THE INSTITUTE FOR MOLECULAR ENGINEERING

THE UNIVERSITY OF CHICAGO

Paul Nealey

BRADY W. DOUGAN PROFESSOR IN MOLECULAR ENGINEERING

Nealey is a pioneer of directed self-assembly, which is becoming very important in microelectronics processing to create patterns for integrated circuits. He is one of the world's leading experts on patterning organic materials, literally creating physical patterns of structure and composition in the materials at the nanometer length scale, where the patterns affect the function of the materials.

Many of Nealey's collaborative projects with Juan de Pablo have focused on block copolymer films, which spontaneously self-assemble to form structures with dimensions that range from three to 50 nanometers. Nealey's experimental and de Pablo's computational teamwork extends even to jointly advised doctoral students. Their approach has become so powerfully productive that other institutions seek to replicate their formula for success with their own research teams.

Nealey's interest in tissue engineering of corneal prosthetic devices, pursued in collaboration with a veterinary ophthalmologist, demonstrates the versatility of his expertise in fabricating nanostructured surfaces.

Nealey holds 14 patents and is the author of more than 180 publications. His honors include fellowship in the American Physical Society, the 2010 Nanoscale Science and Engineering Forum Award from the American Institute of Chemical Engineers, and a 2009 Inventor Recognition Award from Semiconductor Research Corporation.

Shoemaker Professor of Chemical and Biological Engineering, University of Wisconsin–Madison

Postdoctoral Research, Harvard University

Engineer, Solvay et Compagnie, Brussels

EDUCATION

PhD, Chemical Engineering, Massachusetts Institute of Technology

BChE, magna cum laude, Rice University