Approved by the Regents
May 17, 2018

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering
Department of Mechanical Engineering

Pramod Sangi Reddy, associate professor of mechanical engineering, with tenure, Department of Mechanical Engineering, and associate professor of materials science engineering, without tenure, Department of Materials Science and Engineering, College of Engineering, is recommended for promotion to professor of mechanical engineering, with tenure, Department of Mechanical Engineering, and professor of materials science engineering, without tenure, Department of Materials Science and Engineering, College of Engineering.

Academic Degrees:

Ph.D.	2007	University of California, Berkeley, Applied Science and Technology, Berkeley, CA
M.Tech.	2002	Indian Institute of Technology Bombay, Mechanical Engineering, Bombay, India
B.Tech.	2002	Indian Institute of Technology Bombay, Mechanical Engineering, Bombay, India

Professional Record:

2013-present	Associate Professor (with tenure), Department of Mechanical Engineering, University of Michigan
2013-present	Associate Professor (without tenure), Department of Materials Science and Engineering, University of Michigan
2010-2013	Assistant Professor, Department of Materials Science and Engineering, University of Michigan
2007-2013	Assistant Professor, Department of Mechanical Engineering, University of Michigan

Summary of Evaluation:

Teaching: Professor Reddy has taught a range of courses, from basic undergraduate to advanced graduate level in mechanical engineering. Because of his passion for education, Professor Reddy has gone above and beyond his regular teaching duty to enhance the ME curriculum. His performance in the classroom has yielded good student evaluations, as compared to those of others who taught the same class with similar class sizes. His teaching skills and efforts are highly respected and appreciated by the students, as evidenced from the student letters. In addition to being an effective classroom teacher, Professor Reddy is an excellent advisor and mentor. Since joining UM, he has graduated seven Ph.D. students, with four more currently in the pipeline. In addition, he has advised several M.S. students, some of whom have participated directly in his research projects. His strong mentorship is also demonstrated by the many high quality papers he has published with his students. From the student letters, it is clear that Professor Reddy is well respected and admired as an advisor and mentor.

Research: Professor Reddy is a renowned scholar and research leader in the field of the energy flow and conversion at the nanoscale. He has developed several new experimental techniques that allow one to probe energy transport and dissipation in a variety of nanoscale systems that include metal-molecule-metal junctions, nanowires and nanoscale gaps. He has developed a stellar research program that resulted in highly influential publications in the most prestigious journals in his field, such as *Nature*, *Science*, *Nature Nanotechnology*, among others. His research has received continuous and strong funding from a mix of sources, including NSF, DOE and DOD. He has been presenting his research findings at the important conferences in his field and has been invited to give many talks at various peer institutions. External reviewers testify that his research and publications are of extremely high quality and impact, and that he is a top researcher and leader in his field. He is the recipient of a DARPA Young Faculty Award, an NSF CAREER Award, a ME Department Faculty Achievement Award and a Young Alumni Achievement Award from IIT Bombay.

Recent and Significant Publications:

L. Cui, W. Jeong, S. Hur, M. Matt, J. C. Klockner, F. Pauly, P. Nielaba, J. C. Cuevas, E. Meyhofer, P. Reddy, "Quantized Thermal Transport in Single-Atom Junctions," *Science*, 2017.

K. Kim, B. Song, V. Fernandez, W. Lee, W. Jeong, L. Cui, D. Thompson, J. Fiest, M. T. H. Reid, F. G. Vidal, J. C. Cuevas, E. Meyhofer, P. Reddy, "Radiative Heat Transfer in the Extreme Near Field," *Nature*, 2015.

Y. Kim, W. Jeong, K. Kim, W. Lee, P. Reddy, "Electrostatic Control of Thermoelectricity in Molecular Junctions," *Nature Nanotechnology*, 2014.

W. Lee, K. Kim, W. Jeong, L. A. Zotti, F. Pauly, J. C. Cuevas, P. Reddy, "Heat Dissipation in Atomic-Scale Junctions," *Nature*, 2013.

P. Reddy, S-Y. Jang, R. A. Segalman, A. Majumdar, "Thermoelectricity in Molecular Junctions," *Science,* 2007.

Service: Professor Reddy has served on several committees for the Mechanical Engineering department. He played an active role as the chair of the ME Department Safety Committee for the last three years. He has worked diligently with the ME faculty/staff and the CoE's Safety Committee to identify labs in the department that need special facilities to safely handle their operations. He is also on the council for administering the Lurie Nanofabrication Facility and has actively participated in discussions to increase access to and use of the nanofabrication facility. It is clear that Professor Reddy is serious about enhancing the climate within the community. He has been very active in recruiting and educating women and underrepresented minorities. He has also devoted effort to outreach activities such as teaching math at an elementary school every few weeks in the evenings. Externally, he has demonstrated leadership in the technical community. He has been a symposium/session organizer for several conferences in his field. He served as a co-organizer for the triennial US-Japan *Seminar on Nanoscale Thermal Transport,* and the organizer of the *Workshop on Nanoscale Energy Transfer*. Both of these are high-profile conferences that have attracted leading experts from the U.S., Europe and Asia to discuss recent advances in nanoscale thermal radiation. He also serves as an editor for *Nanoscale and Macroscale Thermophysical Engineering* and *Scientific Reports*.

External Reviewers:
Reviewer A: "Prof. Reddy is highly respected in our community for his development of exceptionally innovative and sensitive measurement techniques. He is the best experimentalist working in our field."

Reviewer B: "I believe that Pramod is an international leader in experimental nanoscale heat and energy transport through his ground- breaking experiments."

Reviewer C: "… Professor Reddy has initiated a new research direction in the field of radiative heat transfer, and has quickly established himself as one of the leading groups in the world in the experimental measurement of near-field heat transfer."

Reviewer D: "… Dr. Reddy is one of the best faculty I know, his teaching and mentoring are superb, but perhaps most exceptional is his research …"

Reviewer E: "As far as I know, no one else in the world has Prof. Reddy's experimental abilities . . . He is an international leader in the development of novel instrumentation and has made multiple major scientific discoveries."

Reviewer F: "… I strongly believe that he is way ahead of his peers in terms of his scientific contributions, originality of thinking and steering the field in new directions."

Reviewer G: "He has developed a very precise and original line of research . . . Pramod Reddy strikes me as one of the most talented and successful researchers in his field, worldwide."

Summary of Recommendation: Professor Reddy has made excellent contributions to all areas of research, teaching and service. His exceptionally high impact research and high quality publication record has made him a leading star in his technical field, highly recognized and praised by the very top scholars in the world. He is a valuable asset to the University of Michigan. It is with the support of the College of Engineering Executive Committee that I recommend Pramod Sangi Reddy for promotion to professor of mechanical engineering, with tenure, Department of Mechanical Engineering, and professor of materials science and engineering, without tenure, Department of Materials Science and Engineering, College of Engineering.

Alec D. Gallimore, Ph.D.
Robert J. Vlasic Dean of Engineering
College of Engineering

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