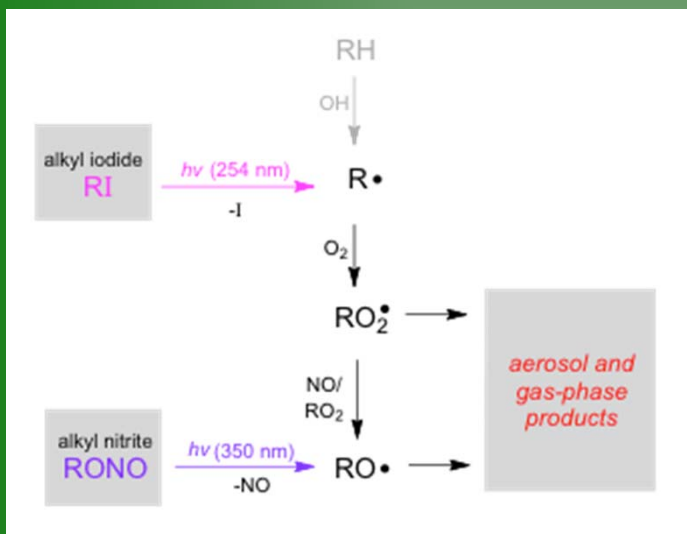


# Experimental Study of Oxidation Mechanisms of Large Hydrocarbons by the Photolytic Formation of Key Radical Intermediates

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The aim of this project is to better understand the *detailed chemical mechanisms underlying hydrocarbon oxidation*, by studying molecular products formed from key radical species (RO<sub>2</sub> and RO). Radicals are formed photolytically rather than from oxidant + hydrocarbon reactions, allowing for a high degree of control of reaction pathways and reaction conditions.

The photolysis of gas-phase alkyl iodides and alkyl nitrites is found to produce high quantities of condensed-phase (fine particulate) products, which can be studied using aerosol mass spectrometry. Mass spectra (right) confirm that such products are far simpler (and more interpretable) than those from the oxidant-initiated chemistry (bottom panel), and provide insight into detailed chemical mechanisms.

