



**CENTER FOR NANOHYBRID
FUNCTIONAL MATERIALS
and
UNL DEPARTMENT OF
CHEMISTRY**

**FRIDAY
FEBRUARY 1, 2013
3:30 – 4:30 PM
112 HAMILTON
HALL - UNL**



Dr. Seán Barry

Associate Professor and Associate Chair, Graduate and Post-Doctoral Affairs,
Department of Chemistry, Carleton University, Ottawa

The Chemistry of Coinage Metal Precursors for Atomic Layer Deposition

Copper metal deposition has been studied for many years, driven by interest in the microelectronics community where copper is used as an interconnect material. Atomic layer deposition is projected to help solve the deposition of copper metal into features that are below 23 nm in pitch.

Gold metal deposition has lagged behind copper for several reasons: it is less desired for microelectronics, the chemistry of gold is significantly less forgiving than copper, and gold compounds can be extremely light and heat sensitive. However, applications in nanostructure fabrication, meta-materials, surface plasmon resonance applications, and self-assembly have driven interest in defining reproducible and robust deposition chemistry for gold.

This seminar will discuss new precursors for coinage metals, contrasting copper and gold chemistry, focusing on carbenes as coordination ligands and amides, amidinates, and guanidinates as anionic ligands. Several examples of deposition processes and their mechanisms will be discussed, and some applications will be shown.

Seminar hosted by Dr. Rebecca Lai, UNL Chemistry Department



The University of Nebraska-Lincoln
is an equal opportunity educator and
employer.

