HAJIM SCHOOL OF ENGINEERING AND APPLIED SCIENCES
UNIVERSITY of ROCHESTER

RAMP

Department of Chemical Engineering and RAMP presents:

Professor John Mauro
Department of Materials Science and Engineering
Pennsylvania State University

Wednesday, November 7, 2018
3:25 p.m., Goergen Hall 101

"Relaxation is Everywhere"

As a nonequilibrium material, a glass is continually relaxing towards its metastable supercooled liquid state. A comprehensive understanding of glass relaxation is of critical importance for many high-tech applications of glass, including optical fiber, glass substrates for liquid crystal displays, and chemically strengthened cover glass for electronic devices. In this presentation, I will review the current state-of-the-art in understanding the dynamics of glass relaxation, including the physical origins of its non-Arrhenius and non-exponential characters.

Bio: John earned a B.S. in Glass Engineering Science (2001), B.A. in Computer Science (2001), and Ph.D. in Glass Science (2006), all from Alfred University. He joined Corning Incorporated in 1999 and served in multiple roles there, including Senior Research Manager of the Glass Research department. John joined the faculty at Penn State in 2017 and is currently a world-recognized expert in fundamental and applied glass science, statistical mechanics, computational and condensed matter physics, thermodynamics, and the topology of disordered networks.

John is the inventor or co-inventor of several new glass compositions for Corning, including Corning Gorilla® Glass products. John is a pioneer in the use of physics-based and machine learning models for the design of new glassy materials. He is the inventor of new models for supercooled liquid and glass viscosity, glass structure and topology, relaxation behavior, and thermal and mechanical properties.

John was awarded the N.J. Kreidl Award (2006) from the American Ceramic Society, Glass and Optical Materials Division. In 2010, the Pennsylvania State University and the International Commission on Glass (ICG) awarded John the W.A. Weyl International Glass Science Award. In 2011, John received the V. Gottardi Prize from the ICG, and in 2012 he was selected as the inaugural recipient of the Sir Alastair Pilkington Award from the Society of Glass Technology. In 2013, John was awarded the S. Donald Stookey Award for Exploratory Research from Corning Incorporated. In 2015, John became a Fellow of the American Ceramic Society and was recipient of the R.M. Fulrath Award. In the same year, he was also awarded the W.H. Zachariasen Award from the Journal of Non-Crystalline Solids. In 2016, the National Institute of Ceramic Engineers (NICE) selected John as winner of the Karl Schwartzwalder Professional Achievement in Ceramic Engineering (PACE) Award. John is also winner of Corning's Ethnically Diverse Group of Employees (EDGE) Excellence Award (2016).

John is the author of over 210 peer-reviewed publications and has given over 200 presentations at international conferences and seminars. His publications have been cited over 6000 times, with an h-index of 40. John has 36 granted U.S. patents and an additional 36 patents pending. John is Editor of the Journal of the American Ceramic Society and Associate Editor of the International Journal of Applied Glass Science. He also serves as an Editorial Board member for the Journal of Non-Crystalline Solids. John is also a Volume Organizer for the MRS Bulletin.