Approved by the Regents
May 20, 2010

PROMOTION RECOMMENDATION
The University of Michigan-Dearborn
College of Arts, Sciences, and Letters
Department of Natural Sciences

Krisanu Bandyopadhyay, assistant professor of chemistry, Department of Natural Sciences, College of Arts, Sciences, and Letters, is recommended for promotion to associate professor of chemistry, with tenure, Department of Natural Sciences, College of Arts, Sciences, and Letters.

Academic Degrees

Ph.D. 1999	National Chemical Laboratory, Pune, India Research Preceptor: Dr. Prof. K. Vijayamohanan
M.S. 1992	University of Calcutta, Calcutta, India
B.S. 1990	University of Calcutta, Calcutta, India

Professional Record

2005 – Present	Assistant Professor, Department of Natural Sciences, University of Michigan-Dearborn
2003 – 2005	Postdoctoral Fellow, Keck Graduate Institute of Applied Life Sciences, Claremont, California, and Harvey Mudd College, Claremont, California
2000 – 2002	Scientist, GE Global Corporate Research and Development, GE India Technology Center, Polymer and Synthetic Material Group, Bangalore, India
1998 – 2000	Teaching Postdoctoral Fellow, Department of Chemistry, University of Miami, Miami, Florida

Summary of Evaluation:

Teaching: Professor Bandyopadhyay's teaching is rated excellent. In recognition of his excellence in teaching he was awarded the University of Michigan-Dearborn Distinguished Teaching Award (untenured category) in 2009. He has taught a variety of courses, ranging from introductory chemistry lecture, with enrollment exceeding 100 students, to upper-level courses in chemistry and engineering. He has taught courses in general chemistry (lecture, laboratory and recitation) and physical chemistry (lecture, laboratory, and recitation) and received outstanding evaluations by students. In addition, he has developed a new course, Nano-Biotechnology, and has also taught a course in the College of Engineering and Computer Science (CECS). Of special note is his development and inclusion of several innovative research-like experiences in the upper level physical chemistry laboratory course. Professor Bandyopadhyay is currently collaborating with CECS faculty to create a minor in nanotechnology. He has revitalized and brought a new excitement to the chemistry discipline. The students adore him and hold his teaching in the highest regard.

Research: Professor Bandyopadhyay's research is rated excellent. His research in the area of nanoparticle assembly is cutting edge research that may have applicability in fields as diverse as engineering and biology. One of the hallmarks of his research has been active mentoring and involvement of undergraduates. During the past four years he has mentored 26 undergraduate students; many of them have been co-authors on peer-reviewed publications. Of particular note is his inclusion of undergraduate research students from chemistry, biochemistry, microbiology, electrical engineering, and physics. It is noteworthy that three of his former students are

currently pursuing Ph.D. degrees in chemistry. He has established research collaborations with faculty in CECS as well as with faculty at other institutions. His research has been funded by the National Science Foundation, the American Chemical Society Petroleum Research Fund, Office of the Vice President for Research, Rackham, and UM-Dearborn campus grants. He is actively engaged in writing grants and has been a PI or co-PI on grants totaling more than $600,000 that have resulted in improved research instrumentation and research support. Professor Bandyopadhyay and his undergraduate research students have given 31 presentations in the last four years at regional and national meetings of the American Chemical Society, at the Argonne National Laboratory, and at meetings of undergraduate research conferences such as the Michigan Undergraduate Research Forum in Lansing and the Meeting of Minds. He has been invited to give presentations of his research at Wayne State University and at the prestigious Gordon Research Conference.

Recent and Significant Publications

M. Khalid, N. Wasio, T. Chase and K. Bandyopadhyay, "In situ Generation of Two Dimensional Au-Pt Core-Shell Nanoparticle Assemblies," *Nanoscale Research Letters*, 2009 (in press).

M. Khalid, I. Pala, N. Wasio, and K. Bandyopadhyay, "Functionalized Surfaces as Templates for in situ Generation of Two-dimensional Metal Nanoparticle assembly," *Colloids and Surfaces A: Physicochem. Eng. Aspects,* 2009, 348, 263.

A. Niemz, K. Bandyopadhyay, E. Tan, K. Cha, S. and M. Baker, "Fabrication of Nanoporous Templates from Diblock Copolymer Thin Films on Alkylchlorosilane- Neutralized Surfaces," *Langmuir*, 2006, 22, 11092.

K. Bandyopadhyay, E. Tan, L. Ho, S. Bundick, S. M. Baker, and A. Niemz, "Deposition of DNA-functionalized Gold Nanospheres into Nanoporous Surfaces," *Langmuir*, 2006, 22, 4978.

(undergraduate student co-authors are underlined)

Service: Professor Bandyopadhyay's service is rated excellent. He has provided an exemplary service to the Department and the College as well as to his profession. Under his leadership as the chair of the Natural Sciences' Colloquium Committee, the department has witnessed many exciting presentations by experts in current areas of active research. He was elected Member-at-Large to the Department Executive Committee in 2008. His collegiality and insightful contributions are highly valued by the committee. He has served on several faculty search committees and the chairs of those committees offered high praise for his thoughtful questions to potential candidates and for his assistance throughout the search process. He has served with distinction as a member of several department committees including the Science Learning Center Advisory Committee. He has also served many times as department faculty secretary. Currently, he serves the college as a member of the Distance Learning Advisory Committee, and he serves his profession as a reviewer for *Environmental Technology*. This is truly an exceptional level of service.

External Reviewers:

Reviewer A: "... I do believe his productivity over the past four years to be exceptional, particularly considering the heavy teaching load and the fact that undergraduate researchers have less time and less experience to devote to the projects. ... The use of self assembled monolayers (SAMs) as a template for nucleation of nanoparticles...is a novel approach."

Reviewer B: "…I find Professor Bandyopadhyay's scholarly work to be cutting-edge research that capitalizes on his expertise and both broadens his impact as well as provides new avenues for student engagement. ….The fabrication of highly uniform nanostructures on solid surfaces will have tremendous impact in a variety of applications."

Reviewer C: "He has established that his ideas are well thought out and able to withstand the intense scrutiny of external peer-review. …In summary, this is clearly a very active and accomplished chemist. He has clearly established a strong trajectory that makes it easy to envision a long, productive career."

Reviewer D: "…he clearly is an expert on the synthesis of nanoparticles and their characterization techniques. …I am quite impressed with the breadth of expertise and interests that Dr. Bandyopadhyay brings to his research. …His work is of high scholarly quality – both well written and potentially of high impact."

Reviewer E: "Dr. Bandyopadhyay has made significant scholarly contributions given the constraints of teaching three courses per semester and working 100% with undergraduate researchers."

Reviewer F: "The quality and originality of the publications definitely reflect the innovative nature of Dr. Bandyopadhyay."

Reviewer G: "This [Langmuir, 2006] is a *tour de force* of applied nanoscale patterning with solid surface science to back its conclusions regarding use of the nanometer-dimensioned pores as reaction containers."

Summary of Recommendation

Professor Bandyopadhyay is a highly valued member of the Department of Natural Sciences. He is an outstanding scholar and a gifted teacher. He is a leader in the field of nanotechnology and has reinvigorated the chemistry discipline. His service to the university is exemplary. We are very pleased to recommend, with the strong support of the College of Arts, Sciences, and Letters Executive Committee, Krisanu Bandyopadhyay for promotion to associate professor of chemistry, with tenure, Department of Natural Sciences, College of Arts, Sciences, and Letters.

Kathryn Anderson-Levitt
Dean
College of Arts, Sciences, and Letters

Daniel Little
Chancellor
University of Michigan-Dearborn

May 2010