Approved by the Regents
May 16, 2019

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering
Department of Electrical Engineering and Computer Science

Rebecca L. Peterson, 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 electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.

Academic Degrees:

Ph.D.	2006	Princeton University, Electrical Engineering, Princeton, NJ
M.S.	2000	University of Minnesota, Electrical Engineering, Minnesota, MN
B.S.	1996	University of Rochester, Electrical Engineering, Rochester, NY

Professional Record:

2013 – present	Assistant Professor, Department of Electrical Engineering and Computer Science, University of Michigan
2009 – 2013	Assistant Research Scientist, Department of Electrical Engineering and Computer Science, University of Michigan
2007 – 2009	Associate Lecturer in Engineering, Newnham College, University of Cambridge, Cambridge, UK
2007 – 2007	Special Supervisor in Engineering, Newnham College, University of Cambridge, Cambridge, UK
2006 – 2009	Post-Doctoral Research Associate, Department of Physics, University of Cambridge, Cambridge, UK

Summary of Evaluation:

Teaching: Professor Peterson is an outstanding educator. Since her appointment began, she has taught two undergraduate courses and two special topics courses at the graduate level. Professor Peterson is an effective classroom teacher who is very proactive in using in-class exercises and career connection activities to engage students and make the class more relevant to their interests and post-graduation aspirations. These efforts were reflected in her uniformly high teaching evaluations, with Q1 and Q2 averaging 4.45 and 4.75, respectively. Professor Peterson has graduated one Ph.D. student as a primary advisor and one as a co-chair while on the research track. She has five more Ph.D. students in the pipeline as sole advisor, and one as co-chair. Professor Peterson has supervised five M.S. students and more than 15 undergraduate research projects, including SURE and NSF REU students. She is also involved with mentoring post-doctoral scholars.

Research: Professor Peterson's expertise lies in the field of thin-film electronics, including a broad range of topics related to oxide-semiconductor materials and devices, from controlled

material growth under well-engineered ambient and chemical environments, to novel device concepts and hybrid circuit-level integration with CMOS, MEMS and other platforms. Her h-index and citation count (24 and over 2100 per Google Scholar) are strong. She has won a number of (research) awards since becoming an assistant professor, including the DARPA Young Faculty Award and NSF CAREER from sponsors, and internally, the UM Henry Russel Award in 2018. Her research program is well funded by a diverse set of funding sources (NSF, ONR, DARPA, and Intel).

Professor Peterson has published over 25 journal papers in the field's highest quality publications, with eight of those papers published with her students since her appointment as an assistant professor at the University of Michigan. She has also published over 50 refereed conference papers, with three of those associated with her as the senior author.

Recent and Significant Publications:

Y. Son and R.L. Peterson, "Exploring In Situ Redox and Diffusion of Molybdenum to Enable Thin-Film Circuitry for Low-Cost Wireless Energy Harvesting," *Advanced Functional Materials*, article published online 30 Nov 2018.

Y. Son, A. Liao, R. L. Peterson, "Effect of relative humidity and pre-annealing temperature on spin-coated zinc tin oxide film made via metal-organic decomposition route," *Journal of Materials Chemistry C*, 2017; 5: 8071-8081.

Y. Son, J. Li, R. L. Peterson, "In Situ Chemical Modification of Schottky Barrier in Solution-Processed Zinc Tin Oxide Diode," *ACS Applied Materials and Interfaces*, 2016; 8(36): 23801-23809.

W. Hu, B. Frost, R. L. Peterson, "Thermally stable yttrium–scandium oxide high-k dielectrics deposited by a solution process," *Journal of Physics D: Applied Physics*, 2016; 49(11): 115109.

W. Hu, R. L. Peterson, "Molybdenum as a contact material in zinc tin oxide thin film transistors," *Applied Physics Letters*. 2014; 104: 192105.

Service: Professor Peterson's contributions to service at the department level include serving on the Search Committee, the LNF Council, the Industrial Advisory Board of the WIMS center, the ECE Graduate Committee, and the ECE Undergraduate Curriculum Innovation Committee. Her dedication to service has been noted by all those who have served alongside her. Professor Peterson has initiated or been involved in a variety of outreach activities, including events publicizing the work done at the LNF, programs to attract children and URM groups to STEM careers, and lectures she gave and workshops she organized or participated in through the Society for Women Engineers (SWE) and the NextProf/ADVANCE programs. Within the professional society, Professor Peterson served on organizing and programming committees of key conferences in her field, numerous NSF review panels, and as a reviewer for top journals of her field.

External Reviewers:

Reviewer A: "...Becky Peterson has a stellar pedigree and outstanding set of honors and awards both during her training and in her early years as an assistant professor. She also appears to have

met if not exceeded expectations from the perspectives of teaching, service, and fundraising."

Reviewer B: "Becky is an innovative researcher, a leader, and a good role model, and I expect her to continue to do well at the University of Michigan. ... I strongly support the promotion of Rebecca L. Peterson. ... I believe she would be promoted and tenured at [my institution]..."

Reviewer C: "...Prof. Becky Peterson's case for tenure at U of M is a strong one – she has long and sustained record of academic contribution, excellent teaching credentials, an interesting and ambitious research program, a record of securing the funding to achieve her goals, and the results of that research in publications and recognition. ... At [my institution] this would be considered a straightforward and strong case for promotion..."

Reviewer D: "With her distinguished research accomplishments, especially the impressive portfolios of large research grants she secured recently, I believe Prof. Peterson would be evaluated favorably for promotion to Associate Professor with tenure with no hesitation at institutions including here at [my institution]."

Reviewer E: "...I strongly believe Prof. Peterson has made vital contributions to [sic] field of thin-film electronics, and I believe that she has shown, convincingly, the likelihood that she will continue to make such contributions...I would recommend her for tenure promotion unequivocally without hesitation."

Summary of Recommendation: Professor Peterson has demonstrated her value as a scholar, teacher, and citizen. I recommend Rebecca L. Peterson for promotion to associate professor of electrical engineering and computer science, with tenure Department of Electrical Engineering and Computer Science, College of Engineering.

Martin A. Philbert
Provost and Executive Vice President
for Academic Affairs

May 2019