

**SPRING 2022
CHEMISTRY
SEMINAR SERIES**



**DR. THOMAS J.
EMGE**

*Department of Chemistry
and Chemical Biology*

*Rutgers University
New Brunswick, NJ*

**HOST:
DR. LALANCETTE**

**ALL THOSE
INTERESTED ARE
WELCOME TO
ATTEND**

**“Unexpected Lanthanide Clusters Discovered only
via Single Crystal Diffraction”**

**Friday, April 1, 2022, 11:30 AM
Life Science Center II, Room 130**

Abstract: The evolution of a research program headed by Professor John Brennan (Rutgers-New Brunswick) [1] to study the chemistry and structure of novel chalcogenido lanthanide compounds is reviewed from the perspective of the progression of the numerous crystal structures discovered. In most cases, the identity of the synthesized product was determined only by use of single crystal diffraction (SCD), because of decomposition (always) or paramagnetism (nearly always) of the compound. The technology used in diffraction experiments in our lab at Rutgers-NB has also evolved dramatically over the 30 years of these studies, and two advances in particular have brought speed and reliability to the SCD analyses.

Biographical sketch: Dr. Thomas Emge was raised in the mountains of western PA. He attended high school and college in Philadelphia (B.S. Chemistry 1977, Saint Joseph’s University) and did his graduate studies in Baltimore (M.S. Chemistry 1980, Ph.D. Physical Chemistry 1981, Johns Hopkins University). He completed postdoctoral research under Dr. Thomas Koetzle at the Chemistry Department (x-ray and reactor neutron diffraction) at Brookhaven National Laboratory, New York, 1981-1983. He completed his postdoctoral research under Dr. Jack Williams at the Chemistry Department (x-ray and spallation neutron diffraction) at Argonne National Laboratory, Chicago, 1983-1986. Dr. Emge managed the x-ray facility (single-crystal, powder, XRF) at Procter and Gamble corporate research, Cincinnati, 1986-1992. Dr. Emge currently manages the x-ray facility (single-crystal, powder, thin films, back-reflection Laue, WAXS, SAXS, XRF) at Rutgers-New Brunswick since 1992. He has co-authored and authored over 300 peer-reviewed papers. He individually trained over 50 graduate students and technicians; has taught formal classes at Rutgers-NB on powder diffraction, protein crystallography, and general crystallography.

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Department of Chemistry
73 Warren Street, Olson Hall
Newark, New Jersey
<https://sasn.rutgers.edu/chemistry>