

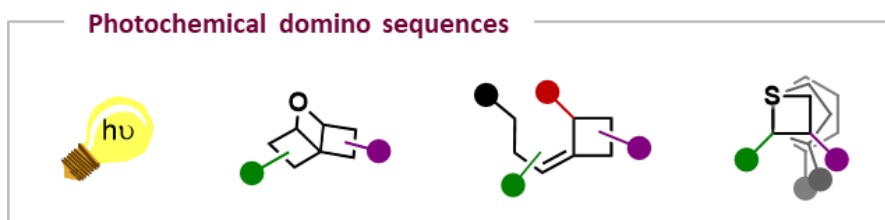
Photochemical Domino Reactions: a Source of Molecular Complexity

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Photochemical reactions constitute powerful tools for the creation of chemical diversity from simple and readily available starting materials.^[1] They provide access to complex molecular structures that are difficult to obtain using other methodologies.^[2] These transformations induced by light absorption are attractive in the context of sustainable development and they can address this challenge more efficiently when they are incorporated in multiple bond-forming transformation processes, such as domino reactions.^[3] Combined with thermal reactions or even better with other photochemical transformations, this strategy is economical in terms of time, energy, waste and can avoid the isolation of intrinsically unstable intermediates.

Divided in two parts, this talk will demonstrate the power of combining multiple bond-forming transformations and photochemical processes to prepare i) highly functionalized cyclobutanes^[4] and alkylidenecyclobutanes^[5,6] from readily-available cyclopent-2-enones and ii) sulfur-containing heterocycles, such as thietanes^[7,8] and tetrahydrothiophenes,^[9] through an *in-situ* generation of unstable thiocarbonyls.



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