

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Novel Non-toxic Antifouling/Fouling Release Nanocomposite Materials JASON FANG, MSE CORNELL UNIVERSITY, ITHACA, NY TEAM — Biofouling is a significant environmental problem. Traditional solutions to this problem have involved incorporation of toxic organometallic species into the paint. This approach while effective, is harmful to the environment. The resultant ban on the use of many of these coatings has created a need for alternative systems to control marine fouling. Silicones represent the only class of polymers currently used commercially, due to their inherently low surface energy, glass transition temperature, and modulus, combined with good chemical stability and ease of application. In this talk I will present our efforts to develop a new generation of practical, non-toxic coatings that combine antifouling/fouling release characteristics with good mechanical properties, ease of application and low cost. Specifically we have been focusing on a series of fouling release coatings based on PDMS-polyurea segmented copolymers and nanocomposites. The PDMS copolymers are much stronger than pure PDMS yet they exhibit fouling release performance comparable and, in some cases, better than pure PDMS.

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Date submitted: 04 Dec 2007

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