Approved by the Regents
May 17, 2007

PROMOTION RECOMMENDATION

The University of Michigan-Dearborn
College of Engineering and Computer Science
Department of Electrical and Computer Engineering

Chunting (Chris) Mi, assistant professor of engineering and computer science, College of Engineering and Computer Science, is recommended for promotion to associate professor of engineering and computer science, with tenure, College of Engineering and Computer Science.

Academic Degrees:

Ph.D.	2000	University of Toronto, Canada
M.S.	1988	Northwestern Polytechnical University, China
B.S.	1985	Northwestern Polytechnical University, China

Professional Record:

2002 to present	Assistant Professor, ECE Department, University of Michigan-Dearborn
2001-2002	Visiting Assistant Professor, ECE Department, University of Michigan-Dearborn

Summary of Evaluation:

Teaching: Based on personal observations, student evaluations of his teaching and direct student comments to the chair, Professor Mi is rated as an excellent teacher. Faculty acknowledge the significant contributions he has made to the graduate and undergraduate programs in electrical and automotive systems engineering, having taught several courses (graduate and undergraduate) in the electrical and automotive systems engineering curricula. One faculty member noted that students taking ECE 414 (Electronics II) and ECE 415 (Power Electronics) were well prepared, and were able to demonstrate their skills in electronic circuit design. Another faculty member noted that the students were very enthusiastic about the relatively new graduate courses on Vehicle Electronics (AE 510, ECE 515) and Electric Vehicles (ECE 546) where students (with both EE and ME backgrounds) learn design of electronic systems for vehicle applications.

Students have consistently evaluated Professor Mi as an outstanding teacher. From 2001 to 2006, he received an average score of 3.75/4.0, based on more than 200 student evaluations in several courses. Professor Mi prepares his courses with great care. He seeks advice from other faculty in the department. He understands student concerns and addresses them promptly. He is considered quite innovative and very effective in the classroom. Professor Mi has taught a number of courses in electrical and automotive systems engineering. In fact, he has been teaching a new course almost every term, since he joined ECE. He is also active in supervising senior design projects and masters' theses. In 2005 he was recognized for his outstanding teaching performance with the Distinguished Teaching Award from the campus.

Research: Professor Mi's research record is rated as excellent. During the five years that he has spent at the university he has been very active in research in the areas of power and applied vehicle electronics. His record of funding (approximately $1,000,000 in five years) is very good. His research activities have enhanced the college's research on automotive

systems and vehicle electronics. Since joining the department, Professor Mi has published twelve peer-reviewed journal papers, and nineteen refereed conference papers, spanning a period of five years. He played a key role in the establishment of the Power Electronics and Electric Drives Laboratory through gifts and grants from industry and government agencies. In summary, Professor Mi is an excellent researcher whose work is highly relevant to the mission of the department and the college.

Recent and Significant Publications:

Chunting Mi, Analytical design of permanent magnet traction drives, *IEEE Transactions on Magnetics*, vol. 42, no. 7, pp. 1861-1866, July 2006.

Yi Zhang, Chunting Mi, Bo Zhang, and Hui Lin, Performance modeling and optimization of a novel multi-mode hybrid powertrain, *Journal of Mechanical Design, Transactions of the ASME*, vol. 128, no. 1, pp. 79-89, January 2006.

Chunting Mi, Gordon R. Slemon, and Richard Bonert, Minimization of iron losses of permanent magnet synchronous machines, *IEEE Transactions on Energy Conversion*, vol. 20, no. 1, pp. 121-127, March 2005.

Chunting Mi, Hui Lin, and Yi Zhang, Iterative learning control of antilock braking of electric and hybrid vehicles, *IEEE Transactions on Vehicular Technology*, vol. 54, no. 2, pp. 486-494, March 2005.

Chunting Mi, Zheng Shen, and T. Ceccarelli, Continuing education in power electronics, *IEEE Transactions on Education*, vol. 48, no. 1, pp. 183-190, February 2005.

Service: Professor Mi's service record is rated as excellent. He was specifically advised to restrict his service activities to his professional domain. He took the chair's advice and confined his activities to IEEE and SAE. He is currently the chair of IEEE Technical Committee of Automotive Power Electronics, and director of educational activities for the IEEE-SEM section. He also served on the organizing committee on Power Electronics in Transportation. Within the department, Professor Mi has been very active in activities related to the visit of ABET in 2004. He is a lively participant in department meetings and responds very promptly and professionally to any request for information. He also serves on the Automotive Systems Engineering Program Committee that is responsible for the curriculum of that Master's degree program.

External Reviewers:

Reviewer (A)
"Dr. Mi's years of documented scientific research work in the design and development of electric motors have made him an internationally recognized outstanding researcher. [His] research and development of his analytic design technique alone has been a critical scientific and scholarly contribution to the field and has furthered his sustained preeminent international reputation as an outstanding scientific researcher."

Reviewer (B)
"The candidate has made significant, quality contributions to three major topic areas: a) provided deep knowledge in the understanding of iron losses in permanent magnet machines; b) analytic methods for the understanding of variable speed generators such as a wind generator; and c) analytic methods for the design of traction drives. His work on the iron loss

estimation has been used by many including commercially available SPEED consortium software from the University of Glasgow. I believe that within a few short years, Dr. Mi has established himself as an international authority..."

Reviewer (C)
"Dr. Mi is a pioneer in using iterative learning control in vehicle antilock braking systems. Dr. Mi has made vital contributions to the field of power electronics, electric machines and their application in hybrid vehicles and renewable energy systems. His quality work and outstanding achievements have earned him international reputation."

Reviewer (D)
"Dr. Mi's publications have ranged from motors, power electronics, hybrid vehicles and renewable energy systems. In the past five years, I have seen his name on twelve transactions papers and more than ten conferences papers in the top-notch journals and refereed conferences in the world. Quality is what I can describe about all of his publications."

Reviewer (E)
"In the field of hybrid vehicles, [he] is known for his work in the area of modeling and simulation of hybrid vehicles. In fact, I recently...invited [him] to contribute a paper. In another paper...Dr. Mi and his co-authors presented a systematic model for the simulation and optimization of a novel multi-mode power train. The novel hybrid power train and modeling results are very impressive."

Reviewer (F)
"I have looked through his publication record and find it to be solid. His papers show a great degree of creativity, supported by thorough analytical and simulation results. His research is in a field where he will be able to make substantial and original contributions. As a service to his profession, he has been very active in IEEE."

Summary of Recommendation:
Professor Mi is an excellent teacher and an excellent researcher. His record of external funding is impressive for faculty members of his generation. His active participation in professional societies and conferences is a good indicator of his sustained interest in research and instruction. His commitment to teaching and his dedication to funded research make him deserving of this promotion. We are very pleased to recommend, with the strong support of the College of Engineering and Computer Science Executive Committee, Chunting (Chris) Mi for promotion to associate professor of engineering and computer science, with tenure, College of Engineering and Computer Science.

Subrata Sengupta
Dean
College of Engineering and Computer Science

Daniel Little
Chancellor
University of Michigan-Dearborn

May 2007