



Helium nanodroplet isolation is used to trap and stabilize intermediates of prototype reactions that are central to combustion chemistry. Intermediates that result from the barrierless reactions between hydrocarbon radicals or between a hydrocarbon radical and molecular oxygen are being characterized with *infrared laser spectroscopy*. These studies add new chemical insight into the detailed mechanisms of reactions that are relevant to low-temperature hydrocarbon oxidation and soot formation.

