant Scheduling. *Proceedings of ESCAPE 20*, Vol 28. Editors: S. Pierucci and G. Buzzi Ferraris, Elsevier, 475 (2010).

356. Caballero, J. and I.E. Grossmann, "Hybrid Simulation-Optimization Algorithms for Distillation Design," *Proceedings of ESCAPE 20*, Vol 28. Editors: S. Pierucci and G. Buzzi Ferraris, Elsevier, 637 (2010).
357. Ahmetovic, E. and I.E. Grossmann, "Strategies for the Global Optimization of Integrated Process Water Networks," *Proceedings of ESCAPE 20*, Vol 28. Editors: S. Pierucci and G. Buzzi Ferraris, Elsevier, 901 (2010).
358. Zondervan, E., I.E. Grossmann and A.D. de Haan, "Energy optimization in the process industries: Unit Commitment at Systems Level," *Proceedings of ESCAPE 20*, Vol 28. Editors: S. Pierucci and G. Buzzi Ferraris, Elsevier, 931 (2010).
359. Martin, M. and I.E. Grossmann, "Superstructure optimization of Lignocellulosic Bioethanol plants," *Proceedings of ESCAPE 20*, Vol 28. Editors: S. Pierucci and G. Buzzi Ferraris, Elsevier, 943 (2010).
360. Terrazas-Moreno, S., P. Trotter and I.E. Grossmann, "A rigorous comparative study of temporal versus spatial Lagrangean decomposition in production planning problems," *Proceedings of ESCAPE 20*, Vol 28. Editors: S. Pierucci and G. Buzzi Ferraris, Elsevier, 1225 (2010).
361. Drummond, D.M.D., M.T.M. Rodrigues, I. E. Grossmann and R. Guirardello, "Optimization Of Water Removal in the Press Section of a Paper Machine," *Brazilian Journal of Chemical Engineering*, **27**, 275-288 (2010).
362. Mouret, S., I.E. Grossmann and P. Pestioux, "'Time Representations and Mathematical Models for Process Scheduling Problems," *Computers & Chemical Engineering* **35**, 1038-1063 (2011).
363. Flores, A. and I.E. Grossmann, "Simultaneous Cyclic Scheduling and Control of Tubular Reactors: Single Production Lines," *Ind.Eng.Chem. Research* **49**, 7909-7921 (2010).
364. Martin, M., E. Ahmetovic and I.E. Grossmann, "Optimization of Water Consumption in Second Generation Bioethanol Plants," *Ind.Eng.Chem. Research* **50**, 3705-3721 (2011).
365. You, F. and I.E. Grossmann, "Stochastic Inventory Management for Tactical Process Planning Under Uncertainties: MINLP Models and Algorithms," *AIChE J.* **57**, 1250-1277 (2011)
366. Castro, P.M., I. Harjunkoski and I.E. Grossmann, "Optimal Scheduling of Continuous Plants with Energy Constraints," *Computers and Chemical Engineering*. **35**, 372-387 (2011).

367. Terrazas-Moreno, S., P. Trotter and I.E. Grossmann, “Temporal and spatial Lagrangean decompositions in multi-site, multi-period production planning problems with sequence-dependent changeovers,” *Computers and Chemical Engineering* **35**, 2913– 2928 (2011).
368. Gupta, V. and I.E. Grossmann, “Solution Strategies for Multistage Stochastic Programming with Endogenous Uncertainties,” *Computers and Chemical Engineering* **35** 2235– 2247 (2011).
369. Ruiz, J.P. and I.E. Grossmann, “Using redundancy to strengthen the relaxation for the global optimization of MINLP problems,” *Computers and Chemical Engineering* **35** 2729– 2740 (2011).
370. Martin, M. and I.E. Grossmann, “Energy Optimization of Bioethanol Production via Gasification of Switchgrass,” *AIChE J.* **57** 3408–3428 (2011).
371. Flores-Tlacuahuac, A. and I.E. Grossmann, I.E., “Simultaneous Cyclic Scheduling and Control of Tubular Reactors: Parallel Production Lines *Ind. Eng. Chem. Res.*, **50**, pp 8086–8096 (2011)
372. Ruiz, J.P. and I.E. Grossmann, “Exploiting Vector Space Properties to Strengthen the Relaxation of Bilinear Programs Arising in the Global Optimization of Process Networks,” *Optimization Letters*, **5**, 1-11 (2011).
373. Nishi, T., Y. Hiranaka and I.E. Grossmann, “A bilevel decomposition algorithm for simultaneous production scheduling and conflict-free routing for automated guided vehicles,” *Computers and Operations Research*, **38**, 876-888 (2011).
374. Mouret, S. , I.E. Grossmann and P. Pestaiaux, “Integration of Refinery Planning and Crude-Oil Scheduling using Lagrangian Decomposition,” *Computers and Chemical Engineering*, **35**, 2750-2766 (2011).
375. Martin, M. and I.E. Grossmann, “Energy optimization of Hydrogen production from biomass,” *Computers and Chemical Engineering*, **35**, 1798– 1806 (2011).
376. Čuček, L., M. Martín, I.E. Grossmann and Z. Kravanja, “Energy, Water and Process Technologies Integration for the Simultaneous Production of Ethanol and Food from the Entire Corn Plant,” *Computers and Chemical Engineering* **35** 1547–1557 (2011).
377. You, F., J.M. Pinto, E. Capón, I.E. Grossmann, N. Arora and L. Megan, “Optimal Distribution-Inventory Planning of Industrial Gases: I. Fast Computational Strategies for Large-Scale Problems,” *Ind. Eng Chem. Res.* **50**, 2910–2927 (2011).

378. You, F., J.M. Pinto, I.E. Grossmann, N. Arora and L. Megan, "Optimal Distribution-Inventory Planning of Industrial Gases: II. MINLP Models and Algorithms for Stochastic Cases," *Ind. Eng Chem. Res.* **50** 2928–2945 (2011).
379. Grossmann, I.E. and M.Martin, "Energy and Water Optimization in Biofuel Plants," *Chinese Journal of Chemical Eng.*, **18**, 914-922 (2010).
380. Flores-Salazar, M.A., R. Vázquez-Román, I.E. Grossmann and G. Iglesias-Silva, "A multiperiod planning model for gas production system," *Journal of Petroleum Science and Engineering*, **77**, 226–235 (2011).
381. Terrazas-Moreno and I. E. Grossmann, "A multiscale decomposition method for the optimal planning and scheduling of multisite continuous multiproduct plants," *Chemical Engineering Science* **66** 4307–4318 (2011).
382. Alattas, A., I.E. Grossmann and I. Palou-Rivera, "Integration of Nonlinear CDU Models in Refinery Planning Optimization," *Ind. Eng Chem. Res.* **50** 6860-6870 (2011).
383. You, F. and I.E. Grossmann, "Multicut Benders Decomposition Algorithm for Process Supply Chain Planning under Uncertainty," *Annals of Operations Research* **210**, 191–211 (2013).
384. Terrazas-Moreno, S., I.E. Grossmann, J.M. Wassick, S.J. Bury and N. Akiya, "An efficient method for optimal design of large-scale integrated chemical production sites with endogenous uncertainty," *Computers & Chemical Engineering* **37**, 89-103 (2012).
385. Lima, R. and I.E. Grossmann, "Computational advances in solving Mixed Integer Linear Programming problems," *Chemical Engineering Greetings to prof. Sauro Pierucci on occasion of his 65th Birthday*, AIDAC, 151-160 (2011).
386. Ruiz, J.P. and I.E. Grossmann, "A hierarchy of relaxations for nonlinear convex generalized disjunctive programming," *European Journal of Operational Research* **218**, 38–47 (2012).
387. Navarro, M.A., J.A. Caballero and I.E. Grossmann, "Strategies for the Robust Simulation of Thermally Coupled Distillation Sequences," Proceedings of ESCAPE-21 (Eds. E.N. Pistikopoulos, M.C. Georgiadis and A.C. Kokossis), 196-200 (2011).
388. Caballero, J.A. and I.E. Grossmann, "Logic-Sequential Approach to the Synthesis of Complex Thermally Coupled Distillation Systems," Proceedings of ESCAPE-21 (Eds. E.N. Pistikopoulos, M.C. Georgiadis and A.C. Kokossis), 211-215 (2011).

389. Marcovecchio, M.G., A. Q. Novais and I.E. Grossmann, "A deterministic optimization approach for the unit commitment problem," Proceedings of ESCAPE-21 (Eds. E.N. Pistikopoulos, M.C. Georgiadis and A.C. Kokossis), 532-536 (2011).
390. van Elzaker, M.A.H., E. Zondervan, C. Almeida-Rivera, I.E. Grossmann and P.M.M. Bongers, "Ice Cream Scheduling: Modeling the Intermediate Storage," Proceedings of ESCAPE-21 (Eds. E.N. Pistikopoulos, M.C. Georgiadis and A.C. Kokossis), 915-919 (2011).
391. Galán, B. and I.E. Grossmann, "Optimal design of real world industrial wastewater treatment networks," Proceedings of ESCAPE-21 (Eds. E.N. Pistikopoulos, M.C. Georgiadis and A.C. Kokossis), 1251-1255 (2011).
392. Martín, M. and I.E. Grossmann, "Optimization of lignocellulosic based diesel," Proceedings of ESCAPE-21 (Eds. E.N. Pistikopoulos, M.C. Georgiadis and A.C. Kokossis), 1698-2002 (2011).
393. Escobar, M., J.O. Trierweiler and I.E. Grossmann, "SynFlex: A Computational Framework for Synthesis of Flexible Heat Exchanger Networks," Proceedings of ESCAPE-21 (Eds. E.N. Pistikopoulos, M.C. Georgiadis and A.C. Kokossis), 1924-128 (2011).
394. Čuček, L., M. Martín, I.E. Grossmann and Z. Kravanja, "Energy, Water and Process Technologies Integration for the Simultaneous Production of Ethanol and Food from the entire Corn Plant," Proceedings of ESCAPE-21 (Eds. E.N. Pistikopoulos, M.C. Georgiadis and A.C. Kokossis), 2004-2008 (2011).
395. Li, L-J., R-J. Zhoua, H-G. Dong, and I.E. Grossmann, "Separation network design with mass and energy separating agents," *Computers & Chemical Engineering*, **35** 2005– 2016 (2011).
396. Martin, M. and I.E. Grossmann, "Energy Optimization of Bioethanol Production via Hydrolysis of Switchgrass," *AIChE J.* **58** (5) 1538-1549 (2012).
397. Martin, M. and I.E. Grossmann, "Process Optimization of FT-Diesel Production from Lignocellulosic Switchgrass," *Ind. Eng. Chem. Res.* **50**, 13485–13499 (2011).
398. Ruiz, J.P. and I.E. Grossmann, "Using Convex Nonlinear Relaxations in the Global Optimization of Nonconvex Generalized Disjunctive Programs," *Computers and Chemical Engineering* **49**, 70– 84 (2013).
399. Mitra, S., I.E. Grossmann, J.M. Pinto and Nikhil Arora , "Optimal Production Planning under Time-sensitive Electricity Prices for Continuous Power-intensive Processes," *Computers and Chemical Engineering* **38**, 171-184 (2012).

400. Terrazas-Moreno, S., I.E. Grossmann and J.M. Wassick, "A Mixed-Integer Linear Programming Model for Optimizing the Scheduling and Assignment of Tank Farm operations," *Ind. Eng. Chem. Res.* **51**, 6441–6454 (2012).
401. Kolodziej, S.P I. E. Grossmann, K.C. Furman and N.W. Sawaya, "A Novel Global Optimization Approach to the Multiperiod Blending Problem," I.A. Karimi and Rajagopalan Srinivasan (Editors), Proceedings of the 11th International Symposium on Process Systems Engineering, 15-19 July 2012, Singapore. (2011).
402. Gupta, V. and I.E. Grossmann, "An Efficient Multiperiod MINLP Model for Optimal Planning of Offshore Oil and Gas Field Infrastructure," *Ind.Eng.Chem. Research*, **51**, 6823–6840 (2012).
403. Gupta, V. and I.E. Grossmann, "Optimal development planning of offshore oil and gas field infrastructure under complex fiscal rules," Proceedings of FOCAPO, Savannah, (Eds. Sahinidis, N.V. and J.M. Pinto), CACHE (2012).
404. Gupta, V., S. Pathak, J.André and I.E. Grossmann, "Assessing the benefits of production-distribution coordination in an industrial gases supply chain," Proceedings of FOCAPO, Savannah, (Eds. Sahinidis, N.V. and J.M. Pinto), CACHE (2012).
405. Mitra, S., I.E. Grossmann, J.M. Pinto and N. Arora, "Robust Scheduling under Time-Sensitive Electricity Prices for Continuous Power-Intensive Processes," Proceedings of FOCAPO, Savannah, (Eds. Sahinidis, N.V. and J.M. Pinto), CACHE (2012).
406. Marcovecchio, M.G., A.Q. Novais, and I.E. Grossmann, "Deterministic Optimization of the Thermal Unit Commitment Problem: a Branch and Cut Search," *Computers & Chemical Engineering* **67**, 53-68 (2014)
407. Gutierrez-Limon, M.A., A. Flores-Tlacuahuac and I.E. Grossmann, "A Multi-Objective Optimization Approach for the Simultaneous Single Line Scheduling and Control of CSTRs," *Ind. Eng. Chem. Res.* **51**, 5881–5890 (2012).
408. Chen, X., D. Chen, S. Huang, Z. Zhang, L. Zheng, I.E. Grossmann and S. Chen, "Hierarchical decomposition heuristic for crude oil scheduling: a SINOPEC case," *Interfaces*, **44**, 269-285 (2014).
409. Chen, X., I.E. Grossmann and L. Zheng,, "A comparative study of continuous-time modeling for scheduling of crude oil operations," *Computers and Chemical Engineering*, **44** 141– 167 (2012).
410. Moro, L.F.L and I.E. Grossmann, "Use of Mixed-Integer Formulations in Predictive Control Algorithms," Proceedings of FOCAPO, Savannah, (Eds. Sahinidis, N.V. and J.M. Pinto), CACHE (2012).

411. Martin, M. and I.E. Grossmann, "On the systematic synthesis of sustainable biorefineries," *Ind.Eng.Chem.Res.* **52**, 3044-3064 (2013).
412. Severson, K., M. Martín and I.E. Grossmann, "Optimal biodiesel production using bioethanol: Towards process integration," *AIChE J.*, **59**, 834-844 (2012).
413. Castro, P.M. and I.E. Grossmann, "From Time Representation in Scheduling to the Solution of Strip Packing Problems," *Computers & Chemical Engineering*, **44**, 45-57 (2012).
414. Castro, P.M. and I.E. Grossmann, "Generalized Disjunctive Programming as a Systematic Modeling Framework to Derive Scheduling Formulations," *Ind. Eng. Chem. Res* **51**, 5781–5792 (2012).
415. Grossmann, I.E., "Advances in Mathematical Programming Models for Enterprise-Wide Optimization," Proceedings of FOCAPO, Savannah, (Eds. Sahinidis, N.V. and J.M. Pinto), CACHE (2012). Extended paper: *Computers & Chemical Engineering*, **47**, 2-18 (2012).
416. Gupta, V., I.E. Grossmann, S. Pathak and J. André, "Assessing the Benefits of Production-Distribution Coordination in an Industrial Gases Supply-Chain," Proceedings of FOCAPO, Savannah, (Eds. Sahinidis, N.V. and J.M. Pinto), CACHE (2012).
417. Gupta, V. and I.E. Grossmann, "Optimal Development Planning of Offshore Oil and Gas Field Infrastructure Under Complex Fiscal Rules," Proceedings of FOCAPO, Savannah, (Eds. Sahinidis, N.V. and J.M. Pinto), CACHE (2012).
418. Mitra, S., I.E. Grossmann, J.M. Pinto and N. Arora "Robust Scheduling Under Time-Sensitive Electricity Prices For Continuous Power-Intensive Processes," Proceedings of FOCAPO, Savannah, (Eds. Sahinidis, N.V. and J.M. Pinto), CACHE (2012).
419. Gutiérrez-Limón, M.A., A. Flores-Tlacuahuac and I.E. Grossmann, "Scheduling and Control Using Multiobjective Optimization Approach," Proceedings of FOCAPO, Savannah, (Eds. Sahinidis, N.V. and J.M. Pinto), CACHE (2012).
420. van Elzakker, M.A.H, E. Zondervan, N.B. Raikar, I.E. Grossmann and P.M.M. Bongers, "Tactical Planning In The Fast Moving Consumer Goods Industry: An SKU Decomposition Algorithm," Proceedings of FOCAPO, Savannah, (Eds. Sahinidis, N.V. and J.M. Pinto), CACHE (2012).
421. van Elzakker, M.A.H., E. Zondervan, N.B. Raikar, I.E. Grossmann, and P.M.M. Bongers, Scheduling in the FMCG Industry: An industrial case study ,” *Industrial and Engineering Chemistry Research*, **51**(22), 7800-7815 (2012).

422. Navarro, M.A., J. Javaloyes, J.A. Caballero, I.E. Grossmann, "Strategies for the robust simulation of thermally coupled distillation sequences," *Computers & Chemical Engineering* **36**, 149–159 (2012).
423. Zou, X., Y. Cui, H-G. Dong, J. Wang and I.E. Grossmann, "Optimal design of complex distillation systems for multicomponent zeotropic separations," *Chemical Engineering Science*, **75**, 133-143 (2012).
424. Zhou, R, L. Li, Lijuan, H-G. Dong and I.E. Grossmann, "Synthesis of Interplant Water-Allocation and Heat-Exchange Networks. Part 1: Fixed Flowrate Processes," to appear in *Ind.Eng.Chem. Res.* (2012).
425. Martin, M. and I.E. Grossmann, "Simultaneous Optimization and Heat Integration for Biodiesel Production from Cooking Oil and Algae," *Ind.Eng.Chem. Res.* **51**, 7998–8014 (2012).
426. Martin, M. and I.E. Grossmann, "Optimal Simultaneous Production of Hydrogen and Liquid Fuels from Glycerol: Integrating the Use of Biodiesel Byproducts," *Ind.Eng.Chem. Research* (2014). **53** (18), 7730–7745
427. Yang, X., H-G. Dong and I.E. Grossmann, "A Framework for Synthesizing the Optimal Separation Process of Azeotropic Mixtures," *AIChE J.*, **58**, 1487-1502 (2012).
428. Alattas, A., I.E. Grossmann and I. Palou Rivera, "A Multiperiod MINLP Model for Refinery Production Planning," *Ind.Eng.Chem. Research* **51**, 12852–12861 (2012).
429. Yang, L. and I.E. Grossmann, "Water Targeting Models for Simultaneous Flowsheet Optimization," *Ind.Eng.Chem. Research* **52**, 3209–3224 (2013).
430. Ruiz, J.P. and I.E. Grossmann, "A New Theoretical Result for Convex Nonlinear Generalized Disjunctive Programs and its Applications," *Proceedings ESCAPE-22* (Eds. I.D. Bogle and M. Fairweather), pp.1197-1201, London (2012).
431. Martin, M. and I.E. Grossmann, "BIOpt: A Library of Models for Optimization of Biofuels Production Processes," *Proceedings ESCAPE-22* (Eds. I.D. Bogle and M. Fairweather), pp.16-20, London (2012).
432. Mitra, S., I.E. Grossmann, J.M. Pinto and N. Arora, "Integration of Strategic and Operational Decisions-making for Continuous Power-intensive Processes," *Proceedings ESCAPE-22* (Eds. I.D. Bogle and M. Fairweather), pp.232-236, London (2012).
433. Caballero, J.A., M.A. Navarro and I.E. Grossmann, "Hybrid Simulation-Optimization Logic Based Algorithms for the Rigorous Design of Chemical

- Processes,” Proceedings ESCAPE-22 (Eds. I.D. Bogle and M. Fairweather), pp.582-586, London (2012).
434. Arzate, E., P. Huitzil, A. Gonzalez, B.E. Martinez and I.E. Grossmann, “Automated Optimization Model to Perform Sensitivity Analysis on Cost of Investment required to Upgrade Treatment Plants in Water Networks,” Proceedings ESCAPE-22 (Eds. I.D. Bogle and M. Fairweather), pp.1063-1067, London (2012).
 435. Martin, M. and I.E. Grossmann, “Optimal engineered algae composition for the integrated simultaneous production of bioethanol and biodiesel,” *AIChE J.* **59** (8), 2872-2883 (2013)
 436. Zhou R-J; L-J. Li, H-G. Dong and I. E. Grossmann Synthesis of Interplant Water-Allocation and Heat-Exchange Networks. Part 2: Integrations between Fixed Flowrate and Fixed Contaminant-load Processes,” submitted for publication (2012).
 437. Kolodziej, S.P., P. Castro and I.E. Grossmann, “Global Optimization of Bilinear Programs with a Multiparametric Disaggregation Technique,” *Journal of Global Optimization* **57**, 1039–1063 (2013).
 438. Mitra, S., L. Sun and I.E. Grossmann, “Optimal Scheduling of Industrial Combined Heat and Power Plant under Time-sensitive Electricity Prices,” *Energy* **54**, 194-211 (2013).
 439. Moro, L.L. and I.E. Grossmann, “A Mixed-Integer Model Predictive Control Formulation for Linear Systems,” *Computers and Chemical Engineering* **55** 1-18 (2013).
 440. Caballero, J.A. and I.E. Grossmann, “Synthesis of Complex Thermally Coupled Distillation Systems Including Divided Wall Columns,” *AIChE J.*, **59**, 1139-1159 (2013).
 441. Nyberg, A., I.E. Grossmann and T. Westerlund, “MILP reformulation of the multi-echelon stochastic inventory system with uncertain demands,” *AIChE J.*, **59**, 23-28 (2013).
 442. Oliveira, F., V. Gupta, S. Hamacher and I.E. Grossmann, “A Lagrangean Decomposition Approach for Oil Supply Chain Investment Planning under Uncertainty with Risk Considerations,” *Computers and Chemical Engineering* **50**, 184-195 (2013).
 443. Oliveira, F., S. Hamacher and I.E. Grossmann, “Accelerating Benders Stochastic Decomposition for the Optimization under Uncertainty of the Petroleum Product Supply Chain,” *Computers & Operations Research* **49**, 47–58 (2014).

444. Calfa, B.A., A. Agarwal, I.E. Grossmann and John M. Wassick, "Hybrid Bilevel-Lagrangian Decomposition Scheme for the Integration of Planning and Scheduling of a Network of Batch Plants," *Ind.Eng.Chem.Res.*, **52**, 2152–2167 (2013).
445. Martin, M. and I.E. Grossmann, "Optimal use of Hybrid feedstock, Switchgrass and Shale gas, for the Simultaneous Production of Hydrogen and Liquid Fuels," submitted for publication *Energy* **55**, 15 378-391 (2013).
446. Kolodziej, S.P., I.E. Grossmann, K.C. Furman and N.W. Sawaya, "A Discretization-Based Approach for the Optimization of the Multiperiod Blend Scheduling Problem," *Computers and Chemical Engineering* **53**, 122-142 (2013).
447. Navarro-Amorós, M.A., J.A. Caballero, R. Ruiz-Femenia and I. E. Grossmann, "An alternative disjunctive optimization model for heat integration with variable temperatures," *Computers and Chemical Engineering*, **56** 12– 26 (2013)
448. Escobar, M., J.O. Trierweiler and I.E. Grossmann, "Simultaneous Synthesis of Heat Exchanger Networks with Operability Considerations: Flexibility and Controllability," *Computers and Chemical Engineering* **55**, 58–180 (2013).
449. Escobar, M., J.O. Trierweiler and I.E. Grossmann, "A Heuristic Lagrangian Approach for the Synthesis of Multiperiod Heat Exchanger Networks," to appear in *Applied Thermal Engineering* **63**, 177 (2014).
450. Grossmann, I.E. and F. Trespacios, "Systematic Modeling of Discrete-Continuous Optimization Models through Generalized Disjunctive Programming," *AIChE J.* **59**, 3276-3295 (2013).
451. Lima, R.M., M.G. Marcovecchio, A. Q. Novais and I.E. Grossmann, "On the computational studies of deterministic global optimization of head dependent short-term hydro scheduling," *IEEE Transactions on Power Systems* **28**, 4336–4347, (2013).
452. Gupta, V. and I.E. Grossmann, "A New Decomposition Algorithm for Multistage Stochastic Programs with Endogenous Uncertainties," *Computers & Chemical Engineering*, **62**, 62-79 (2014).
453. Mitra, S., J.M. Pinto and I.E. Grossmann, "Optimal Multi-scale Capacity Planning for Power-Intensive Continuous Processes under Time-sensitive Electricity Prices and Demand Uncertainty, Part I: Modeling," *Computers & Chemical Engineering* **65**, 89–101 (2014).
454. Mitra, S., J.M. Pinto and I.E. Grossmann, "Optimal Multi-scale Capacity Planning for Power-Intensive Continuous Processes under Time-sensitive Electricity Prices and Demand Uncertainty, Part II: Enhanced Hybrid Bi-level Decomposition," *Computers & Chemical Engineering* **65**, 102-111 (2014).

455. Rodriguez, M.A., A.R. Vechietti, I. Harjunkoski and I.E. Grossmann, "Optimal supply chain design and management over a multi-period horizon under demand uncertainty. Part I: MINLP and MILP models," *Computers & Chemical Engineering* **62**, 194-210 (2014).
456. Yongheng, J., Rodriguez, M.A., I. Harjunkoski and I.E. Grossmann, "Optimal supply chain design and management over a multi-period horizon under demand uncertainty. Part II: A Lagrangean decomposition algorithm," *Computers & Chemical Engineering* **62**, 211-224 (2014).
457. Marchetti, P., I.E. Grossmann, W.A. Bucey and R.A. Majewski, "Multiproduct Feedstock Optimization Model for Polymer Production," Proceedings ESCAPE-23 (eds. A., Kraslawski and Ilkka Turunen), 583-588 (2013).
458. Garcia-Herreros, P., I.E. Grossmann and J.M. Wassick, "Design of Supply Chains under Risk of Facility Disruptions," Proceedings ESCAPE-23, (eds. A., Kraslawski and Ilkka Turunen), 577-582 (2013).
459. van Elzaker, M. A. H., E. Zondervan, N. B. Raikar, H. Hoogland and I.E. Grossmann, "Tactical Planning with Shelf-Life Constraints in the FMCG Industry," Proceedings ESCAPE-23, (eds. A., Kraslawski and Ilkka Turunen), 517-522 (2013).
460. Lidija Cucek, Mariano Martín, Ignacio E. Grossmann and Zdravko Kravanja,, "Multi-period Synthesis of a Biorefinery's Supply Networks," Proceedings ESCAPE-23, (eds. A., Kraslawski and Ilkka Turunen), 73-78 (2013).
461. Martin, M. and I.E. Grossmann, "ASI: Toward the Optimal Integrated Production of Biodiesel with Internal Recycling of Methanol Produced from Glycerol," to appear in *Environmental Progress & Sustainable Energy* **32**, 891-901 (2013).
462. Caballero, J.A. and I.E. Grossmann, "Optimal Synthesis of Thermally Coupled Distillation Sequences Using a Novel MILP Approach," *Computers & Chemical Engineering* **61**, 118-1135 (2014).
463. Trespalacios, F. and I.E. Grossmann, "Algorithmic approach for improved mixed-integer reformulations of convex Generalized Disjunctive Programs," *INFORMS Journal of Computing* **27**, 59-74 (2014).
464. Andersen, F., M.S. Diaz and I.E. Grossmann, "Multiscale Strategic Planning Model for the Design of Integrated Ethanol and Gasoline Supply Chain, *AIChE J.*, **59**, 4655-4672 (2013).

465. Martin, M. and I.E. Grossmann, "Simultaneous optimization and heat integration for the co-production of diesel substitutes: Biodiesel (FAME & FAEE) and glycerol ethers from algae oil," *Ind. Eng. Chem Res.*, **53**, 11371-11383 (2014).
466. Martin, M. and I.E. Grossmann, "Optimal Simultaneous Production of Bio-i-butene and Bioethanol from Switchgrass," *Biomass and Bioenergy*, **61**, 93-103 (2014).
467. van Elzakker, M.A.H., E. Zondervan, N.B. Raikarb, H. Hoogland, and I.E. Grossmann, "An SKU decomposition algorithm for the tactical planning in the FMCG industry," *Computers & Chemical Engineering*, **62**, 80-95 (2014)
468. van Elzakker, M.A.H., E. Zondervan, N.B. Raikarb, H. Hoogland, and I.E. Grossmann, "Optimizing the Tactical Planning in the FMCG Industry Considering Shelf-Life Restrictions," *Computers & Chemical Engineering*, **66**, 98-109 (2014).
469. Cafaro, D.C. and I.E. Grossmann, "Alternate Approximation of Concave Cost Functions for Process Design and Supply Chain Optimization Problems," *Computers & Chemical Engineering* **60**, 376-380 (2013).
470. Grossmann, I.E, B. Calfa and P. Garcia-Herreros, "Evolution of Concepts and Models for Quantifying Resiliency and Flexibility of Chemical Processes," *Computers & Chemical Engineering* **70**, 22-34 (2014).
471. Castro, P.M. and I.E. Grossmann, "Optimality-based Bound Contraction with Multiparametric Disaggregation for the Global Optimization of Mixed-Integer Bilinear Problems," *Journal of Global Optimization* **57**, 1039-1063 (2013).
472. Knudsen, B.R., I.E. Grossmann, B. Foss, and Andrew R Conn, "Lagrangian Relaxation Based Decomposition for Well Scheduling in Shale-gas Systems," *Computers and Chemical Engineering*, **63**, 234-249 (2014).
473. Cafaro, D.C. and I.E. Grossmann, "Strategic Planning, Design and Development of the Shale Gas Supply Chain Network," *AIChE J.* **60**, 2122-2142 (2014).
474. Castro, P.M., I.E. Grossmann, P. Veldhuizen and D. Esplin, "Optimal Maintenance Scheduling of a Gas Engine Power Plant using Generalized Disjunctive Programming," *AIChE J.* **60**, 2083-2097 (2014).
475. Ruiz-Femenia, R., A. Flores and I.E. Grossmann, "Logic-Based Outer-Approximation Algorithm for Solving Discrete-Continuous Dynamic Optimization Problems," *Ind. Eng. Chem. Res.* **53** 5067-5080 (2014).
476. Medina-Herrera, N., A. Jiménez-Gutiérrez and I. E. Grossmann, "A Mathematical Programming Model for Optimal Layout Considering Quantitative Risk Analysis," *Computers and Chemical Engineering*, **68**, 165-181 (2014).

477. Menezes, B.C., J.D. Kelly and I.E. Grossmann, "Improved Swing-Cut Modeling for Planning and Scheduling of Oil-Refinery Distillation Units," *Ind. Eng. Chem. Res.*, **52**, 18324–18333 (2013).
478. Harjunkoski, I., Maravelias, C.T., Bongers, P., Castro, P., Engell, S., Grossmann, I.E., Hooker, J., Mendez, C., Sand, G. and Wassick, J., "Scope for Industrial Applications of Production Scheduling Models and Solution Methods," *Computers and Chemical Engineering*, **62**, 161-193 (2014).
479. Calfa, B.A., A. Agarwal, I.E. Grossmann and John M. Wassick, "Data-Driven Multi-Stage Scenario Tree Generation via Statistical Property and Distribution Matching," *Computers and Chemical Engineering*, **68**, 7–23 (2014).
480. Gupta, V. and I.E. Grossmann, "'Multistage Stochastic Programming Approach for Offshore Oilfield Infrastructure Planning under Production Sharing Agreements and Endogenous Uncertainties," *Journal Petroleum Sci & Eng* **124**, 180-197 (2014).
481. Gutierrez-Limon, M.A., A. Flores-Tlacuahuac and I.E. Grossmann, "A MINLP formulation for the Simultaneous Planning, Scheduling and Control of Short-Period Single Unit Processing Systems," *Ind.Eng.Chem. Research*, **53**, 14679–14694 (2014).
482. Garcia-Herreros, P., J.M. Wassick and I.E. Grossmann, "Design of Resilient Supply Chains with Risk of Facility Disruptions," *Ind.Eng.Chem. Research*, **54**, 17240–17251 (2014).
483. Marchetti, P.A., V. Gupta, I.E. Grossmann , L. Cook, P.M. Valton, T. Singh, T. Li, and J. André, "Simultaneous Production and Distribution of Industrial Gas Supply-Chains," *Computers & Chemical Engineering* **69**, 39-58 (2014).
484. Mitra, S. P. Garcia-Herreros and I.E. Grossmann, "A Cross-decomposition Scheme with Integrated Primal-dual Multi-cuts for Two-stage Stochastic Programming Investment Planning Problems," *Mathematical Programming*, **157**, 95-119 (2016).
485. Yang, L., R. Salcedo-Diaz and I.E. Grossmann, "Water Network Optimization with Wastewater Regeneration Models," *Ind. Eng. Chem. Res.* **53**, 17680–17695 (2014).
486. Yang, L., J. Manno and I.E. Grossmann, "Optimization Models for Shale Gas Water Management," *AIChE J.*, **60**, 3490-3501 (2014).
487. Medina-Herrera, N., I.E. Grossmann, S. Mannan and Arturo Jiménez-Gutiérrez, "An approach for solvent selection in extractive distillation systems including safety considerations," *Ind. Eng. Chem. Res.* **53**, 12023–12031 (2014).

488. Jian, Y. and I. E. Grossmann, “Alternative mixed-integer linear programming models of a maritime inventory routing problem,” *Computers & Chemical Engineering* **77**,147–161 (2015).
489. Trespalacios, F. and I.E. Grossmann, “Review of mixed-integer nonlinear and generalized disjunctive programming methods,” *Chemie Ingenieur Technik* **86**, 991-1012 (2014).
490. Caballero, J.A., R. Ruiz-Femenia and I. E. Grossmann, “Integration of different models in the design of chemical processes: Application to the design of a power plant,” *Applied Energy*, **124** 256-273 (2014).
491. Zhang, Q., I.E. Grossmann, A. Sundaramoorthy and J.M. Pinto, “Data-driven construction of Convex Region Surrogate models,” *Optimization and Engineering* **17**, 289-332 (2016).
492. Martín, M and I.E. Grossmann, “Integrating Glycerol to Methanol vs. Glycerol to Ethanol within the Production of Biodiesel from Algae,” Proceedings ESCAPE-24 (Eds. J.J. Klemes, P.S. Verbanov and P.Y. Liew), pp.85-90, Budapest (2014).
493. Cafaro, D.C. and I.E. Grossmann, “Sustainable Development of the Shale Gas Supply Chain and the Optimal Drilling Strategy for Nonconventional Wells,” Proceedings ESCAPE-24 (Eds. J.J. Klemes, P.S. Verbanov and P.Y. Liew), pp.121-126, Budapest (2014).
494. Mitra, S., P. Garcia-Herreros and I. E. Grossmann , “A Novel Cross-decomposition Multi-cut Scheme for Two-Stage Stochastic Programming,” Proceedings ESCAPE-24 (Eds. J.J. Klemes, P.S. Verbanov and P.Y. Liew), pp.241-246, Budapest (2014).
495. Cucek, L., M. Martín, I.E. Grossmann, Z. Kravanja, “Large-Scale Biorefinery Supply Network – Case Study of the European Union,” Proceedings ESCAPE-24 (Eds. J.J. Klemes, P.S. Verbanov and P.Y. Liew), pp.319-324, Budapest (2014).
496. Ruiz-Femenia, R., J.A. Caballero and I.E. Grossmann, “Logic-Based Outer Approximation for the Design of Discrete-Continuous Dynamic Systems with Implicit Discontinuities,” Proceedings ESCAPE-24 (Eds. J.J. Klemes, P.S. Verbanov and P.Y. Liew), pp.337-342, Budapest (2014).
497. Hadera, H., I. Harjunoski, I.E. Grossmann, G. Sand and S. Engell, “Steel Production Scheduling Optimization under Time-sensitive Electricity Costs,” Proceedings ESCAPE-24 (Eds. J.J. Klemes, P.S. Verbanov and P.Y. Liew), pp.373-378, Budapest (2014). Extended version accepted for publication in *Computers & Chemical Engineering* (2015).
498. Alothman, A.M. and I.E. Grossmann, “A Bi-Criterion Optimization Planning Model for Process Networks with Multiple Scenarios and Environmental Impact,”

- Proceedings ESCAPE-24 (Eds. J.J. Klemes, P.S. Verbanov and P.Y. Liew), pp.403-408, Budapest (2014).
499. Amorim, P., B. Almada-Lobo and A. P.F.D. Barbosa-Póvoa and I.E. Grossmann, “Combining Supplier Selection and Production-Distribution Planning in Food Supply Chains,” Proceedings ESCAPE-24 (Eds. J.J. Klemes, P.S. Verbanov and P.Y. Liew), pp.409-414, Budapest (2014).
500. Grossmann, I.E., “Challenges in the Application of Mathematical Programming in the Enterprise-wide Optimization of Process Industries,” *Theoretical Foundations of Chemical Engineering* 48, № 5, 555-573 (2014).
501. Cucek, L., Martín, M., Grossmann, I.E, Kravanja, Z, “Multiperiod Synthesis of Integrated Biomass and Bioenergy Supply Network,” *Comp Chem Eng.* **66**, 57-70 (2014).
502. De la Cruz, V, Hernández, S, Martín M. Grossmann. I.E., “Integrated synthesis of Biodiesel, Bioethanol, Ibutene and glycerol ethers from algae,” *Ind. Eng. Chem Res.* **53**, 11371–11383 (2014).
503. Martín, M.; Grossmann, I.E., “Design of an optimal process for enhanced production of bioethanol and biodiesel from algae oil via glycerol fermentation,” *Applied. Energy.* **135**, 108-114 (2014).
504. Grossmann, I.E., D. Cafaro and L. Yang, “Optimization Models for Optimal Investment, Drilling and Water Management in Shale Gas Supply Chains,” Proceedings of the 8th International Conference on Foundations of Computer-Aided Process Design – FOCAPD 2014, (M. R. Eden, J. D. Siirola and G. P. Towler, Editors), pp.124-133, July 13-17, 2014, Cle Elum, Washington, USA (Elsevier) (2014).
505. Chen, Y., J. Eslick, I.E. Grossmann and D. Miller, “Simultaneous Optimization and Heat Integration Based on Rigorous Process Simulations,” *Proceedings of the 8th International Conference on Foundations of Computer-Aided Process Design – FOCAPD 2014*, (M. R. Eden, J. D. Siirola and G. P. Towler, Editors), pp.477-482, July 13-17, 2014, Cle Elum, Washington, USA (Elsevier) (2014). Extended version to appear in *Computers & Chemical Engineering* (2015).
506. de la Cruz, V., S. Hernández, M. Martin, and I.E. Grossmann, “Self-sufficient integrated algae based facility for diesel substitutes: FAEE and glycerol ethers,” *Proceedings of the 8th International Conference on Foundations of Computer-Aided Process Design – FOCAPD 2014*, (M. R. Eden, J. D. Siirola and G. P. Towler, Editors), pp.495-500, July 13-17, 2014, Cle Elum, Washington, USA (Elsevier) (2014).

507. Su, L., L. Tang and I.E. Grossmann, "Computational Strategies for Improved MINLP Algorithms," *Computers & Chemical Engineering* **75** 40–48 (2015).
508. Trespalacios, F. and I.E. Grossmann, "Cutting planes algorithm for convex Generalized Disjunctive Programs," *INFORMS Journal on Computing*, **28**, 209-222 (2016).
509. van Elzaker, M.A.H., L. K.K. Maia, E. Zondervan, N.B. Raikar, H. Hoogland, and I.E. Grossmann, "Considering both Environmental Impact and Economic Costs in the Optimization of the Tactical Planning for the Fast Moving Consumer Goods Industry," submitted for publication (2014).
510. Menezes, B.C., J.D. Kelly and I.E. Grossmann, "Distillation Blending and Cutpoint Temperature Optimization Using Monotonic Interpolation," *Ind. Eng. Chem. Res.* **53**, 15146–15156, (2014). (2014).
511. Castro, P.M. and I. E. Grossmann, "Global Optimal Scheduling of Crude Oil Blending Operations with RTN Continuous-time and Multiparametric Disaggregation," *Ind. Eng. Chem. Res.* **53**, 15127-15145, (2014).
512. Calfa, B.A., I.E. Grossmann, A. Agarwal, S.J. Bury and J.M. Wassick, "Data-driven individual and joint chance-constrained optimization via kernel smoothing," *Computers & Chemical Engineering* **78** 51-69 (2015).
513. Menezes, B.C., J.D. Kelly, I.E. Grossmann and A. Vazacopoulos, "Generalized capital investment planning of oil-refineries using MILP and sequence-dependent setups," *Computers & Chemical Engineering* **80** 140-154 (2015).
514. Yin, S., T. Nishi and I.E. Grossmann, "Optimal quantity discount coordination for supply chain optimization with one manufacturer and multiple suppliers under demand uncertainty," *International Journal of Advanced Manufacturing Technology*, **76**, 1173-1184 (2015).
515. Amorim, P., E. Curcio, B. Almada-Lobo, Ana P.F.D. Barbosa-Povoa and I.E. Grossmann, "Supplier Selection for Supply Chains in the Processed Food Industry," *European Journal of Operational Research*, **252**, 801-814 (2016).
516. Chen, Y., I.E. Grossmann and D.C. Miller, "Computational Strategies for Large-Scale MILP Transshipment Models for Heat Exchanger Network Synthesis," *Computers & Chemical Engineering*, **82**, 68–83 (2015).
517. Trespalacios, F. and I.E. Grossmann, "Improved Big-M Reformulation for Generalized Disjunctive programs," *Computers & Chemical Engineering*, **76**, 98–103 (2015).

518. Zhang, Q., C.F. Heuberger, I.E. Grossmann, J.M. Pinto and A. Sundaramoorthy “Air Separation with Cryogenic Energy Storage: Optimal Scheduling Considering Electric Energy and Reserve Market Participation,” *AIChE J.* **61**, 1547-1558. (2015).
519. Hadera, H., I. Harjunoski, G. Sand, I.E. Grossmann and S. Engell, “Optimization of Steel Production Scheduling with Complex Time-Sensitive Electricity Cost,” *Computers & Chemical Engineering*, **76**, 117–136 (2015).
520. Yang, L., I.E. Grossmann, M.S. Mauter and R.M. Dilmore, “Investment Optimization Model for Freshwater Acquisition and Wastewater Handling in Shale Gas Production,” *AIChE J.* **61**, 1770-1782 (2015).
521. Martin, M. and I.E. Grossmann, “Optimal Simultaneous Production of Biodiesel (FAEE) and Bioethanol from Switchgrass,” *Ind. Eng. Chem. Res.*, **54**, 4337–4346 (2015)
522. Comellia, R.N., L. G. Seluya, I.E. Grossmann and M.A. Isla, "The treatment of high-strength wastewater from the sugar-sweetened beverage industry via an alcoholic fermentation process," *Ind. Eng. Chem. Res.* **54**, 7687–7693 (2015).
523. Chen, Y., J.C. Eslick, I.E. Grossmann and D.C. Miller, “Simultaneous Optimization and Heat Integration Framework Based on Rigorous Process Simulations,” *Computers & Chemical Engineering* **81**, 180-199 (2015).
524. Martin, M. and I.E. Grossmann, “Water-energy nexus in biofuels production and renewable based power,” *Sustainable Production and Consumption* **2**, 96-108 (2015).
525. Calfa, B. and I.E. Grossmann, “Optimal Procurement Contract Selection with Price Optimization under Uncertainty for Process Networks,” *Computers & Chemical Engineering* **82**, 330-343 (2015).
526. Ahmetović, E, N. Ibrić, Z. Kravanja and I.E. Grossmann, “Water and Energy Integration: A Comprehensive Literature Review of Non-Isothermal Water Network Synthesis,” *Computers & Chemical Engineering* **82**, 144-171 (2015).
527. Zhang, Q., A. Sundaramoorthy, I.E. Grossmann and J.M. Pinto, “A discrete-time scheduling model for continuous power-intensive process networks with various power contracts,” *Computers & Chemical Engineering*, **84**, 382-393 (2016).
528. Calfa, B., A. Agarwal, S. Bury, J. Wassick and I.E. Grossmann, “Data-Driven Simulation and Optimization Approaches to Incorporate Production Variability in Sales and Operations Planning,” *Industrial & Engineering Chemistry Research* **54**, 7261-7272 (2015).

529. Trespalacios, F. and I.E. Grossmann, "Symmetry breaking for generalized disjunctive programming formulation of the strip packing problem," *Annals of Operations Research*, **258**,747–759 (2017).
530. Lotero, I., F. Trespalacios, I.E. Grossmann, D.J.. Papageorgiou and M-S. Cheon, "An MILP-MINLP decomposition method for the global optimization of a source based model of the multiperiod blending problem," *Computers & Chemical Engineering* **87**, 13-36 (2016).
531. Martin, M. and I.E. Grossmann, "Optimal production of Furfural and DMF from algae and switchgrass," *Industrial & Engineering Chemistry Research Industrial & Engineering Chemistry Research* **55**, 3192-3202 (2016).
532. Grossmann, I.E., R.M. Apap. B.A. Calfa, P. Garcia-Herreros and Q. Zhang, "Recent Advances in Mathematical Programming Techniques for the Optimization of Process Systems under Uncertainty," Proceedings 12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering (Eds. K. V. Gernaey, J.K. Huusom and R. Gani), pp.1-14, Copenhagen, Denmark (2015). Also published in *Computers & Chemical Engineering*, **91**, 3-14 (2016).
533. Lopez-Saucedo, E.S., J.G. Segovia-Hernandez, I.E. Grossmann and S. Hernandez-Castro, "Rigorous modeling, simulation and optimization of a dividing wall batch reactive distillation column: A comparative study," Proceedings 12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering (Eds. K. V. Gernaey, J.K. Huusom and R. Gani), pp.653-658, Copenhagen, Denmark (2015)
534. Caballero, J.A., J.A. Reyes-Labarta and I.E. Grossmann, "A Sequential Algorithm for the Rigorous Design of Thermally Coupled Distillation Sequences," Proceedings 12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering (Eds. K. V. Gernaey, J.K. Huusom and R. Gani), pp.1019-1024, Copenhagen, Denmark (2015)
535. Martin, M. and I.E. Grossmann, "Optimal production of Furfural and DMF from algae and switchgrass," Proceedings 12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering (Eds. K. V. Gernaey, J.K. Huusom and R. Gani), pp.1043-1048, Copenhagen, Denmark (2015)
536. Menezes, B.C., J.D. Kelly and I.E. Grossmann, "Phenomenological Decomposition Heuristic for Process Design Synthesis of Oil-Refinery Units," Proceedings 12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering (Eds. K. V. Gernaey, J.K. Huusom and R. Gani), pp.1877-1092, Copenhagen, Denmark (2015)

537. Garcia-Herreros, P., P. Misra, E. Arslan, S. Mehta and I.E. Grossmann, "A Duality-based Approach for Bilevel Optimization of Capacity Expansion," Proceedings 12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering (Eds. K. V. Gernaey, J.K. Huusom and R. Gani), pp.2021-2026, Copenhagen, Denmark (2015)
538. Zhang, Q., C. F. Heuberger, I.E. Grossmann, A. Sundaramoorthy and J.M. Pinto, "Optimal Scheduling of Air Separation with Cryogenic Energy Storage," Proceedings 12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering (Eds. K. V. Gernaey, J.K. Huusom and R. Gani), pp.2267-2272, Copenhagen, Denmark (2015)
539. Ji, X., S. Huang, and I.E. Grossmann, "Integrated Operational and Financial Hedging for Risk Management in Crude Oil Procurement," *Ind. Eng. Chem. Res.* , **54**, 9191–9201 (2015).
540. Yongheng, J. and I.E. Grossmann, "Alternative mixed-integer linear programming models of a maritime inventory routing problem," *Computers & Chemical Engineering*, **77** 147–161 (2015).
541. Garcia-Herreros, P., P. Misra, E. Arslan, S. Mehta and I.E. Grossmann, "Mixed-integer Bilevel Optimization for Capacity Planning with Rational Markets," *Computers & Chemical Engineering* **86**, 33-47 (2016).
542. Gutierrez-Limon, M.A., A. Flores-Tlacuahuac and I.E. Grossmann, "A Reactive Optimization Strategy for the Simultaneous Planning, Scheduling and Control of Short-Period Continuous Reactors," *Computers and Chemical Engineering* **84**, 507–515 (2016).
543. Ruiz, J.P and I.E. Grossmann, "Global Optimization of Non-convex Generalized Disjunctive Programs: A Review on Relaxations and Solution Methods," *Journal of Global Optimization* **67**, 43–58 (2017).
544. Zhang, Q., J.L. Cremer, I.E. Grossmann, A. Sundaramoorthy and J.M. Pinto "Risk-based integrated production scheduling and electricity procurement for continuous power-intensive processes," *Computers & Chemical Engineering* **86**, 90-105 (2016).
545. Zhang, Q., M.F. Morari, I.E. Grossmann, A. Sundaramoorthy and Jose M. Pinto, "An adjustable robust optimization approach to scheduling of continuous industrial processes providing interruptible load," *Computers & Chemical Engineering* **86**, 106-119 (2016).
546. Trespalacios, F. and I.E. Grossmann, "Cutting planes for improved global logic-based outer-approximation for the synthesis of process networks," *Computers & Chemical Engineering*, **90**, 201–221 (2016).

547. Zamarripa, M., P. A. Marchetti, I.E. Grossmann, T. Singh, B. Besancon and J. André, “Rolling Horizon Approach for Production - Distribution Coordination of Industrial Gases Supply-Chains,” *Industrial & Engineering Chemistry Research*, **55**, 2646–2660 (2016).
548. Corbetta, M., I. E. Grossmann and F. Manenti, “Process simulator-based optimization of biorefinery downstream processes under the Generalized Disjunctive Programming framework,” *Computers and Chemical Engineering* **88**, 73–85 (2016).
549. Trespalacios, F. and I.E. Grossmann, “Lagrangian Relaxation of the Hull-Reformulation of Linear Generalized Disjunctive Programs and its use in Disjunctive Branch and Bound,” *European Journal of Operational Research*, **253**, 314–327 (2016).
550. Drouven, M.G. and I.E. Grossmann, “Multi-Period Planning, Design and Strategic Models for Long-Term, Quality-Sensitive Shale Gas Development,” *AIChE J.*, **62**, 2296-2323 (2016).
551. Martín, M. and I.E. Grossmann, “Enhanced production of methanol from switchgrass: CO₂ to methanol,” Proceedings 26th European Symposium on Computer Aided Process Engineering (Eds. Z. Kravanja and M. Bogataj), pp.43-48, Portoroz (2016).
552. Apap, R.M. and I.E. Grossmann, “Models and Computational Strategies for Multistage Stochastic Programming under Endogenous and Exogenous Uncertainties,” *Computers & Chemical Engineering*, **103**, 233–274 (2017).
553. Gupta, V. and I.E. Grossmann, “Offshore Oilfield Development Planning under Uncertainty and Fiscal Considerations,” *Optimization and Engineering*, **18**, 3-33 (2017).
554. Esche, E., D. Müller, S. Werk, I.E. Grossmann and G. Wozny, “Solution of Chance-Constrained Mixed-Integer Nonlinear Programming Problems,” Proceedings 26th European Symposium on Computer Aided Process Engineering (Eds. Z. Kravanja and M. Bogataj), pp.91-96, Portoroz (2016).
555. Drouven, M.G. and I.E. Grossmann, “Disjunctive Models for Strategic Midstream Delivery Agreements in Shale Gas Development,” Proceedings 26th European Symposium on Computer Aided Process Engineering (Eds. Z. Kravanja and M. Bogataj), pp.931-936, Portoroz (2016).
556. Lara, C.L and I.E. Grossmann, “Global Optimization for a Continuous Location-Allocation Model for Centralized and Distributed Manufacturing,” Proceedings 26th

- European Symposium on Computer Aided Process Engineering (Eds. Z. Kravanja and M. Bogataj), pp.1009-1014, Portoroz (2016).
557. Kandiraju, A., P. Garcia-Herreros, P. Misra, E. Arslan, S. Mehta and I.E. Grossmann, "Capacity Planning with Rational Markets and Demand Uncertainty," Proceedings 26th European Symposium on Computer Aided Process Engineering (Eds. Z. Kravanja and M. Bogataj), pp.2169-2174, Portoroz (2016).
558. Corbetta, M., I.E. Grossmann, F. Manenti, M. Bernardi and A. Frattini, "Systematic Design of the Green Ethylene Glycol Downstream Process under the Generalized Disjunctive Programming Framework," Proceedings 26th European Symposium on Computer Aided Process Engineering (Eds. Z. Kravanja and M. Bogataj), pp.2307-2312, Portoroz (2016).
559. Zondervan, E. and I.E. Grossmann, "Multi-objective optimization of energy networks under demand uncertainty," Proceedings 26th European Symposium on Computer Aided Process Engineering (Eds. Z. Kravanja and M. Bogataj), pp.2319-2324, Portoroz (2016).
560. Garcia-Herreros, P., A. Agarwal, J.M. Wassick and I.E. Grossmann, "Optimizing inventory policies in process networks under uncertainty," *Computers & Chemical Engineering*, **92**, 256–272 (2016).
561. Lopez-Saucedo, E.S., J.G. Segovia-Hernandez, I.E. Grossmann and S. Hernandez-Castro, "Rigorous modeling, simulation and optimization of a dividing wall batch reactive distillation column: A comparative study of dynamic optimization approaches," *Chemical Engineering Research and Design*, **111**, 83-89 (2016).
562. Thierry, D.M., A. Flores-Tlacaahuac, and I.E. Grossmann, "Simultaneous Optimal Design of Multi-Stage Organic Rankine Cycles and Working Fluid Mixtures for Low-Temperature Heat Sources," *Computers & Chemical Engineering*, **89**, 106-126 (2016).
563. Marchetti, P.A., M.A. Zamarripa, J.A. Reyes-Labarta, I.E. Grossmann, W. Bucey, and R.A. Majewski, "Optimal planning and feedstock-mix selection for multiproductpolymer production," *Computers & Chemical Engineering*, **95**, 182-201 (2016).
564. Florensa Campo, C., P. Garcia-Herreros, P. Misra, E. Arslan, S. Mehta and I. E. Grossmann, "Capacity planning with competitive decision-makers: Trilevel MILP formulation and solution approaches," *European Journal of Operational Research*, **262**, 449-463 (2017).
565. Lima, R.M. and I.E. Grossmann, "On the Solution of Nonconvex Cardinality Boolean Quadratic Programming problems," *Computational Optimization and Applications*, **66**, 1-37 (2017).

566. Zhang, Q., R.M. Lima and I.E. Grossmann, "On the Relation between Flexibility Analysis and Robust Optimization for Linear Systems," *AIChE J.* **62** 3109-3123 (2016).
567. Cafaro, D.C., M.G. Drouven and I.E. Grossmann, "Optimization Models for Planning Shale Gas Well Refracture Treatments," *AIChE J.* **62**, 4297-4307 (2016).
568. Pascual-Gonzalez, J., G. Guillen-Gozalbez, L. Jimenez, J.J. Siirola and I.E. Grossmann, "Macro-economic multi-objective input-output model for minimizing CO₂ emissions: Application to the US economy," *AIChE J.* **62**, 3639-3656 (2016).
569. Zhang, Q., A. Sundaramoorthy, I.E. Grossmann and J.M. Pinto, "Multiscale Production Routing in Multicommodity Supply Chains with Complex Production Facilities," *Computers & Operations Research* **79**, 207-222 (2017).
570. Su, L. L. Tang and I.E. Grossmann, "Scheduling of cracking production process with feedstocks and energy constraints," *Computers & Chemical Engineering* **94**, 92-103 (2016).
571. Quirante, N., J.A. Caballero and I.E. Grossmann, "A novel disjunctive model for the simultaneous optimization and heatintegration," *Computers & Chemical Engineering*, **96**, 149-168 (2017).
572. Chen, Q. and I.E. Grossmann, "Recent developments and challenges in optimization-based process synthesis," *Annual Review of Chemical and Biomolecular Engineering*, **8**, 249-283 (2017).
573. Martin, M. and I.E. Grossmann, "Optimal integration of algae – switchgrass facility for the production of methanol and biodiesel," *ACS Sustainable Chemistry & Engineering* **4**, 5651-5658 (2016).
574. Zhang, Q. and I.E. Grossmann, "Enterprise-wide Optimization for industrial demand side management: Fundamentals, advances and perspectives," *Chemical Engineering Research and Design* **116**, 114-131 (2016).
575. Martin, M. and I.E. Grossmann, "Towards zero CO₂ emissions in the production of methanol from switchgrass. CO₂ to methanol," *Computers & Chemical Engineering*, **105**, 308-316 (2017).
576. Diaz-Alvarado, F., J. Miranda-Perez and I.E. Grossmann, "Search for reaction pathways with P-graphs: Methanation of Carbon Dioxide with Hydrogen," *Journal of Mathematical Chemistry*, **56**, 1011–110 (2018).
577. Qian, Z, Q. Chen. and I.E. Grossmann, "Optimal synthesis of rotating packed bed reactor," *Computers & Chemical Engineering*, **105**, 152-160 (2017).

578. Rocha, R., I.E. Grossmann and M. V. S. Poggi de Aragão, “Petroleum supply planning: reformulations and a novel decomposition algorithm,” *Optimization and Engineering*, **18**, 215–240 (2017).
579. Brunaud, B., M.H. Bassett. A. Agarwal, J.M. Wassick and I.E. Grossmann, “Efficient Formulations for Dynamic Warehouse Location under Discrete Transportation Costs,” Proceedings FOCAPO/CPC 2016 (Eds. Maravelias and Wassick), Tucson, Arizona (2017).
580. Ye, Y., I.E. Grossmann and J.M. Pinto, “MINLP models for optimal design of reliable chemical plants,” Proceedings FOCAPO/CPC 2016 (Eds. Maravelias and Wassick), Tucson, Arizona (2017).
581. Martin, M. Grossmann I.E. “Optimal integration of a self-sustained algae based facility with solar and/or wind energy,” to appear in *Journal Clean Production* (2016).
582. Salsano de Assisa, L., E., Camponogara, B. Zimberg, E. Ferreira and I. E. Grossmann, “A piecewise McCormick relaxation-based strategy for scheduling operations in a crude oil terminal, *Computers & Chemical Engineering* **106**, 309–321 (2017).
583. Bernal, D.E., S. Vigerske, F. Trespacios and I.E. Grossmann, “Improving the performance of DICOPT in convex MINLP problems using a feasibility pump,” submitted for publication (2017).
584. Basán, N.P., I.E. Grossmann, A. Gopalakrishnan, I. Lotero, C.A. Méndez, “Optimal scheduling for power-intensive processes under time-sensitive electricity prices,” Proceedings of the 27th European Symposium on Computer Aided Process Engineering – ESCAPE 27 (Eds: Espuna, Graells, Puigjaner), pp. 1423-1428, Barcelona, Spain (2017).
585. Zhang, Q., Martín, M., Grossmann, I.E., “Integrated design, planning, and scheduling of renewables-based fuels and power production networks,” Proceedings of the 27th European Symposium on Computer Aided Process Engineering – ESCAPE 27 (Eds: Espuna, Graells, Puigjaner), pp.1879-1884 (2017).
586. Brunaud, B., M.H. Bassett. A. Agarwal, J.M. Wassick and I.E. Grossmann, “Efficient Formulations for Dynamic Warehouse Location under Discrete Transportation Costs,” *Computers and Chemical Engineering*, **111**, 311-323 (2018).
587. Lara, C.L, F. Trespacios and I. E. Grossmann, “Global Optimization Algorithm for Capacitated Multi-facility Continuous Location-Allocation Problems,” *Journal of Global Optimization* **71**, 871-889 (2018).

588. Drouven, M. and I.E. Grossmann, "Optimization Models for Impaired Water Management in Active Shale Gas Development Areas," *Journal of Petroleum Science and Engineering*, **156**, 983–995 (2017).
589. Martin, M. Grossmann I.E., "Optimal integration of renewable based processes for fuels and power production: Spain case Study," *Applied Energy* **21**, 595-610 (2018).
590. Lu, B, S. Huang and I.E. Grossmann, "Optimal synthesis and operation of wastewater treatment process with dynamic influent," *Industrial & Engineering Chemistry Research* **56**, 8663-8676 (2017).
591. Ye, Y., I.E. Grossmann and J.M. Pinto, "Mixed-integer nonlinear programming models for optimal design of reliable chemical plants," *Computers & Chemical Engineering* **116**, 3-16 (2018).
592. Drouven, M. and I.E. Grossmann, "Mixed-Integer Programming Models for Line Pressure Optimization in Shale Gas Gathering Systems," *Journal of Petroleum Science and Engineering*, **157**, 1021–1032 (2017).
593. Quirante, N., I.E. Grossmann and J.A. Caballero, "Disjunctive Model for the Simultaneous Optimization and Heat Integration with Unclassified Streams and Area Estimation," *Computers & Chemical Engineering*, **108**, 217-231 (2018).
594. Brunaud, B. and I.E. Grossmann, "Perspectives in Multilevel Decision-making in the Process Industry," *Frontiers of Engineering Management* **4**, 256-270 (2017).
595. Drouven, M.G., D.C. Cafaro and I.E. Grossmann, "Stochastic Programming Models for Optimal Shale Well Development and Refracturing Planning under Uncertainty", *AIChE Journal*, **63**, 4799-4813 (2017).
596. Grossmann, I.E., R.M. Apap. B.A. Calfa, P. Garcia-Herreros and Q. Zhang, "Mathematical Programming Techniques for Optimization under Uncertainty and their Application in Process Systems Engineering," *Theoretical Foundations of Chemical Engineering*, **51**, No. 6, pp. 893–909 (2017).
597. Galan-Martin, A., C. Pozo, A. Azapagic, I.E. Grossmann, N. Mac Dowell and G. Guillen-Gosalbez, "Time for global action: an optimised cooperative approach towards effective climate change mitigation," *Energy & Environmental Science*, **11**, 572-581 (2018)
598. Castro, P.M., I.E. Grossmann and Q. Zhang, "Expanding Scope and Computational Challenges in Process Scheduling," *Computers & Chemical Engineering*, **114** (14–42 (2018).

599. Hao J., B. Chen and I.E. Grossmann, “New Algorithm for the Flexibility Index Problem of Quadratic Systems,” *AIChE J.*, **64**, 2486- 2499 (2018).
600. Zhao, S., I.E. Grossmann and L. Tang, “Integrated scheduling of rolling section in steel production with consideration of energy consumption under time-of-use electricity prices,” to appear in *Computers & Chemical Engineering* (2017).
601. Lara, C. L., D. Mallapragada, D., Papageorgiou, A., Venkatesh, and I.E. Grossmann, “Electric Power Infrastructure Planning: Mixed-Integer Programming Model and Nested Decomposition Algorithm,” *European Journal of Operational Research* **271**, 1037–1054 (2018).
602. Cafaro, D.C., M. G. Drouven and I.E. Grossmann, “Continuous-Time Formulations for the Optimal Planning of Multiple Refracture Treatments in a Shale Gas Well,” *AIChE J.*, **64**, 1511-1516 (2018).
603. Basán, N.P., I.E. Grossmann, A. Gopalakrishnan, I. Lotero, C.A. Méndez, “A novel MILP scheduling model for power-intensive processes under time-sensitive electricity prices,” *Industrial & Engineering Chemistry Research*, **57**, 1581-1592 (2018).
604. Su, L. L.Tang D. E. Bernal, I. E. Grossmann, “Improved quadratic cuts for convex mixed-integer nonlinear programs,” *Computers & Chemical Engineering* **109**, 77–95 (2017).
605. Kronqvist, J., D.E. Bernal, I.E. Grossmann, “Using Regularization and Second Order Information in Outer Approximation for Convex MINLP” to appear in *Mathematical Programming* (2018).
606. Li, C. and I.E. Grossmann, “An improved L-shaped method for two-stage convex 0-1 mixed integer nonlinear stochastic programs,” *Computers Chemical Engineering*, **112**, 165-179 (2018).
607. Basan, N., I.E. Grossmann, A. Gopalakrishnan, I. Lotero and I.e. Grossmann., “Novel MILP Scheduling Model for Power-Intensive Processes under Time-Sensitive Electricity Prices,” *Ind. Eng. Chem. Res.* **57**, 1581–1592 (2018).
608. Elsid, C., E. Martelli, and I.E. Grossmann, “A Bilevel Decomposition Method for the Simultaneous Synthesis of Utility Systems, Rankine Cycles and Heat Exchanger Networks,” Proceedings ESCAPE-28, 373-378 (2018).
609. Carrero-Parreño, A., R. Ruiz-Femenia, J. A. Caballero, J.A. Reyes-Labarta, I.E. Grossmann, “Sustainable Optimal Strategic Planning for Shale Water Management,” Proceedings ESCAPE-28, 657-662 (2018).

610. Menezes, B.C., J.D. Kelly, I.E. Grossmann, “Logistics optimization for dispositions of product distillates in oil-refineries: closing the operations scheduling and primary distribution gap,” Proceedings ESCAPE-28, 1135-1140 (2017).
611. Brunaud, B., M. Paz Ochoa, and I. E. Grossmann, “Product Decomposition in Supply Chain Planning,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 1255-1260 (2018).
612. Lopez-Saucedo, E.S., Q. Chen, I.E. Grossmann, and J.A. Caballero, “Kaibel Column: Modeling and Optimization,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 1183-1188 (2018).
613. Bernal, D.E, Q. Chen, F. Gong, and I. E. Grossmann, “Mixed-Integer Nonlinear Decomposition Toolbox for Pyomo (MindtPy)” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering - PSE 2018, 895-900 (2018).
614. Lara, C.L., B. Omell, D. Miller, I.E. Grossmann, “Expanding the Scope of Electric Power Infrastructure Planning,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 1309-1314 (2018).
615. Ye, Y., I.E. Grossmann, J. M. Pinto, S. Ramaswamy “Markov Chain MINLP Model for Reliability Optimization of System Design and Maintenance,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 1483-1488 (2018).
616. Li, C., I.E. Grossmann, “An Improved L-shaped Method for Two-stage Convex 0-1 Mixed Integer Nonlinear Stochastic Programs,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 1501-1506 (2018).
617. Chen, Q., E. Johnson, J.D. Sirola, I.E. Grossmann, “Pyomo.GDP: Disjunctive Models in Python,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 889-894 (2018).
618. Ondeck, A., M. Drouven, N. Blandino, I.E. Grossmann, “Multi-System Development Planning for Optimizing Shale Gas Production,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 1303-1308 (2018).

619. Castro, P.M., I. Harjunkoski, I.E. Grossmann, “Expanding RTN discrete-time scheduling formulations to preemptive tasks,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 1225-1230 (2018).
620. Ochoa, M.P., H. Jiang, Ajit Gopalakrishnan, I.E. Grossmann, “Optimal Production Scheduling of Industrial Gases under Uncertainty with Flexibility Constraints,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 1513-1518 (2018).
621. Su, L., L. Tang, D.E. Bernal, I. E. Grossmann, B. Wang, “Integrated scheduling of on-line blending and distribution of oil products in refinery operation,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 1213-1218 (2018).
622. Ghose, J.H., Q. Chen, M.A. Zamarripa, A. Leea, A. P. Burgard, I.E. Grossmann, David C. Miller, “A comparative study between GDP and NLP formulations for conceptual design of distillation columns,” s M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 865-870 (2018).
623. Lee, A., J.H. Ghose, J.C. Eslick, D.C. Miller, Q. Chen, I.E. Grossmann, J.D. Sirola, “A Flexible Framework and Model Library for Process Simulation, Optimization and Control,” M. R. Eden, M. Ierapetritou and G. P. Towler (Editors) Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018, 937-942 (2018).
624. Carrero, A., J.A. Reyes-Labarta, R. Salcedo, R. Ruiz-Femenia, J.A. Caballero and I.E. Grossmann, “Sustainable Optimal Strategic Planning for Shale Water Management,” submitted for publication (2018).
625. Zhang, Q., Bremen, A. M., Grossmann, I. E., & Pinto, J. M., “Long-Term Electricity Procurement for Large Industrial Consumers under Uncertainty,” *Industrial & Engineering Chemistry Research*, 57, 3333-3347 (2018).
626. Khalilpour, K.R., I.E. Grossmann and A.Vassallo, “Integrated power-to-gas and gas-to-power with air and natural gas storage,” submitted for publication (2018).
627. Song, Y., B.C. Menezes, P. Garcia-Herreros and I.E. Grossmann. “Scheduling and feed quality optimization of concentrate raw materials in the copper refining industry,” *Industrial & Engineering Chemistry Research* **57**, 11686–11701 (2018).
628. Brunaud, B., J.M. Lainez-Aguirre, J.M. Pinto, and I. E. Grossmann, “Inventory Policies and Safety Stock Optimization for Supply Chain Planning,” *AIChE J.* **65**, 99-112 (2019).

629. Li, C. and I.E. Grossmann, “A finite ε -convergence algorithm for two-stage convex 0-1 mixed-integer nonlinear stochastic programs with mixed-integer first and second stage variables,” submitted for publication (2018).
630. Ahmetović, E., N. Ibrića, Z. Kravanja, I.E. Grossmann, F. Maréchal, L. Čuček, M. Kermani, “Simultaneous Optimisation and Heat Integration of Evaporation Systems Including Mechanical Vapour Recompression and Background Process,” *Energy*, **158**, 1160-1191 (2018).
631. Zhang, Q., M. Martin and I.E. Grossmann, “Integrated design and operation of renewables-based fuels and power production networks,” to appear in *Computers & Chemical Engineering*. (2018).
632. Mallapragada, D.S., D. J. Papageorgiou, A. Venkatesh, C.L. Lara and I. E. Grossmann, “Impact of model resolution on scenario outcomes for electricity sector system expansion,” to appear in *Applied Energy* (2018).
633. Yáñez, M., A. Ortiz, B. Brunaud, I. E. Grossmann and I. Ortiz, “Contribution of Upcycling Surplus Hydrogen to Design a Sustainable Supply Chain: The Case Study of Northern Spain,” *Applied Energy* **231**, 777-787 (2108).
634. Kronqvist, J., D.E. Bernal, A. Lundell, and I.E. Grossmann, “A Review and Comparison of Solvers for Convex MINLP,” to appear in *Optimization and Engineering* (2018).
635. Brunaud, B., M. Paz Ochoa, and I. E. Grossmann, “Product Decomposition in Supply Chain Planning,” *Frontiers Engineering Management*, **5**, 466–478 (2018).
636. Castro, P.M., I. Harjunkoski and I.E. Grossmann, “Discrete and continuous-time formulations for dealing with breaks: preemptive and non-preemptive scheduling,” submitted for publication (2018).
637. Ondeck, A., M. Drouven, N. Blandino and I.E. Grossmann, “Multi-Operational Planning of Shale Gas Pad Development,” submitted for publication (2018).
638. Awasthi, U., R. Marmier and I.E. Grossmann, “Multiperiod Optimization Model for Oilfield Production Planning: Bicriterion Optimization and Two-Stage Stochastic Programming Model,” submitted for publication (2018).
639. Ye, Y., I. E. Grossmann, J M. Pinto, S. Ramaswamy, “Modeling for Reliability Optimization of System Design and Maintenance Based on Markov Chain Theory,” submitted for publication (2018).
640. Sitter, S., Q. Chen and I.E. Grossmann, “An Overview of Process Intensification Methods,” to appear in *Current Opinion in Chemical Engineering* (2018).

641. Zhao, S, M. Paz Ochoa, L.Tang, I. Lotero, A. Gopalakrishnan, and I. E. Grossmann “Novel Formulation for Optimal Schedule with Demand Side Management in Multi-product Air Separation Processes,” submitted for publication (2018).
642. Chen, Q. and I.E. Grossmann, “Effective GDP optimization models for modular process synthesis”, submitted for publication (2018).
643. Assisa, L.S., E. Camponogara, B.C. Menezes, I.E.Grossmann, “An MINLP formulation for integrating the operational management of crude oil supply,” submitted for publication (2018).
644. Galan, A., C. De Prada, G. Gutierrez, D. Sarabia, I.E. Grossmann and R. Gonzalez, “Real-time optimization; Hydrogen networks; Process optimization; Two-stage stochastic optimization; CVaR,” submitted for publication (2019).
645. Rawlings, E.S., Q. Chen, J. Caballero and I.E. Grossmann, “Kaibel Column: Modeling, Optimization, and Conceptual Design of Multi-product Dividing Wall Columns,” submitted for publication (2019).
646. Brunaud, B., S. Amaran, S. Bury, J. Wassick, and I. E. Grossmann, “Batch Scheduling with Quality-based Changeovers, submitted for publication (2019).
647. Grossmann, I.E. and I. Harjunoski, “Process Systems Engineering: Academic and Industrial Perspectives,” submitted for publication (2019).
648. Lara, C.L., D. Bernal, C. Li and I.E. Grossmann, “Global Optimization Algorithm for Multi-period Design and Planning of Centralized and Distributed Manufacturing Networks”, submitted for publication (2019).

OTHER PUBLICATIONS, REPORTS

1. Grossmann, I.E., "Systems of Non-linear Equations" (in Spanish), in lecture Notes on Numerical Analysis, Maestria de Ingenieria de Proyectos, Facultad de Quimica, UNAM, Mexico (1980).
2. Grossmann, I.E., "Uncertainty and Flexibility in Chemical Process Design," *CIT Engineering News* **2**, 13 (1982).
3. Reklaitis, G.V. and I.E. Grossmann (Eds), "The Status of Large-Scale Optimization," *Computers and Chemical Engineering* **7**(5) (1983).
4. Morari, M. and I.E. Grossmann (Eds), "Separation System for Recovery of Ethylene and Light Products from a Naphtha Pyrolysis Gas Stream," *CACHE Process Design Case Studies*, Volume 1 (1985).
5. Morari, M. and I.E. Grossmann, (Eds), "Design of Ammonia Synthesis Plant," *CACHE Process Design Case Studies*, Volume 2 (1985).

6. Olsbu, A, P.A. Loeken and I.E. Grossmann, "Optimal Synthesis of Power Systems in Oil Production Platforms," SINTEF Report STF15 A85004, Trondheim, Norway (1985).
7. Westerberg, A.W. and I.E. Grossmann, "Process Synthesis Techniques in the Process Industries and Their Impact on Energy Use," EPRI Report, December 1, 1985.
8. Siirola, J.J., I.E. Grossmann and G. Stephanopoulos (eds.), Proceedings of the FOCAPD '89 Conference, Snowmass, Elsevier (1990).
9. Morari, M. and I.E. Grossmann (Eds.), "Retrofit of a Heat Exchanger Network and Design of a Multiproduct Batch Plant," *CACHE Process Design Case Studies*, Volume 5 (1990).
10. Finlayson, B. A., Biegler, L. T., Grossmann, I. E., Mathematics in Chemical Engineering, Ullmann's Encyclopedia of Industrial Chemistry, Electronic Release, Vol. B1, Wiley-VCH, Weinheim (2006).
11. Morari, M. and I.E. Grossmann (Eds.), "Chemical Engineering Optimization Models with GAMS," *CACHE Process Design Case Studies* Volume 6 (1991).
12. Grossmann, I.E., "Chemical Engineering Optimization Models with GAMS," *CACHE News*, **34**, 1-9 (1992).
13. Grossmann, I.E., "Book Review of A Collection of Test Problems for Constrained Global Optimization Algorithms," *Journal of Global Optimization*, **2**, 421-422 (1992).
14. Grossmann, I.E., "Computational Methods," chapter in EDRC textbook "Engineering Design," to appear (1995).
15. Grossmann, I.E., "Optimization," chapter 12 in "Past, Present and Future of Computing in Chemical Engineering Education", to appear (1995).
16. Grossmann, I.E. and M. Morari, "Design Case Studies", chapter 13 in "Past, Present and Future of Computing in Chemical Engineering Education", to appear (1995).
17. Grossmann, I.E., "On the Scope and Future of Mathematical Programming in Chemical Process Systems", CAST Newsletter, 18(1), 10-15 (1995).
18. Grossmann, I.E. and L.T. Biegler, "Optimizing Chemical Processes", CHEMTECH, Dec., 27-35 (1995)
19. Grossmann, I.E. (ed.), "Global Optimization in Engineering Design", Kluwer, Dordrecht (1996).
20. Grossmann, I.E., "Mixed-Integer Optimization Techniques for Algorithmic Process Synthesis", Advances in Chemical Engineering, Vol. 23, Process Synthesis, pp.171-246 (1996).
21. Biegler, L.T., I.E. Grossmann and A.W. Westerberg, "Systematic Methods for Chemical Process Design", Prentice-Hall (1997).

22. Grossmann, I.E. and Z. Kravanja, "Mixed-integer Nonlinear Programming: A Survey of Algorithms and Applications", The IMA Volumes in Mathematics and its Applications, Vol.93, Large-Scale Optimization with Applications. Part II: Optimal Design and Control (eds, Biegler, Coleman, Conn, Santosa) pp.73-100, Springer Verlag (1997).
23. Grossmann, I.E. and J.M. Ottino, "Is graduate education meeting industry's needs?", CHEMTECH, 28, August, 7-11 (1998).
24. Biegler, L.T., I.E. Grossmann and G. Stephanopoulos, "Art Westerberg at Carnegie Mellon University," *Chemical Engineering Education*, Spring, pp.90-95 (1999).
25. Grossmann, I.E., "Some Pitfalls with Citation Statistics," *Chemical Engineering Education*, 34, Winter, pp.62-65 (2000).
26. Grossmann, I.E., "Mixed-Integer Nonlinear Programming Techniques for Process Systems Engineering," Paper produced for membership in Mexican Academy of Engineering (1999).
27. Grossmann, I.E. and A.W. Westerberg, "Research Challenges in Process Systems Engineering," *AIChE J.* **46**, pp.1700-1703 (2000).
28. Cerda, J. and I.E. Grossmann (Eds.), "Special Issue on Panamerican Collaboration for Computers and Chemical Engineering," *Computers and Chemical Engineering* **24** (9-10) 2000.
29. Grossmann, I.E., "MINLP: Outer Approximation Algorithm," *Encyclopedia of Optimization* (eds. C.A. Floudas and P.M. Pardalos), Vol. III, pp.361-363, Dordrecht, Kluwer Academic (2001)
30. Grossmann, I.E., "MINLP: Logic-Based Methods," *Encyclopedia of Optimization* (eds. C.A. Floudas and P.M. Pardalos), Vol. II, pp.369-373, Dordrecht, Kluwer Academic (2001)
31. Zamora, J.M. and I.E. Grossmann, "Global Optimization of Heat Exchanger Networks," *Encyclopedia of Optimization* (eds. C.A. Floudas and P.M. Pardalos), Vol. II, pp.340-345, Dordrecht, Kluwer Academic (2001)
32. Grossmann, I.E., M.S. Jhon and R. D. Tilton, "Education Plan of Chemical Engineering at Carnegie Mellon," XIX Jornadas de Ingenieria Quimica (eds. Ortiz de Uribe et al.), pp.93-99, Universidad de Cantabria (2001).
33. Grossmann, I.E. and N.V. Sahinidis (eds.), Special Issue on Mixed-Integer Programming and its Applications to Engineering, *Optimization and Engineering*, **3** (3), (2002).
34. Grossmann, I.E. and C.M. McDonald (eds.), Proceedings of 4th International Conference on Foundations of Computer-Aided Process Operations, CAChE, (2003).
35. Breslow, R., M.V. Tirrell, J.K. Barton, M.A. Barteau, C.R. Bertozzi, R.A. Brown, A.P. Gast, I.E. Grossmann, J.M. Meyer, R.W. Murray, P.J. Reider, W.R. Roush,

- M.L. Shuler, J.J. Siirola, G.M. Whitesides, P.G. Wolnyes and R.N. Zare, "Beyond the Molecular Frontier: Challenges for Chemistry and Chemical Engineering," National Research Academies Press, Washington (2003).
36. Grossmann, I.E. and C.M. McDonald (eds.), Special Issue on Foundations of Computer-Aided Process Operations, *Computers and Chemical Engineering*, **28**, 853-1166 (2004).
 37. Grossmann, I.E., "Advances in Logic-Based Optimization Approaches to Process Integration and Supply Chain Management," Chapter 11 in *Chemical Engineering: Trends and Developments* (eds. M.A. Galan and E. Del Valle), pp. 299-322, Wiley, West Sussex (2005).
 38. Grossmann, I.E. "Enterprise-wide Optimization: A New Frontier in Process Systems Engineering," *AIChE Journal*, 51, 1846-1857 (2005).
 39. Mendez, C.A., I.E. Grossmann, I. Harjunkoski and M. Fahl, "MILP Optimization Models for Short-Term Scheduling of Batch Processes," *Logistics of Chemical Production Processes* (Ed. S. Engell) Wiley-VCH, Weinheim (2008).
 40. Grossmann, I.E., J. Cerda and J.M. Pinto, "Aid for Graduate Courses in Process Systems Engineering: Virtual Library from PASI Conference," *CACHE News*, Fall (2005). http://www.che.utexas.edu/cache/newsletters/fall2005_contents.html
 41. Grossmann, I.E., J. Cerda and J.M. Pinto, "Virtual Library on Process Systems Engineering from PASI Conference," *CAST Communications* (2005), <http://www.castdiv.org/fall05.htm#vi>
 42. You, F. and I.E. Grossmann, "Chapter 4: Optimal Design and Operational Planning of Responsive Process Supply Chains," In *Supply Chain Optimization*, (Eds. M. Georgiadis and L. Papageorgiou), pp. 107-134. Volume 4: Part II, Wiley-VCH Verlag. (2007).
 43. Grossmann, I.E., "Generalized Disjunctive Programming," to appear in *Encyclopedia of Optimization* (eds. C.A. Floudas and P.M. Pardalos), Springer (2007)
 44. Grossmann, I.E. and S. van den Heever, "Optimal Planning of Offshore Oilfield Infrastructure," to appear in *Encyclopedia of Optimization* (eds. C.A. Floudas and P.M. Pardalos), Springer (2007).
 45. Grossmann, I.E., "Logic-based Outer Approximation," to appear in *Encyclopedia of Optimization* (eds. C.A. Floudas and P.M. Pardalos), Springer (2007).
 46. Grossmann, I.E. and K. Furman, Special Issue on Enterprise-wide Optimization, *Computers & Chemical Engineering*, Vol. 32 (11) (2008).
 47. Grossmann, I.E. and J.P. Ruiz, "Generalized Disjunctive Programming: A Framework for Formulation and Alternative Algorithms for MINLP Optimization," *IMA Volume 154, Mixed Integer Nonlinear Programming*, (eds., Jon Lee and Sven Leyffer), pp.93-115, Springer (2012).
 48. Biegler, L.T., I.E. Grossmann and A.W. Westerberg, "Issues and Trends in the Teaching of Process and Product Design," *AIChE J.*, **56**, 1120-1125 (2010).

49. Grossmann, I.E. and M. Martin, *CACHE Process Design Case Study Volume 9: Conceptual Design of Second Generation Bioethanol Production via Gasification of Lignocellulosic Biomass*, CACHE Corp. (2010).
50. Martin, M. and I.E. Grossmann, "Optimal synthesis of sustainable biorefineries," Chapter 10 in "Integrated Biorefineries: Design, Analysis, and Optimization" (Eds. M. El-Halwagi and P. Stuart), pp. 325-347, Taylor and Francis, Boca Raton (2013).
51. Grossmann, I.E. and J.J. Siirola, Editors, Special Issue on Energy and Sustainability, *Computers and Chemical Engineering*, **35** (2011).
52. Grossmann, I.E. and M. Martin, *CACHE Process Design Case Study Volume 10: "Conceptual Design of the Supply Chain and Production Facility of Lignocellulosic Bioethanol via Hydrolysis,"* CACHE Corp. (2011).
53. Ruiz, J.P., J-H. Jagla, I.E. Grossmann, A. Meeraus, and A. Vecchietti, "Chapter 4: Generalized Disjunctive Programming: Solution Strategies," in *Algebraic Modeling Systems: Modeling and Solving Real World Optimization Problems* (Ed. J. Kallrath), pp.57-74, Springer-Verlag Berlin Heidelberg (2012).
54. García- Herreros, P., F. Trespalacios, M. Martín, I.E. Grossmann and J.J. Siirola, *CACHE Design Case Study, Volume 11*, "Conceptual Design of an Aromatics Plant from Shale Gas," CACHE Corp. (2013).
55. Caballero, J.A. and I.E. Grossmann, "Optimization of Distillation Processes," *Distillation Fundamentals and Principles* (eds. A. Gorak and E. Sorensen), Chapter 11, pp.437-496, Elsevier (2014).
56. Martín, M., Grossmann, Process systems engineering approach to biofuel plant desing. In *Biomass and Biofuels : Advanced biorefineries for sustainable production and distribution*. Taylor and Francis, Boca Raton (2015).
57. Grossmann, I.E., M.Martin and L. Yang, "Review of optimization models for integrated process water networks and their application to biofuel processes," *Current Opinion in Chemical Engineering*, **5**, 101–109 (2014).
58. Martín, M.; Grossmann, I.E. "Modeling, Simulation and Optimization in the Chemical Engineering Curriculum" pp.1-10, in *Introduction to Software for Chemical Engineers*. (Ed. M. Martín) Taylor and Francis, CRC Press (2014).
59. Varma, A. and I.E. Grossmann, "Evolving Trends in Chemical Engineering Education," *AIChE J.*, **60**, 3692-3700 (2014).
60. Grossmann, I.E. and C.A. Mendez, "Jaime Cerdá Festschrift Preface: In Honor of Professor Jaime Cerdá," *Ind. Eng. Chem. Res.* **53**, 16895–16898 (2014).
61. Yang, L., M. Martin and I.E. Grossmann, "Optimization Models for Process Water Networks and Their Application to Biofuel Processes," Chapter 1 in *Computer Aided Chemical Engineering: Volume 36* (Ed. F. You), pp.3-32, 2015.

62. Martín, M., Grossmann, I.E., “Biomass as source for chemicals, power and fuels” in *Alternative Energy Sources and Technologies: Process Design and Operation*, Martín M (Ed), pp- 207-233, Springer (2016).
63. Ahmetović, E., I.E. Grossmann, Z. Kravanjac, and N. Ibrić, “Water Optimization in Process Industries,” *Sustainable Utilization of Natural Resources* (eds. P. Mondal and A.K. Dalai) CRC Press, pp. 487-512 (2017).
64. Zhang, Q. and I.E. Grossmann, “Planning and Scheduling for Industrial Demand Side Management: Advances and Challenges,” *Alternative Energy Sources and Technologies: Process Design and Operation*, Martín M (Ed) pp. 383-414, Springer (2016).
65. Zhang, Q., I.E. Grossmann and J.M. Pinto, “Optimal Demand Side Management for Cryogenic Air Separation Plants,” to appear in *Advances in Energy Systems Engineering*, G.M. Kopanos, P. Liu and M.C. Georgiadis (Eds) Springer (2016).
66. Grossmann, I.E., V. Goel, J. Pinto, and J. Wassick., “Applications of Mixed Integer Linear Optimization in Chemical Engineering,” to appear in *Advances and Trends in Optimization with Engineering Applications* (Eds. Terlaky, Anjos and Ahmed), SIAM (2016).
67. Trespalacios, F. and I.E. Grossmann, “Review of mixed-integer nonlinear and generalized disjunctive programming methods applications in Process Systems Engineering,” to appear in *Advances and Trends in Optimization with Engineering Applications* (Eds. Terlaky, Anjos and Ahmed), MOS-SIAM Book Series on Optimization, SIAM, Philadelphia, 2017.
68. Doherty, M.F., I.E. Grossmann and C.C. Pantelides, "A tribute to professor Roger Sargent: Intellectual leader of process systems engineering," *AIChE J.* **62**, 2951-2958 (2016).
69. Grossmann, I.E., Book Review: *Optimization and Management in Manufacturing Engineering: Resource Collaborative Optimization and Management through the Internet of Things*, by Xinbao Liu, Jun Pei, Lin Liu, Hao Cheng, Mi Zhou, Panos M. Pardalos, submitted to *Optimization Methods and Software* (2018).