Iiro K Harjunkoski

List of Publications by Year
in descending order

129 papers	4,753 citations	145106 33 h-index	111975 67 g-index
132 all docs	132 docs citations	132 times ranked	2618 citing authors

#	Article	IF	Citations
1	Integration of maintenance scheduling and planning for large-scale asset fleets. Optimization and Engineering, 2022, 23, 1255-1287.	1.3	3
2	Surrogate‐based optimization of a periodic rescheduling algorithm. AICHE Journal, 2022, 68, .	1.8	2
3	A holistic MILP model for scheduling and inventory management of a multiproduct oil distribution system. Omega, 2021, 98, 102110.	3.6	18
4	Modeling and Analysis of Organic Waste Management Systems in Centralized and Decentralized Supply Chains Using Generalized Disjunctive Programming. Industrial & Engineering Chemistry Research, 2021, 60, 1719-1745.	1.8	6
5	On the fitting of bathtub-shaped failure models to lifetime data for selective maintenance optimization. Computer Aided Chemical Engineering, 2021, , 605-610.	0.3	1
6	Stochastic short-term integrated electricity procurement and production scheduling for a large consumer. Computers and Chemical Engineering, 2021, 145, 107191.	2.0	15
7	A rolling horizon approach for scheduling of multiproduct batch production and maintenance using generalized disjunctive programming models. Computers and Chemical Engineering, 2021, 148, 107268.	2.0	7
8	Dynamic Process Intensification via Data-Driven Dynamic Optimization: Concept and Application to Ternary Distillation. Industrial & Engineering Chemistry Research, 2021, 60, 10265-10275.	1.8	1
9	Efficient formulation for transportation scheduling of single refinery multiproduct pipelines. European Journal of Operational Research, 2021, 293, 731-747.	3.5	7
10	Continuous‐time scheduling formulation for multipurpose batch plants. AICHE Journal, 2020, 66, e16804.	1.8	9
11	Synergistic and Intelligent Process Optimization: First Results and Open Challenges. Industrial & Engineering Chemistry Research, 2020, 59, 16684-16694.	1.8	4
12	Large-scale selective maintenance optimization using bathtub-shaped failure rates. Computers and Chemical Engineering, 2020, 139, 106876.	2.0	16
13	Data-Driven Approach to Grade Change Scheduling Optimization in a Paper Machine. Industrial & Engineering Chemistry Research, 2020, 59, 8281-8294.	1.8	4
14	Industrial Demand Side Management of a Steel Plant Considering Alternative Power Modes and Electrode Replacement. Industrial & Engineering Chemistry Research, 2020, 59, 13642-13656.	1.8	23
15	Reinforcement learning of adaptive online rescheduling timing and computing time allocation. Computers and Chemical Engineering, 2020, 141, 106994.	2.0	14
16	Optimal production and maintenance scheduling for a multiproduct batch plant considering degradation. Computers and Chemical Engineering, 2020, 135, 106734.	2.0	9
17	Performance analysis of waste-to-energy technologies for sustainable energy generation in integrated supply chains. Computers and Chemical Engineering, 2020, 140, 106905.	2.0	27
18	Optimal Maintenance for Degrading Assets in the Context of Asset Fleets-A Case Study. Frontiers in Applied Mathematics and Statistics, 2020, 6, .	0.7	2

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19	Short-term Multiproduct Batch Scheduling Considering Storage Features. IFAC-PapersOnLine, 2020, 53, 11794-11799.	0.5	2
20	The impact of sustainable supply chain on waste-to-energy operations. Computer Aided Chemical Engineering, 2019, 46, 1147-1152.	0.3	3
21	Short-term Scheduling of a Multipurpose Batch Plant Considering Degradation Effects. Computer Aided Chemical Engineering, 2019, , 1213-1218.	0.3	4
22	A non-uniform grid approach for scheduling considering electricity load tracking and future load prediction. Computers and Chemical Engineering, 2019, 129, 106506.	2.0	12
23	An Explicit Online Resource-Task Network Scheduling Formulation to Avoid Scheduling Nervousness. Computer Aided Chemical Engineering, 2019, 46, 61-66.	0.3	3
24	Optimal Maintenance Scheduling for Washing of Compressors to Increase Operational Efficiency. Computer Aided Chemical Engineering, 2019, 46, 1321-1326.	0.3	3
25	Single Reference Grid Continuous-Time Formulation for Batch Scheduling. IFAC-PapersOnLine, 2019, 52, 832-837.	0.5	1
26	Incorporation of parameter prediction models of different fidelity into job shop scheduling. IFAC-PapersOnLine, 2019, 52, 142-147.	0.5	1
27	A Multi-Echelon Supply Chain Model for Sustainable Electricity Generation from Municipal Solid Waste. IFAC-PapersOnLine, 2019, 52, 610-615.	0.5	4
28	Demand Side Management Scheduling Formulation for a Steel Plant Considering Electrode Degradation. IFAC-PapersOnLine, 2019, 52, 691-696.	0.5	10
29	Process as Energy Storage. IFAC-PapersOnLine, 2019, 52, 952-957.	0.5	0
30	Integration of production scheduling and energy-cost optimization using Mean Value Cross Decomposition. Computers and Chemical Engineering, 2019, 129, 106436.	2.0	18
31	Discrete and continuous-time formulations for dealing with break periods: Preemptive and non-preemptive scheduling. European Journal of Operational Research, 2019, 278, 563-577.	3.5	20
32	Process Systems Engineering: Academic and industrial perspectives. Computers and Chemical Engineering, 2019, 126, 474-484.	2.0	45
33	Decision-making of online rescheduling procedures using neuroevolution of augmenting topologies. Computer Aided Chemical Engineering, 2019, 46, 1177-1182.	0.3	3
34	An MILP Approach for Short-term Scheduling of Batch Operations. Computer Aided Chemical Engineering, 2019, 46, 649-654.	0.3	0
35	Optimal planning of municipal solid waste management systems in an integrated supply chain network. Computers and Chemical Engineering, 2019, 123, 155-169.	2.0	68
36	Sustainable supply chain network design for the optimal utilization of municipal solid waste. AICHE Journal, 2019, 65, e16464.	1.8	14

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37	Integrating operations and control: A perspective and roadmap for future research. Computers and Chemical Engineering, 2018, 115, 179-184.	2.0	50
38	Demand Response of Ancillary Service From Industrial Loads Coordinated With Energy Storage. IEEE Transactions on Power Systems, 2018, 33, 951-961.	4.6	98
39	The impact of digitalization on the future of control and operations. Computers and Chemical Engineering, 2018, 114, 122-129.	2.0	98
40	Expanding RTN discrete-time scheduling formulations to preemptive tasks. Computer Aided Chemical Engineering, 2018, 44, 1225-1230.	0.3	3
41	A heuristic neighbourhood search-based algorithm for the solution of resource-task network scheduling problems. Computer Aided Chemical Engineering, 2018, 43, 907-912.	0.3	1
42	Optimal planning of a waste management supply chain. Computer Aided Chemical Engineering, 2018, 44, 1609-1614.	0.3	5
43	Industrial Demand Side Management Formulation for Simultaneous Electricity Load Commitment and Future Load Prediction. Computer Aided Chemical Engineering, 2018, , 1237-1242.	0.3	0
44	Cost-Effective Scheduling of Steel Plants With Flexible EAFs. IEEE Transactions on Smart Grid, 2017, 8, 239-249.	6.2	53
45	Optimization of multipurpose process plant operations: A multi-time-scale maintenance and production scheduling approach. Computers and Chemical Engineering, 2017, 99, 325-339.	2.0	39
46	Industrial scheduling solution based on flexible heuristics. Computers and Chemical Engineering, 2017, 106, 883-891.	2.0	3
47	Integrating Energy Optimization and Production Scheduling in Energy-Intensive Industries. , 2017, , 601-620.		2
48	Dynamic models and fault diagnosis–based triggers for closed–loop scheduling. AICHE Journal, 2017, 63, 1959-1973.	1.8	16
49	Moving horizon closed–loop production scheduling using dynamic process models. AICHE Journal, 2017, 63, 639-651.	1.8	77
50	Implementation of an integrated production and electricity optimization system in melt shop. Journal of Cleaner Production, 2017, 155, 39-46.	4.6	21
51	Future of control and operations in the era of industrial internet of things. Computer Aided Chemical Engineering, 2017, , 2275-2280.	0.3	4
52	Configurable Scheduling Solution using Flexible Heuristics. Computer Aided Chemical Engineering, 2016, , 2361-2366.	0.3	2
53	A Framework for Integrated Scheduling and Control using Discrete-Time Dynamic Process Models. Computer Aided Chemical Engineering, 2016, 38, 601-606.	0.3	6
54	Deploying scheduling solutions in an industrial environment. Computers and Chemical Engineering, 2016, 91, 127-135.	2.0	32

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55	Moving Horizon Scheduling of an Air Separation Unit under Fast-Changing Energy Prices. IFAC-PapersOnLine, 2016, 49, 681-686.	0.5	13
56	KPIs as the interface between scheduling and control. IFAC-PapersOnLine, 2016, 49, 687-692.	0.5	18
57	Integration of Energy-cost Optimization and Production Scheduling Using Multiparametric Programming. Computer Aided Chemical Engineering, 2016, 38, 559-564.	0.3	5
58	Model predictive control of industrial loads and energy storage for demand response. , 2016, , .		21
59	Computational approaches for efficient scheduling of steel plants as demand response resource. , 2016, , .		7
60	Handling input dynamics in integrated scheduling and control. , 2016, , .		1
61	An Improved Energy-Awareness Formulation for General Precedence Continuous-Time Scheduling Models. Industrial & Engineering Chemistry Research, 2016, 55, 1336-1346.	1.8	13
62	Optimal Process Operations in Fast-Changing Electricity Markets: Framework for Scheduling with Low-Order Dynamic Models and an Air Separation Application. Industrial & Engineering Chemistry Research, 2016, 55, 4562-4584.	1.8	125
63	Integrating Production Control and Scheduling in Multisite Enterprises on the Basis of Real-Time Detection of Divergence. Industrial & Engineering Chemistry Research, 2016, 55, 5681-5695.	1.8	1
64	Industrial Tools and Needs. , 2016, , 415-438.		1
65	Industrial demand response by steel plants with spinning reserve provision. , 2015, , .		26
66	Integrated production scheduling and model predictive control of continuous processes. AICHE Journal, 2015, 61, 4179-4190.	1.8	56
67	Industrial perspectives on the deployment of scheduling solutions. Computer Aided Chemical Engineering, 2015, 37, 63-70.	0.3	4
68	Tighter Integration of Maintenance and Production in Short-term Scheduling of Multipurpose Process Plants. Computer Aided Chemical Engineering, 2015, 37, 1937-1942.	0.3	6
69	A time scale-bridging approach for integrating production scheduling and process control. Computers and Chemical Engineering, 2015, 79, 59-69.	2.0	100
70	Optimization of steel production scheduling with complex time-sensitive electricity cost. Computers and Chemical Engineering, 2015, 76, 117-136.	2.0	121
71	Integrating Control and Scheduling based on Real-Time Detection of Divergence. Computer Aided Chemical Engineering, 2015, , 1943-1948.	0.3	0
72	A Mean Value Cross Decomposition Strategy for Demand-side Management of a Pulping Process. Computer Aided Chemical Engineering, 2015, 37, 1931-1936.	0.3	15

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73	Scheduling and energy – Industrial challenges and opportunities. Computers and Chemical Engineering, 2015, 72, 183-198.	2.0	131
74	Sharing Data for Production Scheduling Using the ISA-95 Standard. Frontiers in Energy Research, 2014, 2, .	1.2	19
75	Integration of Scheduling and Control Using Internal Coupling Models. Computer Aided Chemical Engineering, 2014, , 529-534.	0.3	7
76	Steel Production Scheduling Optimization under Time-sensitive Electricity Costs. Computer Aided Chemical Engineering, 2014, 33, 373-378.	0.3	11
77	Scheduling multiple factory cranes on a common track. Computers and Operations Research, 2014, 48, 102-112.	2.4	31
78	Optimal supply chain design and management over a multi-period horizon under demand uncertainty. Part II: A Lagrangean decomposition algorithm. Computers and Chemical Engineering, 2014, 62, 211-224.	2.0	13
79	Optimal supply chain design and management over a multi-period horizon under demand uncertainty. Part I: MINLP and MILP models. Computers and Chemical Engineering, 2014, 62, 194-210.	2.0	33
80	Integrated production scheduling and process control: A systematic review. Computers and Chemical Engineering, 2014, 71, 377-390.	2.0	189
81	Scope for industrial applications of production scheduling models and solution methods. Computers and Chemical Engineering, 2014, 62, 161-193.	2.0	411
82	Modeling, Simulation, and Optimization in the Process and Commodities Industries. , 2014, , 11-21.		0
83	Integration of Scheduling and ISA-95. Computer Aided Chemical Engineering, 2014, 33, 427-432.	0.3	1
84	Resource–Task Network Formulations for Industrial Demand Side Management of a Steel Plant. Industrial & Engineering Chemistry Research, 2013, 52, 13046-13058.	1.8	121
85	Continuous-time Batch Scheduling Approach for Optimizing Electricity Consumption Cost. Computer Aided Chemical Engineering, 2013, , 403-408.	0.3	16
86	Resource-Task Network Based Approach for Industrial Demand Side Management of Steel Production. Computer Aided Chemical Engineering, 2013, , 259-264.	0.3	1
87	An innovative scheduling coordination method for improved productivity and energy efficiency of a large-scale integrated steel plant. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 250-255.	0.4	2
88	A new heuristic for plant-wide schedule coordination problems: The intersection coordination heuristic. Computers and Chemical Engineering, 2012, 42, 152-167.	2.0	20
89	Optimal operation: Scheduling, advanced control and their integration. Computers and Chemical Engineering, 2012, 47, 121-133.	2.0	135
90	Optimal Energy Management and Production Scheduling. Computer Aided Chemical Engineering, 2012, 30, 332-336.	0.3	2

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91	Planning and Scheduling as a Part of a Control System - Implementation Aspects. Computer Aided Chemical Engineering, 2012, , 1110-1114.	0.3	2
92	Production Optimization and Scheduling across a Steel Plant. Computer Aided Chemical Engineering, 2011, , 920-924.	0.3	1
93	Production Optimization and Scheduling in a Steel Plant: Hot Rolling Mill. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 11750-11754.	0.4	5
94	Greedy algorithm for scheduling batch plants with sequence‐dependent changeovers. AICHE Journal, 2011, 57, 373-387.	1.8	27
95	Optimal scheduling of continuous plants with energy constraints. Computers and Chemical Engineering, 2011, 35, 372-387.	2.0	62
96	Effective Decomposition Algorithm for Multistage Batch Plant Scheduling. Computer Aided Chemical Engineering, 2010, 28, 475-480.	0.3	1
97	Rolling-Horizon Algorithm for Scheduling under Time-Dependent Utility Pricing and Availability. Computer Aided Chemical Engineering, 2010, 28, 1171-1176.	0.3	11
98	Integration of scheduling and control—Theory or practice?. Computers and Chemical Engineering, 2009, 33, 1909-1918.	2.0	132
99	Optimal Short-Term Scheduling of Large-Scale Multistage Batch Plants. Industrial & Engineering Chemistry Research, 2009, 48, 11002-11016.	1.8	45
100	New Continuous-Time Scheduling Formulation for Continuous Plants under Variable Electricity Cost. Industrial & Engineering Chemistry Research, 2009, 48, 6701-6714.	1.8	97
101	Flexible and Configurable Steel Plant Scheduling System. Computer Aided Chemical Engineering, 2009, , 1623-1628.	0.3	1
102	Optimal Scheduling Under Variable Electricity Pricing and Availability. Computer Aided Chemical Engineering, 2009, 27, 1695-1700.	0.3	0
103	Produktionsoptimierung. Automatisierungstechnik, 2008, 56, 061-063.	0.4	0
104	Qualitätsbasierte Schnittplanoptimierung in der Papierindustrie (Quality-based Retrimming in the) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	0.4	1
105	Flexible and configurable MILP-models for meltshop scheduling optimization. Computer Aided Chemical Engineering, 2008, , 677-682.	0.3	13
106	Simultaneous scheduling and optimization of a copper plant. Computer Aided Chemical Engineering, 2006, 21, 1197-1202.	0.3	9
107	A novel solution approach for quality-based retrimming optimization. Computer Aided Chemical Engineering, 2006, , 1395-1400.	0.3	0
108	Production optimization for continuously operated processes with optimal operation and scheduling of multiple units. Computers and Chemical Engineering, 2006, 30, 392-406.	2.0	38

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109	A simultaneous optimization approach for off-line blending and scheduling of oil-refinery operations. Computers and Chemical Engineering, 2006, 30, 614-634.	2.0	159
110	State-of-the-art review of optimization methods for short-term scheduling of batch processes. Computers and Chemical Engineering, 2006, 30, 913-946.	2.0	675
111	Efficient MILP-based solution strategies for large-scale industrial batch scheduling problems. Computer Aided Chemical Engineering, 2006, , 2231-2236.	0.3	5
112	Production campaign planning including grade transition sequencing and dynamic optimization. Computers and Chemical Engineering, 2005, 29, 2163-2179.	2.0	85
113	Solving a large-scale industrial scheduling problem using MILP combined with a heuristic procedure. European Journal of Operational Research, 2002, 138, 29-42.	3.5	30
114	Decomposition techniques for multistage scheduling problems using mixed-integer and constraint programming methods. Computers and Chemical Engineering, 2002, 26, 1533-1552.	2.0	183
115	Combined MILP-constraint programming approach for the optimal scheduling of multistage batch processes. Computer Aided Chemical Engineering, 2001, , 877-882.	0.3	3
116	A decomposition approach for the scheduling of a steel plant production. Computers and Chemical Engineering, 2001, 25, 1647-1660.	2.0	175
117	Hybrid mixed-integer/constraint logic programming strategies for solving scheduling and combinatorial optimization problems. Computers and Chemical Engineering, 2000, 24, 337-343.	2.0	47
118	Convexification of different classes of non-convex MINLP problems. Computers and Chemical Engineering, 1999, 23, 439-448.	2.0	75
119	Numerical and environmental considerations on a complex industrial mixed integer non-linear programming (MINLP) problem. Computers and Chemical Engineering, 1999, 23, 1545-1561.	2.0	35
120	Exploring the convex transformations for solving non-convex bilinear integer problems. Computers and Chemical Engineering, 1999, 23, S471-S474.	2.0	1
121	A short-term scheduling problem in the paper-converting industry. Computers and Chemical Engineering, 1999, 23, S871-S874.	2.0	6
122	Solving a two-dimensional trim-loss problem with MILP. European Journal of Operational Research, 1998, 104, 572-581.	3.5	11
123	Different transformations for solving non-convex trim-loss problems by MINLP. European Journal of Operational Research, 1998, 105, 594-603.	3.5	73
124	An extended cutting plane method for a class of non-convex MINLP problems. Computers and Chemical Engineering, 1998, 22, 357-365.	2.0	86
125	Solving a production optimization problem in a paper-converting mill with MILP. Computers and Chemical Engineering, 1998, 22, 563-570.	2.0	28
126	Different formulations for solving trim loss problems in a paper-converting mill with ILP. Computers and Chemical Engineering, 1996, 20, S121-S126.	2.0	38

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127	Comparison of different MINLP methods applied on certain chemical engineering problems. Computers and Chemical Engineering, 1996, 20, S333-S338.	2.0	13
128	MILP Optimization Models for Short-term Scheduling of Batch Processes. , 0, , 163-184.		4
129	Factory Crane Scheduling by Dynamic Programming. , 0, , .		6