PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering

Approved by the Regents
May 20, 2010

Kevin P. Pipe, assistant professor of mechanical engineering, Department of Mechanical Engineering, and assistant professor of electrical engineering and computer science, Department of Electrical Engineering and Computer Science, College of Engineering, is recommended for promotion to associate professor of mechanical engineering, with tenure, Department of Mechanical Engineering, and associate professor of electrical engineering and computer science, without tenure, Department of Electrical Engineering and Computer Science, College of Engineering.

Academic Degrees:

Ph.D.	2004	Massachusetts Institute of Technology, Electrical Engineering, Cambridge, MA
M.Eng.	1999	Massachusetts Institute of Technology, Electrical Engineering and Computer Science, Cambridge, MA
S.B.	1999	Massachusetts Institute of Technology, Electrical Engineering and Computer Science, Cambridge, MA

Professional Record:

2005-present	Assistant Professor, Department of Electrical Engineering and Computer Science, University of Michigan
2004-present	Assistant Professor, Department of Mechanical Engineering, University of Michigan

Summary of Evaluation:

Teaching: Professor Pipe has demonstrated that he is an excellent educator, through his classroom teaching and student mentoring/advising activities. He has taught two required undergraduate classes (ME235 Thermodynamics I, ME495 Lab II) and a graduate level class (ME631 Statistical Thermodynamics). With Professor Pipe's expertise in electronic devices, he has brought new concepts into our thermal science classes, extended the topics of traditional thermodynamics and greatly inspired our students. His teaching evaluations at both the undergraduate and graduate levels are high, demonstrating that he is a dedicated and successful instructor. In addition to being an effective teacher in the classroom, Professor Pipe has also been a wonderful mentor outside the classroom. He is always available to talk to undergraduate students, advising them about their careers and motivating them to consider graduate school. As an educator, Professor Pipe has also made contributions toward improving diversity by advising female and underrepresented minority students through the UROP program. Professor Pipe's advising of graduate students is exceptional. He has graduated three Ph.D. students and is currently advising or co-advising eleven more. His graduate students have been publishing with him in high-impact peer-reviewed journals, and two of his Ph.D. students are pursuing academic careers at peer institutions.

Research: Professor Pipe has developed a truly outstanding research record. His doctoral research is on the topic of heat exchange in inorganic electronic devices. Since joining Michigan, he has studied thermal energy conversion in electronic devices for energy harvesting and micro-scale thermal management, where he has made fundamental contributions that are well recognized by his peers. Professor Pipe has also branched out into the new area of organic devices, studying efficient light/electrical conversion for solid-state lighting and photovoltaics. Professor Pipe has developed an extraordinary publication record with seminal papers on thermal profiling and heat exchange in semiconductor laser diodes that are praised by the external references. Professor Pipe is the PI of a $6.8M

Multidisciplinary University Research Initiative (MURI) project. It is exceptional for a junior faculty member to undertake such a significant research leadership role in winning a highly competitive large-scale multidisciplinary program. Because of his outstanding research achievement and potential, Professor Pipe was recently recognized with the prestigious DARPA Young Faculty Award.

Recent and Significant Publications:

A. Yadav, K. P. Pipe, W. Ye, and R. S. Goldman, "Thermoelectric properties of quantum dot chains," *Journal of Applied Physics*, 105, 093711 (2009).

K. H. An, B. O'Connor, K. P. Pipe, and M. Shtein, "Organic photodetector with spectral response tunable across the visible spectrum by means of internal optical microcavity," *Organic Electronics*, 10, 1152 (2009).

A. Yadav, K. P. Pipe, and M. Shtein, "Fiber-based flexible thermoelectric power generator," *Journal of Power Sources*, 175, 909 (2008).

B. O'Connor, K. P. Pipe, and M. Shtein, "Fiber based organic photovoltaic devices," *Applied Physics Letters*, 92, 193306 (2008).

K. H. An, B. O'Connor, K. P. Pipe, Y. Zhao, and M. Shtein, "Scanning optical probe microscopy with submicrometer resolution using an organic photodetector," *Applied Physics Letters*, 93, 033311 (2008).

B. O'Connor, K. H. An, Y. Zhao, K. P. Pipe, and M. Shtein, "Fiber shaped organic light emitting device," *Advanced Materials*, 19, 3897 (2007).

Y. Zhao, K. H. An, S. Chen, B. O'Connor, K. P. Pipe, and M. Shtein, "Localized current injection and submicron organic light-emitting device on a pyramidal atomic force microscopy tip," *Nano Letters*, 7, 3645 (2007).

P. K. L. Chan, K. P. Pipe, G. Qin, and Z. Ma, "Thermoreflectance imaging of current dynamics in high power SiGe heterojunction bipolar transistors," *Applied Physics Letters*, 89, 233521 (2006).

P. K. L. Chan, K. P. Pipe, Z. Mi, J. Yang, P. Bhattacharya, and D. Lüerβen, "Thermal relaxation time and heat distribution in pulsed InGaAs quantum dot lasers," *Applied Physics Letters*, 89, 011110 (2006). Also selected for the July 24, 2006 issue of *Virtual Journal of Nanoscale Science & Technology*.

Service: Professor Pipe has been an exemplary citizen in serving the University and the professional community. Internally he has served on several very important committees such as the faculty search committee, the graduate program committee, and the GGB building project facility planning committee. He is always keen on helping the department to advance, where his service performance has been recognized and greatly appreciated by his colleagues. In addition to his internal service, Professor Pipe has also made good contributions to the professional community. The high quality work that he produces is noted and appreciated by his peers; as evidenced by his being invited to be a NSF panelist four times and being invited to several important panels and committees related to heat transfer/thermoelectricity.

External Reviewers:

Reviewer A: "….. Kevin has established a truly interdisciplinary and distinct program at UM in between optoelectronics, heat transfer, and energy conversion. He has made major contributions by developing unique polymer based devices and thermal diagnosis tools. ... He has established collaborations with several faculty members at UM, and led an interdisciplinary team to win a MURI program focusing on heat transfer at the interfaces. … It is a very impressive team with distinguished researchers. The fact that Kevin serves as the PI speaks loudly of his stature and the respect that he has deservedly earned. ... I believe that Kevin has established a unique program at the interface of Mechanical Engineering and Electrical Engineering, and has distinguished himself via excellent research."

Reviewer B: "...As an experimentalist in the field of thermal properties myself, I have to express my greatest admiration for the technical virtuosity required for the thermal/optical probe microscopy experiments. Professor Pipe teaches these skills to his graduate students, an achievement which will have a long-lasting impact the thermal sciences..."

Reviewer C: "...Through this effort, Kevin's visibility and leadership is commensurate with someone well beyond this point in his career."

Reviewer D: "He has published several seminal and important papers on thermal profiling and heat exchange in semiconductor laser diodes.....Dr. Pipe has received a level of respect that is normally achieved only by individuals well beyond his age and level of experience ... his standing in the field of microscale heat transfer is about equivalent to that of two much more mature researchers, both of whom are full tenured professors at top engineering schools."

Reviewer E: ".... I am favorably impressed with Professor Pipe's scholarly contributions and emerging role as a research leader..... He has established himself as a leader in the understanding of the exchange of energy between electrons and the lattice in semiconductor devices."

Summary of Recommendation: Professor Pipe is an excellent researcher with contributions and leadership recognized and highly praised by eminent scholars in his field. He is an educator with a strong record of student mentoring and teaching, and he is an outstanding citizen in service. It is with the support of the College of Engineering Executive Committee that I recommend Kevin P. Pipe for promotion to associate professor of mechanical engineering, with tenure, Department of Mechanical Engineering, and associate professor of electrical engineering and computer science, without tenure, Department of Electrical Engineering and Computer Science, College of Engineering.

David C. Munson, Jr.
Robert J. Vlasic Dean of Engineering
College of Engineering

May 2010