**Approved by the Regents**
**May 20, 2021**

PROMOTION RECOMMENDATION
The University of Michigan-Dearborn
College of Engineering and Computer Science

Mengqi Wang, assistant professor of electrical and computer engineering, Department of Electrical and Computer Engineering, College of Engineering and Computer Science, is recommended for promotion to associate professor of electrical and computing engineering, with tenure, College of Engineering and Computer Science.

Academic Degrees:

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| Ph.D. | 2014 | Electrical Engineering , North Carolina State University, Raleigh, NC |
| B.S. | 2009 | Electrical Engineering, Xi'an Jiaotong University, PRC |

Professional Record:

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| 2015 – present | Assistant Professor, Department of Electrical and Computer Engineering, College of Engineering and Computer Science, University of Michigan-Dearborn |
| 2015 | Lecturer, Department of Electrical and Computer Engineering, College of Engineering and Computer Science, University of Michigan-Dearborn |
| 2009 – 2014 | Research assistant, NSF FREEDM Systems Center, North Carolina State University, Raleigh, NC |

Summary of Evaluation:

Teaching: Professor Wang has taught six different ECE courses in both the undergraduate and graduate programs. She substantially redesigned and updated one course and its lab manual (ECE305), and the lab manual for another course (ECE311). Professor Wang's student teaching evaluations are very good, averaging 4.2 /5.0 (weighted per number of students per course). She has advised 26 undergraduate students through seven senior design projects, three undergraduate students in guided study, four master's students in guided study, and is serving as the advisor for two master's thesis students, and four Ph.D. students. She has also mentored two post-doctoral fellows and four visiting scholars.

Research: Professor Wang has published 20 journal papers and 21 conference papers while at UM-Dearborn since 2015. She has been active in writing research proposals and has received nine externally funded grants and contracts as a PI for a total of $757,886. Professor Wang was a co-PI on four grants for a total of $2,811,896. Of this amount, her direct share is around $336,233. She has also received three internally funded projects, all of which as the PI, totaling $99,500, and served as a senior personnel on an NSF REU site award ($360k). Her overall research program is trending upwards and we have great expectations that she will continue to develop a significant power electronics program for the College.

Recent and Significant Publications:

Guanliang Liu, Mengqi Wang, Weiyang Zhou, Qunfang Wu and Yongsheng Fu, "A Sensorless Current Balance Control Method for Interleaved Boost Converters Based on Output Voltage Ripple," *IEEE Transactions on Power Electronics*, Early Access, 2020.

Bowen Zhang, Mengqi Wang and Wencong Su, "Reliability Analysis of Power Systems Integrated with High-Penetration of Power Converters," *IEEE Transactions on Power Systems*, Early Access, 2020.

Paul Gistain Ipoum-Ngome, Daniel Legrand Mon-Nzongo, Rodolfo C.C. Flesch, Joseph Song-Manguelle, Mengqi Wang and Tao Jin,"Model-free Predictive Current Control for Multilevel Voltage Source Inverters," *IEEE Transactions on Industrial Electronics*, Early Access, 2020.

Weiyang Zhou, Mengqi Wang, Qunfang Wu, Xi Lu, Kewei Xiao, Krishna Bhat and Chingchi Chen, "Accelerated Life Testing Method of Metallized Film Capacitors for Inverter Applications," *IEEE Transactions on Transportation Electrification*, Early Access, 2020.

Qunfang Wu, Mengqi Wang, Weiyang Zhou, Xi Lu, Kewei Xiao, Krishna Bhat and Chingchi Chen, "Traction Inverter Highly Accelerated Life Testing with High-Temperature Stress," *IEEE Transactions on Transportation Electrification*, Early Access, 2020.

Weiyang Zhou, Mengqi Wang and Qunfang Wu, "A Model Based Monitoring Method for Offline Accelerated Testing of DC-Link Capacitor in Three-Phase Inverter systems," *IEEE Transactions on Power Electronics*, vol. 36, no. 1, pp. 61-67, 2020.

Fangyuan Chang, Xiaofan Cui, Mengqi Wang, Wencong Su and Alex Q. Huang, "Large-Signal Stability Criteria in DC Power Grids with Distributed-Controlled Converters and Constant Power Loads," *IEEE Transactions on Smart Grid*, vol. 11, no. 6, pp. 5273-5287, 2020.

Qiujie Wang, Tao Jin and Mengqi Wang, "A Hierarchical Minimum Hitting Set Calculation Method for Multiple Multiphase Faults in Power Distribution Networks," *IEEE Transactions on Industrial Electronics*, vol. 68, no. 1, pp. 4-14, 2020.

Qunfang Wu, Mengqi Wang, Weiyang Zhou and Xiaoming Wang, "Current Balancing of Paralleled SiC MOSFETs for a Resonant Pulsed Power Converter," *IEEE Transactions on Power Electronics*, vol. 35, no. 6, pp. 5557-5561, 2019.

Tao Jin, Jintao Guo, Mohamed A. Mohamed and Mengqi Wang, "A Novel Model Predictive Control via Optimized Vector Selection Method for Common-Mode Voltage Reduction of Three-Phase Inverters," *IEEE Access*, vol. 7, pp. 95351-95363, 2019.

Taehyung Kim, Mengqi Wang and Wencong Su, "Time-Sharing Duty Cycle-Based Concurrent Control for a Triple-Output Converter with Energy Storage," *IEEE Access*, vol. 7, pp. 182433-182443, 2019.

Qunfang Wu, Mengqi Wang, Weiyang Zhou, Xiaoming Wang, Guanliang Liu and Changqi You, "Analytical Switching Model of a 1200V SiC MOSFET in a High-Frequency Series Resonant Pulsed Power Converter for Plasma Generation," *IEEE Access*, vol. 7, pp. 99622-99632, 2019.

Paul Gistain Ipoum-Ngome, Daniel Legrand Mon-Nzongo, Rodolfo C.C. Flesch, Joseph Song-Manguelle, Mengqi Wang and Tao Jin, "Model predictive current control based on a generalised adjacent voltage vectors approach for multilevel inverters," *IET Power Electronics*, vol. 12, no. 3, pp. 3590-3599, 2019.

Ramakrishnan Raja, Tomy Sebastian and Mengqi Wang, "Online Stator Inductance Estimation for Permanent Magnet Motors Using PWM Excitation." *IEEE Transactions on Transportation Electrification*, vol. 5, no. 1, pp. 107-117, 2019.

Service: Professor Wang has either served or is serving on numerous on-campus committees, including three college and three department level committees. Professor Wang has served as a session chair on four occasions, served on a proposal review panel, and frequently serves as a reviewer for journals.

External Reviewers:

Reviewer A: "I would consider Dr. Wang is definitely a rising star in the power electronics field comparing with her peers."

Reviewer B: "The extraordinary levels of Dr. Wang's past and present grants and contracts speak a volume about the importance and value of her research work."

Reviewer C: "Dr. Wang has a well-developed research profile for a scholar in her career stage. She is clearly making valuable contributions in teaching, research, and service, and it appears she will continue on this trajectory."

Reviewer D: "With proven capability in conducting and supervising research as well as a promising research direction, I have no doubt of her continuous success in future years after being tenured."

Reviewer E: "Her strong publication record in high ranking journals, strong industry and government projects, and good teaching record would be more than enough to qualify her for promotion."

Reviewer F: "Based on the above observations it can be said that Dr. Wang has built a strong research program and has brought significant excitement and expertise to the education program at the University of Michigan-Dearborn."

Summary of Recommendation:
Professor Wang has had an extraordinary start in the College of Computer Science and Engineering. Her research ranks her among the best of our young faculty. She has also proven to be a dedicated teacher, devoting hours of extra work to spend time with student teams and developing courses in the electrical engineering programs. She has also served the professional community in the areas of publishing, reviewing, and assisting with professional events such as seminars and conferences. We are pleased to recommend, with support of the College of Engineering and Computer Science Executive Committee, Mengqi Wang for promotion to associate professor of electrical and computer engineering, with tenure, Department of Department of Electrical and Computer Engineering, College of Engineering and Computer Science.

Ghassan Kridli, Interim Dean
College of Engineering and Computer Science

Domenico Grasso, Chancellor
University of Michigan-Dearborn

May 2021