

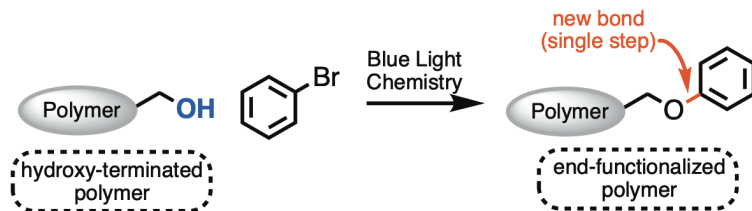
Adventures in Chemical Synthesis: The Korich Research Group at Saint Michael's College

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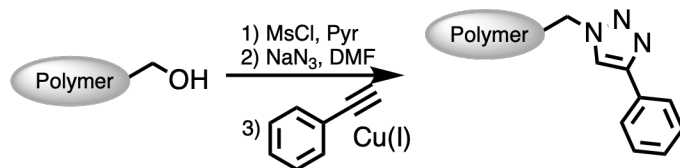
Department of Chemistry, Saint Michael's College, Colchester, Vermont 05439

Project #1: End-functionalization of Hydroxy-terminated Polymers by Blue Light Chemistry

Overall Objective

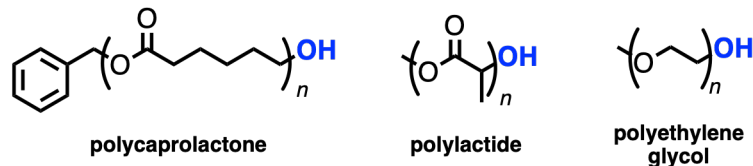


Current approach to end-functionalized polymers.



Time intensive, three step process, with significant amount of purification waste

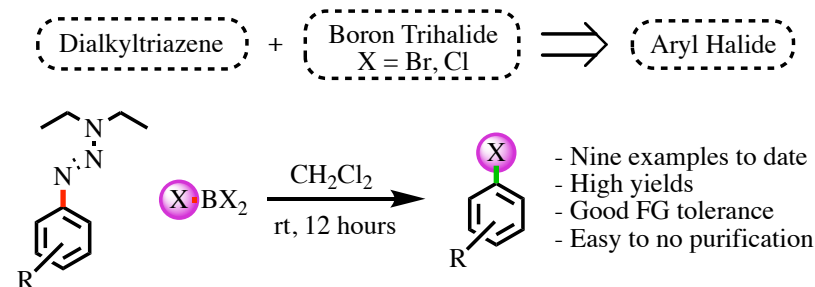
Polymers of Interest



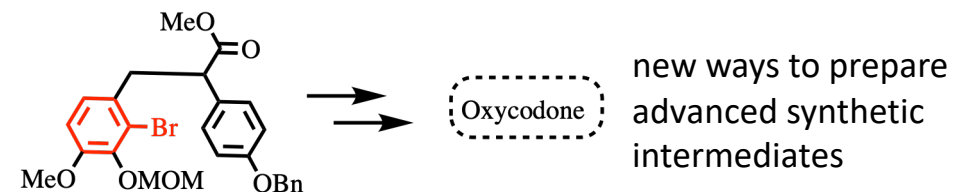
All FDA approved to enter human body

Project #2: Boron Tribromide Promoted Dialkyltriazene Decomposition

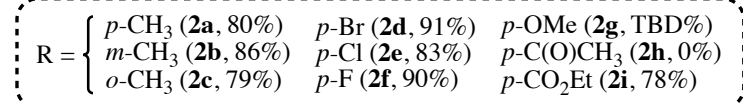
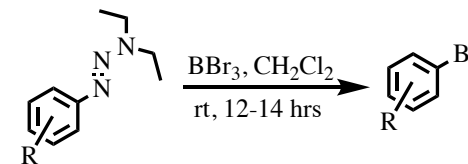
Overall Objective



Motivation

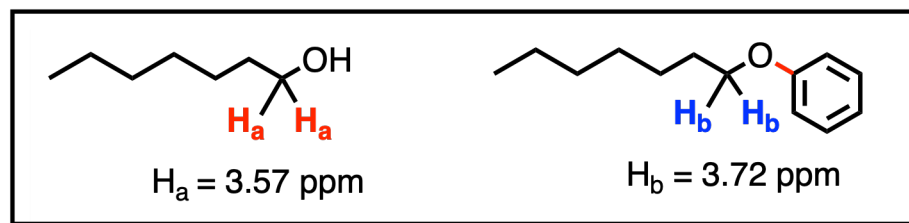
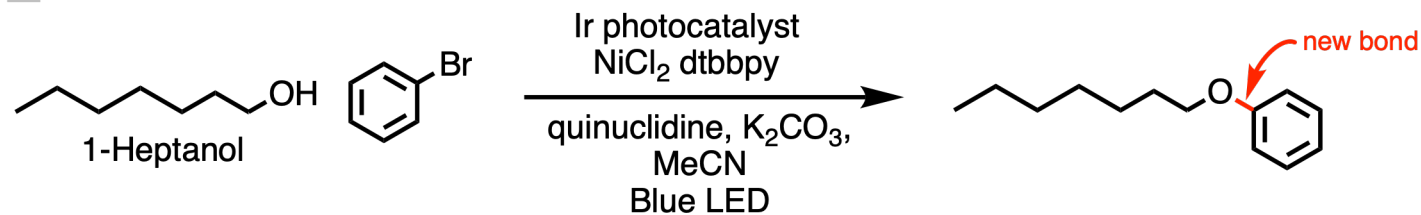


Functional Group Tolerance



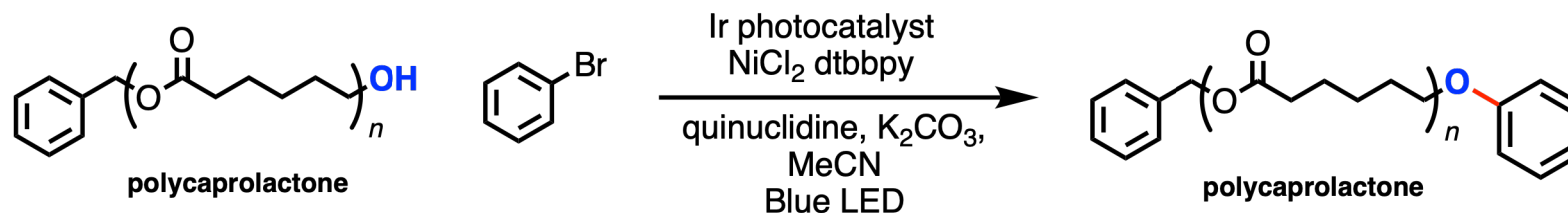
Project #1: End-functionalization of Hydroxy-terminated Polymers by Blue Light Chemistry

Status of the project: **A** Model System



Model system shows good conversion to the desired product by ^1H NMR

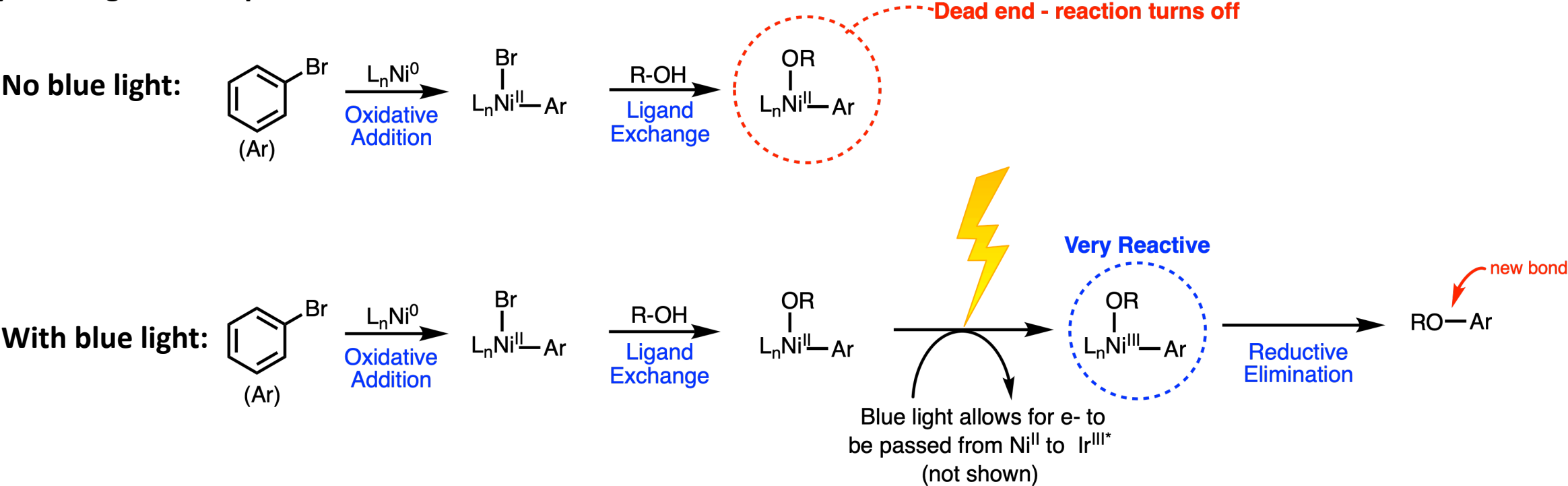
B Polymer System



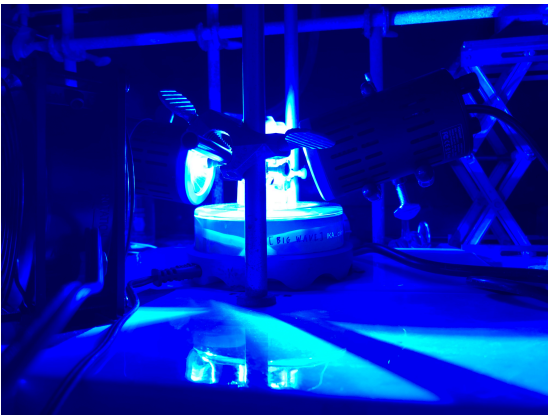
As of today, we have not observed coupling of the aryl bromide to the terminal hydroxyl group of the the test polymer

Project #1: End-functionalization of Hydroxy-terminated Polymers by Blue Light Chemistry

Why Blue Light? – Simplified mechanism

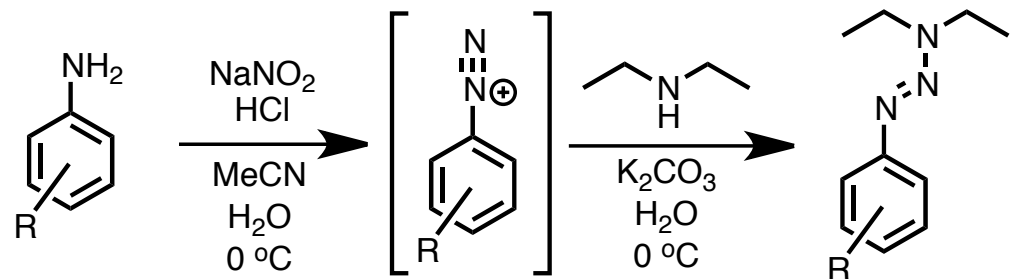


The set up



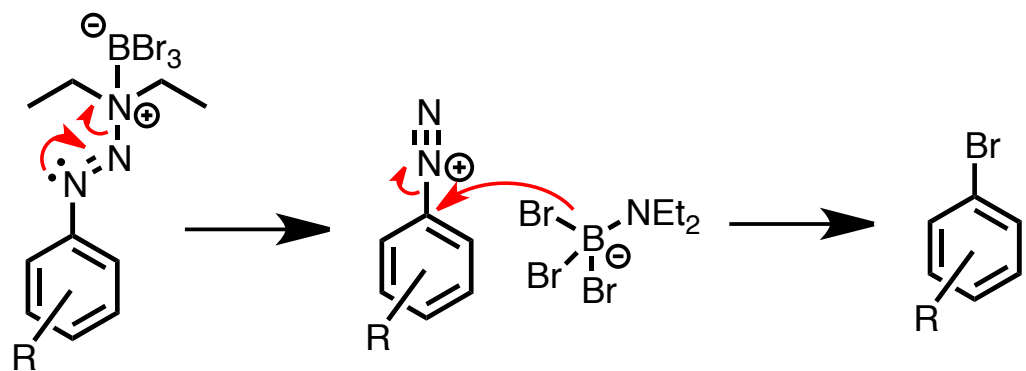
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Triazene Formation



R = *p*-CH₃ (80%)
m-CH₃ (57%)
o-CH₃ (60%)
p-C(O)CH₃ (78%)
p-Br (92%)
p-OMe (48%)

Proposed Mechanism



NMR Results

