

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

Ayyalusamy Ramamoorthy, associate professor of chemistry with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of chemistry, with tenure, College of Literature, Science and the Arts.

Academic Degrees:

Ph.D.	1989	Indian Institute of Technology
M.Sc.	1984	Madurai Kamaraj University
B.Sc.	1982	Madurai Kamaraj University

Professional Record:

2002 – present	Associate Professor, Department of Chemistry, University of Michigan
2002 – present	Associate Research Scientist, Biophysics Research Division, University of Michigan
1996 – 2002	Assistant Professor, Department of Chemistry, University of Michigan
1996 – 2002	Assistant Research Scientist, Biophysics Research Division, University of Michigan
2005	Visiting Professor, Institute for Protein Research, Osaka University
1998	Visiting Scientist, National Institutes of Health
1993 – 1996	Research Associate, Department of Chemistry, University of Pennsylvania
1992 – 1993	Scientist, Biometrology Laboratory, JEOL Limited, Japan
1989 – 1992	Fellow Scientist, Central Leather Research Institute, India

Summary of Evaluations:

Teaching – Professor Ramamoorthy is a dedicated teacher and research mentor. He has been actively involved in developing a new course to teach key concepts of physics and physical chemistry as part of the new undergraduate program in Biophysics. Student evaluations are very good. He is committed to the mentoring of students in his research laboratory, where he has worked with nine graduate and twelve undergraduate students.

Research – Professor Ramamoorthy has gained recognition as an expert in membrane biophysics and solid state Nuclear Magnetic Resonance (NMR) methods. His peers rank him among the best in the world, and view him as a leader in the development of solid state NMR methods. He is very productive, publishing 56 research articles as an associate professor.

Recent and Significant Publications:

- “Ultrastrong and stiff layered polymer nanocomposites,” with P. Podsiadlo, et al., *Science*, 318, 2007, pp. 80-83.
- “Solid-state NMR reveals structural and dynamical properties of a membrane-anchored electron-carrier protein, cytochrome b(5),” with U. H. Dürr, et al., *Journal of the American Chemical Society*, 129, 2007, pp. 6670-6671.
- “Broadband-PISEMA solid-state NMR spectroscopy,” with K. Yamamoto and D. K. Lee, *Chemical Physics Letters*, 407, pp. 289-293.

“Perturbation of the hydrophobic core of lipid bilayers by the human antimicrobial peptide LL-37,” with K. a. Henzler-Wildman, et al., *Biochemistry*, 43, 2004, p. 8459-8469.

Service – Professor Ramamoorthy has played a significant role in developing the curriculum for a new biophysics undergraduate major. Nationally, he has served as a member on several National Institutes of Health and National Science Foundation grant review panels, as well as organizing multiple research symposia.

External Reviews:

Reviewer (A)

“Ramamoorthy is known [as] a world leader in the application of solid state NMR methods to the study of membrane bound proteins and peptides and their biophysics. ... In addition to his first class research program, Ramamoorthy has been quite active in serving the NMR community as an organizer of biological solids NMR meetings, and editor of specialist review books.”

Reviewer (B)

“Ram is a prolific writer and is averaging ten papers per year. His grant-support is excellent. He is highly visible in the NMR community and appears frequently as an invited speaker at national and international meetings. His teaching includes many different types of courses and demonstrates innovation and inclusiveness. ... He is certain to have a long and distinguished career.”

Reviewer (C)

“His expertise in ... [solid-state NMR spectroscopy] is exceptionally high, and he developed one of the primary spectroscopic tools used now by many groups.... He is very productive...well-funded, his work is well-cited...he does a good job in teaching and outreach, is very well respected, and is an international leader in NMR studies of membrane structure, as well as in solid-state NMR spectroscopy in general.”

Reviewer (D)

“His background and his interests are quite broad. He perfectly understands the quantum mechanics theories behind NMR and he has a very good understanding of the principles of molecular biology. ... a promotion of Professor Ramamoorthy is not only justified but is a must...”

Reviewer (E)

“Dr. Ramamoorthy is a hard working, productive and original scientist. ... He has contributed to the field at many levels including applications of solid-state methods to systems of biological importance, methodological improvements in performing these studies and theoretical formations that could be applied to the analysis of such data. ... Dr. Ramamoorthy has been a leader in organizing the membrane biophysics community in the Michigan area...”

Reviewer (F)

“He has a very high standing in the scientific community, his contributions to the scientific literature highly valued and his service to the community is extensive.”

Reviewer (G)

“Ramamoorthy has become world-famous in the NMR field when he developed (and later ameliorated) the first multidimensional high-resolution solid-state NMR experiment for oriented membrane polypeptides. ...his merits are not limited to technical innovation but also to applying these tools to investigate membrane peptides and proteins... He has, for example, developed new concepts which have helped the scientific community to understand how antimicrobial peptides function.”

Reviewer (H)

“...only a few groups around the world are studying such systems [membrane-bound peptides] using solid state NMR. Among them, Prof. Ramamoorthy is one of the experts. I would not hesitate to compare him to the leaders in the field... There is no doubt that he deserves this promotion and I am confident that he would get it in [my institute] or other leading institutions worldwide.”

Summary of Recommendation:

Professor Ramamoorthy has excelled in teaching, service, and research. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Ayyalusamy Ramamoorthy be promoted to the rank of professor of chemistry, with tenure, in the College of Literature, Science, and the Arts.



Terrence J. McDonald
Arthur F. Thurnau Professor,
Professor of History, and Dean
College of Literature, Science, and the Arts

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