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Abstract

Reactive oxygen species (ROS) are a family of chemical compounds that are physiologically and environmentally important. One member of this family is the hydroxyl radical ($\text{HO}\bullet$). A previous study¹ explored the rates of $\text{HO}\bullet$ reactions with aromatic substrates in a nonaqueous solution and correlated these rates with the ionization potential of those substrates. Developing this correlation is the first step in being able to estimate how fast $\text{HO}\bullet$ will react in nonaqueous physiological or environmental systems. The following research is a continuation of this primary study and expands upon it with a wider variety of activated and deactivated ring structures. The experimental procedure included sample preparation, laser-flash photolysis (LFP), and data analysis. The findings of this study were subsequently published in the *Journal of Physical Chemistry* in 2018 (Appendix A).

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