

Prof. Brent Sumerlin

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Harnessing Photochemistry for Polymer Precision and Sustainability

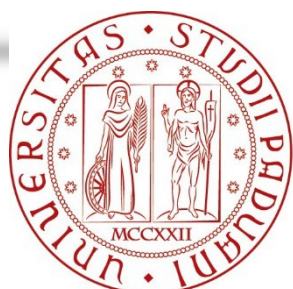
Mercoledì 30 Aprile 2025, ore 14.30
Aula A, Dipartimento di Scienze Chimiche
Via Marzolo 1 – Padova

ABSTRACT: *Light offers a versatile tool for controlling both the formation and destruction of polymers. In this talk, we will highlight recent advances in the use of photoiniferter polymerization to prepare ultrahigh molecular weight (UHMW) polymers with precise architectural control. This approach harnesses the unique ability of iniferters to act as initiators, transfer agents, and terminators—enabling polymerization to proceed under mild conditions with tunable kinetics. We will also explore how light can be used not just to build but to break down polymeric materials. Examples will include photoinduced degradation and depolymerization strategies that open pathways toward sustainable lifecycles for synthetic polymers.*

BIOGRAPHY: *Brent Sumerlin is the George Bergen Butler Chair in the Department of Chemistry at the University of Florida. He received his undergraduate degree from North Carolina State University in 1998 and later earned his PhD in Polymer Science & Engineering at the University of Southern Mississippi under the guidance of Charles McCormick. After completing his PhD, Sumerlin worked as a Visiting Assistant Professor/Postdoctoral Research Associate at Carnegie Mellon University under Krzysztof Matyjaszewski. In 2005, he took a faculty position at Southern Methodist University before moving to the University of Florida in 2012. Sumerlin is an associate editor for ACS Macro Letters and a Fellow of the Royal Society of Chemistry and the ACS Division of Polymer Chemistry. He has received awards, including the Alfred P. Sloan Research Fellowship, NSF CAREER Award, ACS Leadership Development Award, Journal of Polymer Science Innovation Award, Biomacromolecules/Macromolecules Young Investigator Award, the Hanwha-Total IUPAC Award, Mark Scholar Award, and the UF Doctoral Dissertation Mentoring/Advising Award.*

Prof. Edmondo Benetti
Dipartimento di
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Prof. Stefano Mammi
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