# Article information:

Ligand effects on arsenite removal by zero-valent iron/O2: Dissolution, corrosion, oxidation and coprecipitation - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S1001074219309155?via%3Dihub>

# Article summary:

1. Ligands can increase the yields of reactive oxygen species (ROS) in zero-valent iron (ZVI)/O2 systems, and their effects on the oxidative removal of contaminants need to be clarified.

2. Five common ligands (formate, acetate, oxalate, ethylenediaminetetraacetic acid (EDTA), and phosphate) as well as acetylacetone (AA) were investigated with arsenite (As(III)) as the target contaminant at three initial pH values.

3. The key properties of ligands that affect the ZVI/O2 system are their ability to provide dissociable protons, complexation ability with iron, and reactivity with ROS.

# 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 “Ligand Effects on Arsenite Removal by Zero-Valent Iron/O2: Dissolution, Corrosion, Oxidation and Coprecipitation” is a comprehensive review of the effects of various ligands on the removal of arsenite from water using zero-valent iron/oxygen systems. The authors have done an extensive literature review and conducted experiments to investigate how different ligands affect the dissolution, corrosion, oxidation and coprecipitation processes in these systems.

The article is generally reliable and trustworthy; however there are some potential biases that should be noted. For example, the authors focus primarily on organic ligands such as formate, acetate, oxalate, EDTA and phosphate; they do not discuss other types of ligands such as inorganic or metal ions which could also have an effect on these processes. Additionally, while they discuss how different properties of ligands can affect these processes, they do not explore any possible counterarguments or alternative explanations for their findings.

In terms of evidence for their claims made in this article, the authors provide a thorough description of their experimental methods and results which support their conclusions about how different properties of ligands can affect arsenic removal from water using zero-valent iron/oxygen systems. They also cite relevant literature throughout to back up their claims.

The article does not appear to contain any promotional content or partiality towards any particular type of ligand or process; instead it provides a balanced overview of all aspects related to this topic. Furthermore, it does note possible risks associated with using certain types of ligands in these systems such as coprecipitation which could

# Topics for further research:

* Inorganic ligand effects on arsenite removal
* Metal ion effects on arsenite removal
* Alternative explanations for arsenite removal
* Risks associated with coprecipitation
* Zero-valent iron/oxygen systems
* Arsenic removal from water

# Report location:

<https://www.fullpicture.app/item/e4c6c56e73cd8c370bbedadecd827342>