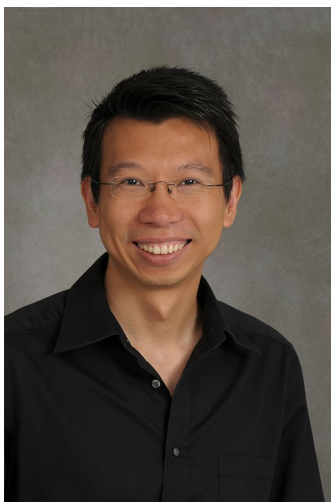




Ngai lab aims to establish new molecular editing and assembling technologies for rapid synthesis and late-stage functionalization of biorelevant molecules. Our research efforts have been directed to exploit visible-light-induced excited-state catalysis, a process that involves at least one photoexcited catalytic species, to address unmet challenges in organic synthesis. In this seminar, I will cover our efforts in the development of (i) excited-state copper catalysis in carbonyl chemistry, (ii) novel fluorinating reagents for late-stage, direct C-H tri- and difluoromethoxylation of aromatic compounds, and (iii) site-selective modification of carbohydrates & beyond. Since functionalized carbonyl compounds, fluorinated molecules, and carbohydrates are ubiquitous in bioactive compounds, our chemistry will allow convenient access to and studies of new functional molecules to aid the discovery of new therapeutics, agrochemicals, and imaging agents.