Lars Moench

List of Publications by Year
in descending order

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130 papers	3,222 citations	136940 32 h-index	182417 51 g-index
140 all docs	140 docs citations	140 times ranked	1476 citing authors

#	Article	IF	Citations
1	A survey of problems, solution techniques, and future challenges in scheduling semiconductor manufacturing operations. Journal of Scheduling, 2011, 14, 583-599.	1.9	312
2	Heuristic scheduling of jobs on parallel batch machines with incompatible job families and unequal ready times. Computers and Operations Research, 2005, 32, 2731-2750.	4.0	174
3	Genetic algorithm based scheduling of parallel batch machines with incompatible job families to minimize total weighted tardiness. International Journal of Production Research, 2004, 42, 1621-1638.	7.5	138
4	Production Planning and Control for Semiconductor Wafer Fabrication Facilities. Operations Research/ Computer Science Interfaces Series, 2013, , .	0.3	127
5	A survey of semiconductor supply chain models part I: semiconductor supply chains, strategic network design, and supply chain simulation. International Journal of Production Research, 2018, 56, 4524-4545.	7.5	91
6	Genetic algorithm-based subproblem solution procedures for a modified shifting bottleneck heuristic for complex job shops. European Journal of Operational Research, 2007, 177, 2100-2118.	5.7	89
7	Modelling and analysis of semiconductor manufacturing in a shrinking world: challenges and successes. European Journal of Industrial Engineering, 2011, 5, 254.	0.8	74
8	Variable neighborhood search approaches for scheduling jobs on parallel machines with sequence-dependent setup times, precedence constraints, and ready times. Computers and Industrial Engineering, 2011, 61, 336-345.	6.3	73
9	A distributed shifting bottleneck heuristic for complex job shops. Computers and Industrial Engineering, 2005, 49, 363-380.	6.3	70
10	Machine learning techniques for scheduling jobs with incompatible families and unequal ready times on parallel batch machines. Engineering Applications of Artificial Intelligence, 2006, 19, 235-245.	8.1	68
11	A survey of scheduling with parallel batch (p-batch) processing. European Journal of Operational Research, 2022, 298, 1-24.	5.7	62
12	Planning Wafer Starts Using Nonlinear Clearing Functions: A Large-Scale Experiment. IEEE Transactions on Semiconductor Manufacturing, 2013, 26, 602-612.	1.7	61
13	Heuristics for vehicle routing problems with backhauls, time windows, and 3D loading constraints. European Journal of Operational Research, 2018, 266, 877-894.	5.7	61
14	Hybrid algorithms for the vehicle routing problem with clustered backhauls and 3D loading constraints. European Journal of Operational Research, 2015, 243, 82-96.	5.7	60
15	Simulation-based benchmarking of production control schemes for complex manufacturing systems. Control Engineering Practice, 2007, 15, 1381-1393.	5.5	56
16	A survey of semiconductor supply chain models part III: master planning, production planning, and demand fulfilment. International Journal of Production Research, 2018, 56, 4565-4584.	7.5	55
17	Modeling Cycle Times in Production Planning Models for Wafer Fabrication. IEEE Transactions on Semiconductor Manufacturing, 2016, 29, 153-167.	1.7	51
18	A methodology to solve large-scale cooperative transportation planning problems. European Journal of Operational Research, 2012, 223, 626-636.	5.7	48

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19	Scheduling jobs with ready times and precedence constraints on parallel batch machines using metaheuristics. Computers and Industrial Engineering, 2014, 78, 175-185.	6.3	48
20	Simulation-based performance assessment of master planning approaches in semiconductor manufacturing. Omega, 2014, 46, 21-35.	5.9	46
21	Heuristic approaches for scheduling jobs in large-scale flexible job shops. Computers and Operations Research, 2016, 68, 97-109.	4.0	44
22	The FABMAS multi-agent-system prototype for production control of water fabs: design, implementation and performance assessment. Production Planning and Control, 2006, 17, 701-716.	8.8	43
23	A survey of semiconductor supply chain models Part II: demand planning, inventory management, and capacity planning. International Journal of Production Research, 2018, 56, 4546-4564.	7.5	43
24	Heuristic approaches for master planning in semiconductor manufacturing. Computers and Operations Research, 2012, 39, 479-491.	4.0	42
25	A decision support system for cooperative transportation planning: Design, implementation, and performance assessment. Expert Systems With Applications, 2014, 41, 5125-5138.	7.6	41
26	Metaheuristics for scheduling jobs with incompatible families on parallel batching machines. Journal of the Operational Research Society, 2011, 62, 2083-2096.	3.4	39
27	On the numerical solution of the direct scattering problem for an open sound-hard arc. Journal of Computational and Applied Mathematics, 1996, 71, 343-356.	2.0	38
28	An integrated scheduling and material-handling approach for complex job shops: a computational study. International Journal of Production Research, 2012, 50, 5966-5985.	7.5	38
29	Rolling horizon, multi-product production planning with chance constraints and forecast evolution for wafer fabs. International Journal of Production Research, 2018, 56, 6112-6134.	7.5	38
30	Scheduling jobs with time constraints between consecutive process steps in semiconductor manufacturing. , 2012, , .		37
31	Minimizing earlinessâ€“tardiness on a single burn-in oven with a common due date and maximum allowable tardiness constraint. OR Spectrum, 2006, 28, 177-198.	3.4	34
32	A computational study of a shifting bottleneck heuristic for multi-product complex job shops. Production Planning and Control, 2011, 22, 25-40.	8.8	33
33	ManufAg: a multi-agent-system framework for production control of complex manufacturing systems. Information Systems and E-Business Management, 2006, 4, 159-185.	3.7	32
34	A hybrid scheduling approach for a two-stage flexible flow shop with batch processing machines. Journal of Scheduling, 2018, 21, 209-226.	1.9	31
35	Simulation-based assessment of machine criticality measures for a shifting bottleneck scheduling approach in complex manufacturing systems. Computers in Industry, 2007, 58, 644-655.	9.9	30
36	A survey of challenges in modelling and decision-making for discrete event logistics systems. Computers in Industry, 2011, 62, 557-567.	9.9	29

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37	A variable neighborhood search approach for planning and scheduling of jobs on unrelated parallel machines. Journal of Intelligent Manufacturing, 2012, 23, 1621-1635.	7.3	29
38	Integrated process planning and scheduling for large-scale flexible job shops using metaheuristics. International Journal of Production Research, 2017, 55, 392-409.	7.5	29
39	A Testbed for Simulating Semiconductor Supply Chains. IEEE Transactions on Semiconductor Manufacturing, 2017, 30, 293-305.	1.7	29
40	A matheuristic framework for batch machine scheduling problems with incompatible job families and regular sum objective. Applied Soft Computing Journal, 2018, 68, 835-846.	7.2	29
41	Decomposition heuristics for minimizing earlinessâ€“tardiness on parallel burn-in ovens with a common due date. Computers and Operations Research, 2007, 34, 3380-3396.	4.0	28
42	A comparison of MIP-based decomposition techniques and VNS approaches for batch scheduling problems. , 2009, , .		28
43	Scheduling jobs on a single batch processing machine with incompatible job families and weighted number of tardy jobs objective. Computers and Operations Research, 2013, 40, 1224-1233.	4.0	27
44	SMT2020â€”A Semiconductor Manufacturing Testbed. IEEE Transactions on Semiconductor Manufacturing, 2020, 33, 522-531.	1.7	26
45	Simulation-Based Performance Assessment of Production Planning Models With Safety Stock and Forecast Evolution in Semiconductor Wafer Fabrication. IEEE Transactions on Semiconductor Manufacturing, 2020, 33, 1-12.	1.7	24
46	Hybrid approaches to optimize mixed-model assembly lines in low-volume manufacturing. Journal of Heuristics, 2018, 24, 49-81.	1.4	22
47	A simulation-based framework to schedule surgeries in an eye hospital. IIE Transactions on Healthcare Systems Engineering, 2014, 4, 191-208.	0.8	21
48	Towards a supply chain simulation reference model for the semiconductor industry. , 2011, , .		19
49	Incorporating engineering process improvement activities into production planning formulations using a large-scale wafer fab model. International Journal of Production Research, 2016, 54, 6416-6435.	7.5	18
50	Simulation-based performance assessment of production planning formulations for semiconductor wafer fabrication. , 2015, , .		17
51	Bi-criteria parallel batch machine scheduling to minimize total weighted tardiness and electricity cost. Journal of Business Economics, 2020, 90, 1345-1381.	1.9	17
52	Simulation framework for complex manufacturing systems with automated material handling. , 2007, , .		16
53	An iterative approach for the serial batching problem with parallel machines and job families. Annals of Operations Research, 2013, 206, 425-448.	4.1	16
54	Model-Based Decision Support in Manufacturing and Service Networks. Business and Information Systems Engineering, 2014, 6, 17-24.	6.1	16

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55	Solving volume and capacity planning problems in semiconductor manufaturing: A computational study. , 2008, , .		15
56	Integrated heuristics for scheduling multiple order jobs in a complex job shop. International Journal of Metaheuristics, 2010, 1, 156.	0.1	15
57	Architecture for simulation-based performance assessment of planning approaches in semiconductor manufacturing. , 2010, , .		13
58	Genetic algorithms to solve a single machine multiple orders per job scheduling problem. , 2010, , .		13
59	A simultaneous and iterative approach for parallel machine scheduling with sequence-dependent family setups. Journal of Scheduling, 2014, 17, 471-487.	1.9	13
60	Decomposition heuristics for parallel-machine multiple orders per job scheduling problems with a common due date. Journal of the Operational Research Society, 2021, 72, 1737-1753.	3.4	13
61	Qualification Management in Wafer Fabs: Optimization Approach and Simulation-Based Performance Assessment. IEEE Transactions on Automation Science and Engineering, 2020, 17, 475-489.	5.2	13
62	An automated negotiation approach to solve single machine scheduling problems with interfering job sets. Computers and Industrial Engineering, 2016, 99, 318-329.	6.3	12
63	Modeling and analysis of semiconductor manufacturing in a shrinking world: Challenges and successes. , 2008, , .		11
64	Cost-Minimizing Service Selection in the Presence of End-to-End QoS Constraints and Complex Charging Models. , 2012, , .		11
65	Grouping genetic algorithms for solving single machine multiple orders per job scheduling problems. Annals of Operations Research, 2015, 235, 709-739.	4.1	11
66	Parallel machine scheduling with the total weighted delivery time performance measure in distributed manufacturing. Computers and Operations Research, 2021, 127, 105126.	4.0	11
67	A New High-Volume/Low-Mix Simulation Testbed for Semiconductor Manufacturing. , 2019, , .		10
68	Heuristic approaches for determining minimum cost delivery quantities in supply chains. European Journal of Industrial Engineering, 2008, 2, 377.	0.8	9
69	Simulation of low-volume mixed model assembly lines: Modeling aspects and case study. , 2014, , .		9
70	A clearing function based bid-price approach to integrated order acceptance and release decisions. European Journal of Operational Research, 2018, 268, 243-254.	5.7	9
71	Scheduling and Simulation. , 2006, , 109-133.		9
72	Reliable Service Reconfiguration for Time-Critical Service Compositions. , 2013, , .		8

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73	Robust Multi-criteria Service Composition in Information Systems. Business and Information Systems Engineering, 2014, 6, 141-151.	6.1	8
74	Decomposition methods for cost and tardiness reduction in aircraft manufacturing flow lines. Computers and Operations Research, 2019, 103, 134-147.	4.0	8
75	Heuristic and metaheuristic methods for the multiâ€skill project scheduling problem with partial preemption. International Transactions in Operational Research, 2023, 30, 858-891.	2.7	8
76	A simulation framework for assessing the performance of cooperative transportation planning algorithms. , 2008, , .		7
77	An agent-based planning approach within the framework of distributed hierarchical enterprise management. Journal of Management Control, 2011, 22, 205-236.	2.1	7
78	Service Selection with Runtime Aspects:A Hierarchical Approach. IEEE Transactions on Services Computing, 2015, 8, 481-493.	4.6	7
79	An optimization model for qualification management in wafer fabs. , 2016, , .		7
80	A HIERARCHICAL APPROACH TO QUALIFICATION MANAGEMENT IN WAFER FABS. , 2018, , .		7
81	Hybrid algorithms for the earlinessâ€“tardiness single-machine multiple orders per job scheduling problem with a common due date. RAIRO - Operations Research, 2018, 52, 1329-1350.	1.8	7
82	An Ontology to Support Adaptive Agents for Complex Manufacturing Systems. , 2008, , .		6
83	Multiple orders per job formation and release strategies in large-scale wafer fabs: a simulation study. Journal of Simulation, 2011, 5, 25-43.	1.5	6
84	Semiconductor Manufacturing Process Description. Operations Research/ Computer Science Interfaces Series, 2013, , 11-28.	0.3	6
85	A heuristic to support make-to-stock, assemble-to-order, and make-to-order decisions in semiconductor supply chains. , 2013, , .		6
86	Simulation-based optimization for integrated production planning and capacity expansion decisions. , 2016, , .		6
87	Metaheuristic Approaches for Scheduling Jobs on Parallel Batch Processing Machines. Profiles in Operations Research, 2016, , 187-207.	0.4	6
88	Modelling and analysis of semiconductor supply chains. International Journal of Production Research, 2018, 56, 4521-4523.	7.5	6
89	Scheduling jobs on parallel machines with sequence-dependent setup times, precedence constraints, and ready times using variable neighborhood search. , 2009, , .		5
90	An Ant Colony optimization approach to solve cooperative transportation planning problems. , 2009, , .		5

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91	A comparison of heuristics to solve a single machine batching problem with unequal ready times of the jobs. , 2011, , .		5
92	ELECTRICITY POWER COST-AWARE SCHEDULING OF JOBS ON PARALLEL BATCH PROCESSING MACHINES. , 2018, , .		5
93	An agent-based infrastructure for assessing the performance of planning approaches for semiconductor supply chains. Expert Systems With Applications, 2022, 202, 117001.	7.6	5
94	Using simulation to improve planning decisions in mixed-model assembly lines. , 2015, , .		4
95	Characteristic Curves and Cycle Time Control of Re-Entrant Lines. IEEE Transactions on Semiconductor Manufacturing, 2019, 32, 140-153.	1.7	4
96	Using iterative simulation to incorporate load-dependent lead times in master planning heuristics. , 2012, , .		3
97	Production Planning Approaches. Operations Research/ Computer Science Interfaces Series, 2013, , 207-246.	0.3	3
98	Decomposition heuristic for a two-machine flow shop with batch processing. , 2014, , .		3
99	Simulation-based optimiziation to design equipment health-aware dispatching rules. , 2017, , .		3
100	Incorporating elements of a sustainable and distributed generation system into a production planning model for a wafer fab. , 2017, , .		3
101	Problem Reduction Approaches for Production Planning Using Clearing Functions. , 2018, , .		3
102	Modeling and simulation of cataract surgery processes. , 2009, , .		2
103	A comparison of production planning formulations with exogenous cycle time estimates using a large-scale wafer fab model. , 2013, , .		2
104	Scheduling jobs on parallel machines with qualification constraints. , 2015, , .		2
105	Using simulation-based optimization to determine production strategies and safety stock levels in semiconductor supply chains. , 2015, , .		2
106	Rolling horizon planning with engineering activities in semiconductor supply chains. , 2017, , .		2
107	Integrated Planning of Production and Engineering Activities in Semiconductor Supply Chains: A Simulation Study. , 2019, , .		2
108	Matheuristics for Qualification Management Decisions in Wafer Fabs. IEEE Transactions on Semiconductor Manufacturing, 2020, 33, 511-521.	1.7	2

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109	Infrastructure for model-based production scheduling. International Journal of Industrial and Systems Engineering, 2010, 6, 441.	0.2	1
110	Dispatching Approaches. Operations Research/ Computer Science Interfaces Series, 2013, , 65-104.	0.3	1
111	Genetic algorithms for a single-machine multiple orders per job scheduling problem with a common due date. , 2017, , .		1
112	Simulation-based Performance Assessment of Tool Requalification Strategies in Wafer Fabs. , 2018, , .		1
113	A matheuristic for making order acceptance decisions in multi-product, multi-stage manufacturing systems. Applied Soft Computing Journal, 2021, 111, 107640.	7.2	1
114	Scheduling and Simulation in wafer fabs: Competitors, Independent Players or Amplifiers?. , 2020, , .		1
115	Modeling and Analysis Tools. Operations Research/ Computer Science Interfaces Series, 2013, , 29-64.	0.3	1
116	Heuristics for Order-Lot Pegging In Multi-Fab Settings. , 2020, , .		1
117	Hierarchical Decision-Making for Qualification Management in Wafer Fabs: A Simulation Study. IEEE Transactions on Automation Science and Engineering, 2023, 20, 320-333.	5.2	1
118	Design and Application of an Ontology for Demand Fulfillment in Semiconductor Supply Chains. , 2021, , .		1
119	Simulation-Based Performance Assessment of Sustainable Manufacturing Decisions. , 2021, , .		1
120	Data-Driven Production Planning Formulations For Wafer Fabs: A Computational Study. , 2021, , .		1
121	A Multi-criteria Production Planning Approach for Aircraft Manufacturing Flow Lines. IFAC-PapersOnLine, 2022, 55, 144-149.	0.9	1
122	Special Issue on Automation Analytics Beyond Industry 4.0: From Hybrid Strategy to Zero-Defect Manufacturing. IEEE Transactions on Automation Science and Engineering, 2022, 19, 1472-1476.	5.2	1
123	State of the Practice and Future Needs for Production Planning and Control Systems. Operations Research/ Computer Science Interfaces Series, 2013, , 247-266.	0.3	0
124	Deterministic Scheduling Approaches. Operations Research/ Computer Science Interfaces Series, 2013, , 105-175.	0.3	0
125	A sampling approach to solve the vehicle routing problem with time windows and stochastic travel times. , 2015, , .		0
126	Fast Heuristics for Making Qualification Management Decisions in Wafer Fabs. , 2019, , .		0

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127	Guest Editorial Special Sectionâ€"Papers From the 2019 MASM/WSC Conference. IEEE Transactions on Semiconductor Manufacturing, 2020, 33, 493-495.	1.7	0
128	Order Release Approaches. Operations Research/ Computer Science Interfaces Series, 2013, , 177-205.	0.3	0
129	ProblemreduzierungsansÃtze fÃ¼r die Produktionsplanung unter Verwendung von Auslastungsfunktionen. Automatisierungstechnik, 2019, 67, 455-467.	0.8	0
130	Framework for Simulation-Based Decision Making in Semiconductor Value Chains. Lecture Notes in Electrical Engineering, 2020, , 14-23.	0.4	0