# Article information:

Gallic Acid Accelerates the Oxidation Ability of the Peracetic Acid/Fe(III) System for Bisphenol A Removal: Fate of Various Radicals | ACS ES&T Engineering
<https://pubs.acs.org/doi/10.1021/acsestengg.2c00301>

# Article summary:

1. Fe(III) can be used to activate peracetic acid (PAA) in the presence of natural polyphenols, such as gallic acid (GA).

2. The GA/Fe(III)/PAA system efficiently removed bisphenol A (BPA) over a wide initial pH range of 4.0–7.0, with a removal rate of >90% over 20 min.

3. The generated organic radicals (R-O•) did not contribute significantly to BPA removal, but the reaction intermediates and degradation intermediates of GA and BPA were important for the regeneration of Fe(II) from Fe(III).

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is generally reliable and trustworthy, as it provides evidence for its claims through comprehensive analysis and experimentation. It also presents both sides of the argument equally by exploring counterarguments and noting possible risks associated with the process. However, there are some potential biases that should be noted. For example, the article does not explore other potential sources of ROS generation or other methods for activating PAA besides Fe(III). Additionally, it does not provide any evidence for its claims about the reactivity of varied ROS toward different contaminants or discuss any potential environmental impacts associated with this process. Finally, it does not address any ethical considerations related to using natural polyphenols in this process.

# Topics for further research:

* Alternative sources of ROS generation
* Activation of polyacrylic acid
* Reactivity of ROS toward contaminants
* Environmental impacts of ROS generation
* Ethical considerations of natural polyphenols
* Fe(III) activation of polyacrylic acid

# Report location:

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