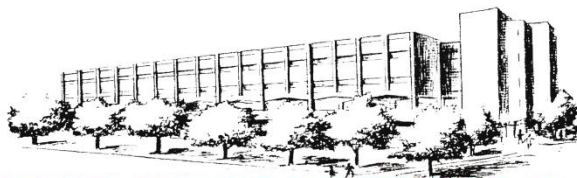


UNIVERSITY OF CONNECTICUT



**INSTITUTE OF MATERIALS SCIENCE**

## **POLYMER PROGRAM SEMINAR**

### **“Ultra-low Wear Fluoropolymer Composites: It's All About the Tribochemistry”**

**Dr. Christopher Junk  
DuPont Central Research & Development**

**Friday, May 1, 2015  
11:00 AM, IMS Room 20**

Over the last decade, several research groups have explored an intriguing set of materials based on Teflon\* PTFE 7C (a granular molding resin) and certain alumina “nanoparticles.” These materials are exceptional because small amounts of alumina additive (often less than 5 wt.%) improve the wear performance of the PTFE composite by over four orders of magnitude. It is believed that the “nano” sized alumina somehow shuts down the flaky wear mechanism of the PTFE, and stabilizes the formation of a persistent transfer film. We have now elucidated the chemical mechanism behind the mechanochemistry which allows generation of a robust thin transfer film and thus ultra-low wear. The focus of this talk will be on this unique chemistry and the role it plays during fluoropolymer sliding wear against a metal countersurface.

*\*For further information, please contact YH Chudy [yhchudy@ims.uconn.edu](mailto:yhchudy@ims.uconn.edu)*

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