

PROMOTION RECOMMENDATION
The University of Michigan
College of Literature, Science, and the Arts

Stephen Maldonado, assistant professor of chemistry, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of chemistry, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2006	University of Texas at Austin
B.S.	2001	University of Iowa

Professional Record:

2008 – present	Assistant Professor, Department of Chemistry, University of Michigan
2006 – 2008	Post-doctoral Fellow, California Institute of Technology

Summary of Evaluation:

Teaching – Professor Maldonado is a dedicated teacher and research mentor to undergraduate and graduate students. He has received excellent evaluations from students at all levels. His students are engaged and appreciate his strong commitment to excellence in classroom teaching. Professor Maldonado includes real-world examples in his classroom teaching and provides students with outstanding research experiences in his laboratory. He has mentored twelve undergraduates and included them as authors on ten manuscripts. Many of them have gone on to graduate work in science. He has graduated two doctoral students and currently has eight working in his laboratory.

Research – Professor Maldonado has gained international recognition as an expert in electro-chemistry, which lies at the intersection of analytical chemistry, inorganic chemistry, and materials chemistry. His research extends from fundamental materials synthesis and surface chemistry to device fabrication and characterization; he is particularly known for the development and characterization of novel semiconductor materials. Professor Maldonado has published numerous papers in high-quality, high-impact journals. The publication rate and quality of the publications are excellent. He has given 54 talks since arriving at Michigan and received many prestigious awards. He has also received significant funding from the Department of Energy and the National Science Foundation in addition to smaller grants.

Recent and Significant Publications:

- “Electrodeposition of crystalline GaAs on liquid gallium electrodes in aqueous electrolytes,” with E. Fahrenkrug and J. Gu, *Journal of the American Chemical Society*, 135, 2013, pp. 330-339.
- “Direct electrodeposition of crystalline silicon at low temperatures,” with J. Gu and E. Fahrenkrug, *Journal of the American Chemical Society*, 135, 2013, pp. 16884-16887.
- “Dye-sensitized photocathodes: Efficient light-stimulated hole injection into p-GaP under depletion conditions,” with M. J. Chitambar, et al., *Journal of the American Chemical Society*, 134, 2012, pp. 10670-10681.

“Benchtop electrochemical liquid-liquid-solid growth of nanostructured crystalline germanium,” with A. Carim, et al., *Journal of the American Chemical Society*, 2011, 133, pp. 13292-13295.

Service – Professor Maldonado has made substantial contributions to the Department of Chemistry in graduate student recruiting, admissions and mentoring, and faculty recruiting. At the university level he has been the representative on the State of Michigan Green Chemistry Roundtable group. In the broader community he holds important offices in the Detroit Chapter of the Electrochemical Society and the Society for Electroanalytical Chemistry.

External Reviewers:

Reviewer (A)

“Although I have not met Prof. Maldonado personally, I am impressed by the quality of his scholarship. ...Maldonado is on an excellent trajectory for success. He has developed a productive and exciting research program... His publication rate is very good and his work is published in top journals in the field...”

Reviewer (B)

“I would like to state up front that there is no question in my mind...that Prof. Maldonado is incredibly productive, creative, and highly deserving of tenure and promotion. ...I am very impressed with Prof. Maldonado’s record – he really is spectacular, and I strongly support promoting him with tenure. There is no question that he is highly deserving.”

Reviewer (C)

“The criterion for tenure at [my institution]...is ‘to change the way we think about chemistry.’ Maldonado’s demonstration of room temperature aqueous synthesis of Ge and Si nanoparticles is a discovery that meets this standard. ... Very rarely do I see a case as clear cut as this one.”

Reviewer (D)

“In your letter you questioned whether any of Professor Maldonado’s articles rank as the most significant in his field. The formation of crystalline germanium and silicon in a new process dubbed electrochemical liquid-liquid-solid (ec-LLS) growth is just such an achievement. ... I would rank Professor Maldonado’s case among the top 10% of those individuals who were ultimately recommended for promotion and tenure. He is a remarkably strong candidate, and I support his promotion with tenure without reservation.”

Reviewer (E)

“He is also on par with the very best people we’ve hired here at [my institution]... His work has the potential to be a game-changer... In the most competitive areas of chemical science there are a handful of leaders, a sizable number of fast followers, and a very small number of true trailblazers. Stephen appears to fall in the third category. He is an unusually original thinker.”

Reviewer (F)

“... Maldonado has compiled an outstanding track record of scholarship and publication, as well as shown creativity and depth. His track record to date clearly warrants promotion to tenure...I believe that it is appropriate and a potentially helpful strategy to keep him happy at Michigan.”

Reviewer (G)

"Maldonado's research resume is exceedingly strong – training under a series of superb mentors, strong national visibility as attested by a string of seminars at very strong institutions, and current Dreyfus, Sloan, NSF and DOE grant awards. I note over 20 independent publications at Michigan, mostly in very strongly reviewed journals. The bare facts of his record almost suffice alone to label...[him] as a coming academic research star. ... His record shows a strong interest and capacity for teaching, at multiple levels..."

Reviewer (H)

"Steve is now directing one of the most innovative research programs in the area of electro-chemistry world-wide. ... His published work is excellent, exciting, and scholarly. You have every reason to be delighted with his achievement."

Summary of Recommendation:

Professor Maldonado's research has led to transformational discoveries. He is an excellent teacher and citizen. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Stephen Maldonado be promoted to the rank of associate professor of chemistry, with tenure, College of Literature, Science, and the Arts.

A handwritten signature in cursive script, reading "Susan Gelman", with a long horizontal flourish extending to the right.

Susan A. Gelman
Heinz Werner Distinguished University Professor,
Professor of Psychology and Interim Dean,
College of Literature, Science, and the Arts

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