



Department of Chemistry

香港城市大學
City University of Hong Kong

Distinguished Seminar Series

***From New Catalytic and Initiating Systems for
ATRP to New Materials***

By

Prof. Krzysztof Matyjaszewski

J.C. Warner University Professor of Natural Sciences
Department of Chemistry
Carnegie Mellon University, USA

Date: 5 August 2026 (Wednesday)

Time: 11:00 am – 12:00 noon

**Venue: B5-211 (Blue Zone, 5th Floor)
Yeung Kin Man Academic Building
City University of Hong Kong**

For abstract, please refer to the attached sheet.

Contact: Prof. Michael CHAN (3442-9678, mcwchan@cityu.edu.hk)

~ All Are Welcome ~

Abstract

New catalytic and initiating systems for ATRP were developed to prepare various well-defined polymers with precisely controlled macromolecular architecture under environmentally benign conditions, with ppm of catalysts, in aqueous environment, and in open-air with temporal control by light, electrical current, mechanical forces, or benign chemicals such as ascorbic acid. The dynamic exchange between active radicals and dormant species catalyzed by ppm amounts of copper catalyst in atom transfer radical polymerization (ATRP) enabled access to uniform star, comb, bottlebrush, or cyclic polymers with controlled chain composition, such as block, gradient, or periodic structures. Macromolecular engineering provided access to designed bioconjugates by covalently linking synthetic polymers with proteins or nucleic acids and attaching polymers to inorganic surfaces. Such well-defined polymers and hybrid materials outperform conventional commercial products; they can self-assemble, self-repair, depolymerize back to monomers and respond to external stimuli.

Biography

Kris Matyjaszewski is J.C. Warner University Professor of Natural Sciences and director of the Center for Macromolecular Engineering at Carnegie Mellon University. In 1994, he discovered Cu-mediated atom transfer radical polymerization, which was commercialized in 2004 in the US, Japan, and Europe. He has co-authored >1,300 publications and 72 US patents. He is a member of the National Academy of Engineering, National Academy of Sciences, European, Australian, and Polish Academies of Sciences. He received 2026 Blaise Pascal Medal in Chemistry, 2023 NAS Award in Chemical Sciences, 2015 Dreyfus Prize in Chemical Sciences, 2011 Wolf Prize in Chemistry, 2009 Presidential Green Chemistry Challenge Award, and fourteen doctorates honoris causa.