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Faculty of Innovation Engineering
Department of Engineering Science
Macao Institute of Systems Engineering

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Academic Qualification

Ph. D. in Systems Engineering, Xi'an Jiaotong University, Xi'an, China, 1988.
M. S. in Systems Engineering, Xi'an Jiaotong University, Xi'an, China, 1985.
B. S. in Electrical Engineering, Anhui University of Technology, Huainan, China, 1982.

Teaching Area

Algorithm theory
Operations research and optimization
Automation, Electric motor and drive

Research Area

Intelligent manufacturing
Discrete event systems, and Petri net theory and applications
Production planning, scheduling and control a edul ion planning, sct scre ¼

: Shenyang Institute of Automation, Chinese Academy of Sciences, Shenyang, P. R. China, Associate Professor.

: School of Industrial Engineering, Purdue University, West Lafayette, Indiana, USA, Visiting Scholar.

: Shenyang Institute of Automation, Chinese Academy of Sciences, Shenyang, P. R. China, Assistant Professor.

Research Grants

Operational Optimization and Control of Cluster Tools with Multiple Chamber Configuration in a Process Module for Wafer Fabrication, FDCT.

Self-Learning Optimal Control of City Energy Management System Based on Edge Computing, FDCT.

Optimal Scheduling and Control of Cluster Tools for Wafer Fabrication with Strict Process Constraints in Semiconductor Manufacturing, FDCT.

Maximally Permissive Supervisory Control of Resource Allocation Systems Based on Resource-Oriented Petri Nets, FDCT.

Short-Term Scheduling Optimization for Continuous Process Industry by Using Hybrid System Control Theory, FDCT.

Representative publications (Complete publication refer to my webpage)

- [1] _____ and M. C. Zhou, *Industrial Scheduling: Theory, Methods, and Applications*, CRC Press, Taylor & Francis Group, New York, October 2009.
- [2] _____ and M. C. Zhou, Resource-oriented Petri nets in deadlock prevention and avoidance, in M. C. Zhou and M. P. Fanti (Ed.), *Resource-oriented Petri Nets*, Marcel Dekker, NY, January 2005.
- [3] _____ and M. C. Zhou, A resource-oriented Petri net approach to scheduling and control of time-constrained cluster tools in semiconductor fabrication, in Z. W. Li and A. M. Al-Ahmari (Ed.), *Cluster Tools for Semiconductor Manufacturing*, IGI Global, New York, May, 2013.
- [4] Y. Qiao, _____, and M. C. Zhou, Real-time scheduling and control of single-arm cluster tools with residency time constraint and activity time variation by using resource-oriented Petri nets, in Z. W. Li and A. M. Al-Ahmari (Ed.), *Cluster Tools for Semiconductor Manufacturing*, IGI Global, New York, May, 2013.
- [5] _____, M. C. Zhou, F. Chu, and S. Mammar, Modeling and scheduling of crude oil operations in refinery: a hybrid timed Petri net approach, in M. Khalgui, O. Mosbahi, and A. Valentini (Ed.), *Hybrid Systems in Manufacturing*, IGI Global, New York, May 2013.
- [6] _____, M. C. Zhou, F. Chu, and S. Mammar, Modeling, Analysis, Scheduling and Control of Cluster Tools in Semiconductor Fabrication, in *Cluster Tools for Semiconductor Manufacturing*, Edited by M. C. Zhou, H.-X. Li and M. Weijnen, Wiley/IEEE Press, Hoboken, NJ, pp. 289-315, 2015.

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- approach to scheduling of high throughput screening system for enzymatic assay, *J*
I , *C* , *0I* , early access, DOI: 10.1109/TSMC.2022.3161643.
- [2] S. F. Chen, H. Fu, Y. Qiao, and _____, Route choice behavior modeling for emergency evacuation and efficiency analysis based on type-II fuzzy theory, *J*
I , vol. 23, no. 7, 6934-6949, Jul. 2022.
- [3] Y. Qiao, Y. J. Lu, _____, J. Li, and B. Liu, An efficient binary integer programming model residency time-constrained cluster tools with chamber cleaning requirements, *J*
I , vol. 19, no. 3, 1757-1771, Jul. 2022.
- [4] M. Ghahramani, M. C. Zhou, Y. Qiao, and _____, Spatio-temporal analysis of mobile phone network based on self-organizing feature map, *J* , vol. 9, no. 13, 10948-10960, Jul. 2022.
- [5] Y. F. Chen, Y. T. Li, Z. W. Li, and _____, On optimal supervisor design for discrete event systems modeled with Petri nets via constraint simplification, *J* *I* "C" , vol. 52, no. 6, 3404-3418, Jun. 2022.
- [6] Q. H. Zhu, G. H. Wang, Y. Hou, and _____, Optimally scheduling dual-arm multi-cluster tools process two wafer types, *J* , vol. 7, no. 3, 5920-5927, Jul. 2022.
- [7] Z. L. Yuan, X. R. Li, D. Wu, X. J. Ban, _____, H.-N. Dai, and H. Wang, Continuous-time prediction of industrial paste thickener system with differential ODE-net, *J* / *I* , vol. 9, no. 9, 686-698, Apr. 2022.
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- [9] D. X. Hou, Y. X. Zhang, _____, and Q. H. Zhu, Constrained multi-objective optimization of short-term crude oil scheduling with dual pipelines and charging tank maintenance requirement, *J* , vol. 588, 381-404, Jan. 2022.
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- [12] S. H. Teng, Z. F. Zheng, _____, L. K. Fei, and W. Zhang, Domain adaptation via incremental confidence samples into classification, *J*

- [4] J. L. Liu, S. H. Teng, L. K. Fei, W. Zhang, X. Z. Fang, Z. X. Zhang, and _____, A Novel Consensus Learning Approach to Incomplete Multi-view Clustering, *F*, vol. 115, Article NO 107890, Jul. 2021.
- [5] B. Y. Huang, H. B. Zhu, D. N. Liu, _____, Y. Qiao, and Q. Jiang, Solving last-mile logistics problem in spatiotemporal crowdsourcing via role awareness with adaptive clustering, *J*, vol. 8, no. 3, 668-681, Jun. 2021.
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- [9] Y. Qiao, S. W. Zhang, _____, M. C. Zhou, Z. W. Li, and T. Qu, Efficient approach to failure response of process module in dual-arm cluster tools with wafer residency time constraints, *J*, vol. 51, no. 3, 1612-1629, Mar. 2021.
- [10] Z. C. Liu, _____, Y. Qiao, Z. W. Li, Performance evaluation of public bus transportation by using DEA models and Shannon's entropy: an example from a company in a large city of China, *I*, vol. 8, no. 4, 779-795, Apr. 2021.
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- [13] X. B. Li, Z. H. Yu, Z. W. Li, and _____, Group consensus via pinning control for a class of heterogeneous multi-agent systems with input constraints, *I*, vol. 542, 247-262, Jan. 2021.
- [14] J. Liu, _____, Y. Qiao, and Z. W. Li, A scientometric review of researches on traffic forecasting in Transportation, *J*, vol. 15, no. 1, 1-16, Jan. 2021.
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 - [3] X. Y. Cong, A. R. Wang, Y. F. Chen, _____, T. Qu, M. Khalgui, and Z. W. Li, Most permissive liveness-enforcing Petri net supervisors for discrete event systems via linear monitors, *J Intell Manuf*, vol. 92, 145-154, Sep. 2019.
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2021 Hsue-shen Tsien Paper Award for the paper “Polynomial Approach to Optimal One-wafer Cyclic Scheduling of Treelike Hybrid Multi-Cluster Tools via Petri Nets, */ I*, vol. 5, no. 1, pp. 270-280, Jan. 2018”, Nov. 2021.

Third Class Award of Natural Science, Macau, 2018.

Third Class Award of Technological Invention, Macau, 2016.

Highly cited researchers in Thomson Reuters’ Highly Cited Researchers 2012.

First Class Award of Natural Science of Guangdong Province, China, 2010.

Who's Who in Science and Engineering (Marquis *Who's Who*), 7th Edition (2003-2004).

Who's Who in Science and Engineering (Marquis *Who's Who*), 8th Edition (2005-2006).

Who's Who in the World (Marquis *Who's Who*), 8th Edition (2007-2008).

2011 QSI Best Application Paper Award Finalist, for the paper "Modeling and Analysis of Dual-Arm Cluster Tools for Wafer Fabrication with Revisiting," by Y. Qiao, N. Wu, and M. C. Zhou, & *I*, Trieste, Italy, August 24 - 27, 2011.

Best student paper award, for the paper "Real-time control policy for single-arm cluster tools with residency time constraints and activity time variation by using Petri net," By Y. Qiao, N. Q. Wu, and M. C. Zhou, 2012 *D " I*, Beijing, China, April 11-13, 2012.

2016 Best Conference Paper Award Finalist, for the paper "Optimizing close-down processes of single-robot cluster tools via linear programming," by Y. Qiao, M. C. Zhou, N. Q. Wu, Q. H. Zhu, and Z. W. Li, & , *I*, Fort Worth, TX USA, August 21-24, 2016.

Associate Editor: Information Sciences, 2017-

Associate Editor: IEEE/CAA Journal of Automatica Sinica, 2015-2018.

Associate Editor: IEEE Transactions on Systems, Man, & Cybernetics, Part C, 2007-2012.

Associate Editor: IEEE Transactions on Automation Science and Engineering, 2009-2012.

Editor in Chief: Industrial Engineering Journal, 2009-2014.

Associate Editor: IEEE Transactions on Systems, Man, & Cybernetics: Systems, 2013-2016.