

ALD 2016 Ireland

Seán Barry

Professor

Department of Chemistry, Carleton University



Seán Barry is a Professor at Carleton University (Ottawa, Canada), where he works on precursor compounds and process design for atomic layer deposition (ALD).

He was trained in inorganic synthetic chemistry by Darrin Richeson (Ph.D, University of Ottawa, 1996), and spent three formative years working on chemical vapour deposition (CVD) and ALD precursors with Roy Gordon (Harvard University, 1998 – 2000, 2002 -2003). He was instrumental in the design and synthesis of the well-known copper(I) amidinate dimers that are presently used for copper CVD/ALD.

Seán started in Carleton University in 2003 working on guanidines of the group 13 (Al, Ga, In), and has recently studied iminopyrrolidines and carbenes, branching out to the coinage metals. His group works mainly on the mechanisms of thermal decomposition and film deposition, and have invented several novel characterization methods to better understand surface chemistry. Recently, his group reported the first ever deposition of gold metal by radical-enhanced ALD.

He is the Director of a \$1.9M nanofabrication facility to explore nanoscience, surfaces, and sensor interfaces (FANSSI). Seán's current research interest is in the mechanisms of metal thin film formation by CVD and ALD, specifically for designing new, stable precursors for depositing “difficult” metal films by ALD.