

Fall 2022 Joint Colloquium

Materials Department & Materials Research Laboratory

Professor Geoffrey Coates

Department of Chemistry &
Chemical Biology

Cornell University

Friday, November 18, 2022

11:00 am | ESB 1001



Development of New Routes to Benign Polymeric Materials

Society depends on polymeric materials now more than at any other time in history. Although synthetic polymers are indispensable in a diverse array of applications, ranging from commodity packaging and structural materials to technologically complex biomedical and electronic devices, their synthesis and disposal pose important environmental challenges. The focus of our research is the development of sustainable routes to polymers that have reduced environmental impact using catalysis. This lecture will focus on our research to transition from fossil fuels to renewable resources for polymer synthesis, as well as the development of polymeric materials that exhibit lower post-use impact on the environment.

Bio

Geoffrey W. Coates received a B.A. degree in Chemistry from Wabash College in 1989, a Ph.D. in organic chemistry with Robert Waymouth at Stanford University in 1994, and was an NSF Postdoctoral Fellow with Robert Grubbs at the California Institute of Technology. He joined the Cornell University faculty in 1997, where he is now the Tisch University Professor.

The research focus of the Coates Group is the development of new catalysts for the synthesis of macromolecules and small molecules. Professor Coates' research concentrates on developing new methods for reacting commodity feedstocks in unprecedented ways. His current research centers on the development of homogeneous catalysts for olefin polymerization, heterocycle carbonylation, epoxide homo- and copolymerization, the utilization of carbon dioxide in polymer synthesis, and new polymers for energy conversion and storage.

Professor Coates has been awarded the A. C. Cope Scholar Award, the ACS Award in Affordable Green Chemistry, the Hach Award for Entrepreneurial Success, the Applied Polymer Science Award, and the Carl S. Marvel Creative Polymer Chemistry Award. He was inducted into the American Academy of Arts & Sciences in 2011, and the National Academy of Sciences and the National Academy of Inventors in 2017. He was the recipient of the Eni Award in 2022. He is the scientific cofounder of Novomer, Ecoelectro, and Intermix Performance Materials, and is an Associate Editor of *JACS*.

<https://coates.chem.cornell.edu/>

Hosted by Michael Chabiny.