

**PROMOTION RECOMMENDATION**

The University of Michigan  
College of Engineering

Joerg Lahann, assistant professor of chemical engineering, Department of Chemical Engineering, assistant professor of materials science and engineering, Department of Materials Science and Engineering, assistant professor of biomedical engineering, Department of Biomedical Engineering, and assistant professor of macromolecular science and engineering, Macromolecular Science and Engineering Program, College of Engineering, is recommended for promotion to associate professor of chemical engineering, with tenure, Department of Chemical Engineering, associate professor of materials science and engineering, without tenure, Department of Materials Science and Engineering, associate professor of biomedical engineering, without tenure, Department of Biomedical Engineering, and associate professor of macromolecular science and engineering, without tenure, Macromolecular Science and Engineering Program, College of Engineering.

Academic Degrees:

Ph.D. 1998 RWTH, Macromolecular Chemistry, Aachen, Germany  
M.S. 1995 RWTH, Chemistry, Aachen, Germany  
B.S. 1993 University of Saarland, Chemistry, Germany

Professional Record:

2005-Present Dow Corning Assistant Professor of Chemical Engineering (Endowed Professorship), Department of Chemical Engineering, University of Michigan  
2003-Present Assistant Professor, Chemical Engineering, Materials Science and Engineering, and Macromolecular Science and Engineering, University of Michigan  
2002-2003 Postdoctoral Fellow, Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA  
1999-2001 Postdoctoral Associate, Chemical Engineering, Cambridge, Massachusetts Institute of Technology, MA

Summary of Evaluation:

Teaching: Professor Lahann has demonstrated significant development as an educator and has succeeded well in teaching the large, core undergraduate courses that are a challenging undertaking in the chemical engineering department. In addition, he has developed two new graduate elective courses, one of which was also cross-listed for undergraduate enrollment. Professor Lahann's instructor evaluations have steadily improved with time. He is highly appreciated by his students. In addition to classroom education, Professor Lahann has served as an excellent mentor for ten Ph.D. students (two of whom have successfully defended their dissertation) as well as numerous masters and undergraduate students. There is no doubt that he is an excellent mentor to the graduate students.

Research: Since joining the Michigan College of Engineering in 2003, Professor Lahann's research has been noteworthy in both its productivity (40 accepted or in press publications based on work at Michigan alone) and its quality (Michigan originated work with Lahann as lead has been published in prestigious journals such as *Nature Materials*, *Proceedings of the National Academy of Sciences*, *Journal of the American Chemical Society*, and *Advanced Materials* and *Angewandte Chemie*). Professor Lahann developed novel electrospinning and CVD polymerization methods for the production of anisotropic colloids which enjoy broad application in areas of drug delivery and particle barcoding. Professor Lahann has pioneered the application of vapor phase synthesis of polymer surface coatings through chemical

vapor deposition. The polymers synthesized have reactive groups that can be further functionalized to control the adsorption of biological materials such as proteins. Professor Lahann has advanced work begun as a post-doc to create active, switchable surfaces which launched a new field of active interfacial engineering. Professor Lahann has been successful in generating funding for his work from a diverse set of sources including NSF (CAREER Award), NIH (R21) and DOD (IDEA award). Technology transfer activities based on his research findings are moving forward with the establishment of a start-up company that is in the incubation stage. Professor Lahann's research accomplishments have been recognized by his receipt of the AIChE Nanoscale Science and Engineering Forum Young Investigator Award (2007) and his selection as a Finalist in the 2006 NIH Director's Pioneer Award competition.

#### Recent and Significant Publications:

- X. Jiang, H.-Y. Chen, G. Galvan, M. Yoshida, J. Lahann, "Vapor-based initiator coatings for atom transfer radical polymerization," *Advanced Functional Materials*, 18(1), pp. 27-35, 2008.
- P. Podsiadlo, A.K. Kaushik, E.M. Arruda, A.M. Waas, B.S. Shim, J. Xu, H. Nandivada, B.G. Pumplin, J. Lahann, A. Ramamoorthy, N.A. Kotov, "Ultrastrong and stiff layered polymer nanocomposites," *Science*, 318 (5847), pp. 80-83, 2007.
- S. Thévenet, H.-Y. Chen, J. Lahann, F. Stellacci, "A generic approach towards nanostructured surfaces based on Supramolecular NanoStamping on reactive polymer coatings," *Advanced Materials*, 19(24), pp. 4333-4337, 2007.
- P. Katira, A. Agarwal, T. Fischer, H.Y. Chen, X. Jiang, J. Lahann, H. Hess, "Quantifying the performance of protein-resisting surfaces at ultra-low protein coverages using kinesin motor proteins as probes," *Advanced Materials*, 19(20), pp. 3171-3176, 2007 (invited paper).
- H.Y. Chen, J. Lahann, "Vapor-Assisted Micropatterning in Replica Structures: A Solventless Approach towards Topologically and Chemically Designable Surfaces," *Advanced Materials*, 19(22), pp. 3801-3808, 2007.

Service: Professor Joerg Lahann has been a faculty member for a relatively short time (since fall of 2003) but he has already made an impressive range of service contributions both within the University of Michigan as well as beyond. Within the University of Michigan, he has served on over seven committees to recruit faculty, to make strategic plans for the college, and to shape undergraduate education in the department. He has also organized the annual Macromolecular Symposium. Professor Lahann has also been an active and enthusiastic participant in various outreach programs. He has been the ChE faculty advisor for the DAPCEP Program (Detroit Area Pre-College Engineering Program), and has been a mentor in the NASA SHARP program, to encourage under-represented high school students nation-wide for careers in science and engineering. Beyond the University of Michigan, Professor Lahann has served as organizer for symposia at national meetings of the Materials Research Society and the American Institute of Chemical Engineers. Being well known for his research excellence, he has also served as reviewer for a wide range of high impact research journals as well as for various funding agencies. Professor Lahann's technology transfer activities are also notable. He has co-founded a VC-backed start up company as well as served as a consultant for other companies. His contributions to society go beyond the lab and classroom.

#### External Reviewers:

Reviewer A: "... the recent paper in PNAS ... is wonderful as it allows tagging of particles and colloids (assigning addresses) and this will open up enormous opportunities for nano-assays and technology. Very impressive."

Reviewer B: "There is little doubt that Dr. Lahann is highly regarded by his peers, and I would easily rank him in the top five percent of researchers in the field on Chemical Engineering."

Reviewer C: "Few faculty at his stage have achieved the number of high caliber works/publications. ... I would expect him to be tenured at my institution and fully recommend him for promotion and tenure at Michigan."

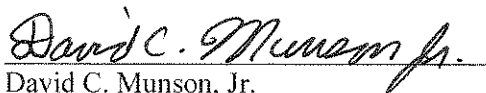
Reviewer D: "His versatile chemical synthesis based modification of surfaces and colloids makes him unique among chemical engineering faculty at his stage."

Reviewer E: "My overall impression of Prof. Lahann's package is that this is an energetic, creative scientist [of his cohort] who hit the ground running and continues to be very productive and innovative."

Reviewer F: "This is a very clear case with no weakness whatsoever. Joerg is among the most innovative and promising [junior] faculty in Chemical Engineering and among the most deserving candidate of receiving tenure."

Reviewer G: "I've worked in the fields of microtechnology and drug delivery for over 13 years and have had significant exposure to academic and industrial researchers in these fields at technical meetings and in collaborations. Based on this experience, I place Prof. Lahann in the top 5% of researchers working in his field."

Summary of recommendation: There is no doubt that Professor Lahann is one of the most impressive junior researchers in the College of Engineering. He has won a series of selective research awards, including a "top young innovator" award offered by Technology Review. He has demonstrated a strong commitment to students and has earned their respect as someone who cares about them and their learning. His service level has been appropriate and he exhibits a strong commitment to both diversity and excellence. It is with the support of the College of Engineering Executive Committee that I recommend Joerg Lahann for promotion to associate professor of chemical engineering, with tenure, Department of Chemical Engineering, associate professor of materials science and engineering, without tenure, Department of Materials Science and Engineering, associate professor of biomedical engineering, without tenure, Department of Biomedical Engineering, and associate professor of macromolecular science and engineering, without tenure, Macromolecular Science and Engineering Program, College of Engineering.



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

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