

# Chemistry of reactive intermediates in combustion and tropospheric oxidation systems

Craig A. Taatjes

*Combustion Research Facility, Sandia National Laboratories, Livermore, California,  
USA*

The oxidation of hydrocarbons is an important process in the troposphere and in combustion systems, and investigators in both these arenas seek predictive models of hydrocarbon oxidation chemistry. Especially in complex environments, a predictive model often requires understanding the role of reactive intermediate species in the overall oxidation process. For example, radical chain branching in autoignition relies on the reaction of hydroperoxyalkyl (“QOOH”) radicals, and oxidation of unsaturated hydrocarbons by ozone creates carbonyl oxide “Criegee intermediates.” I will describe recent investigations that aim to isolate and interrogate the reactivity of these often unstable species.