# Fe-BASED METAL ORGANIC FRAMEWOKS FOR ENVIRONMENTAL REMEDIATION

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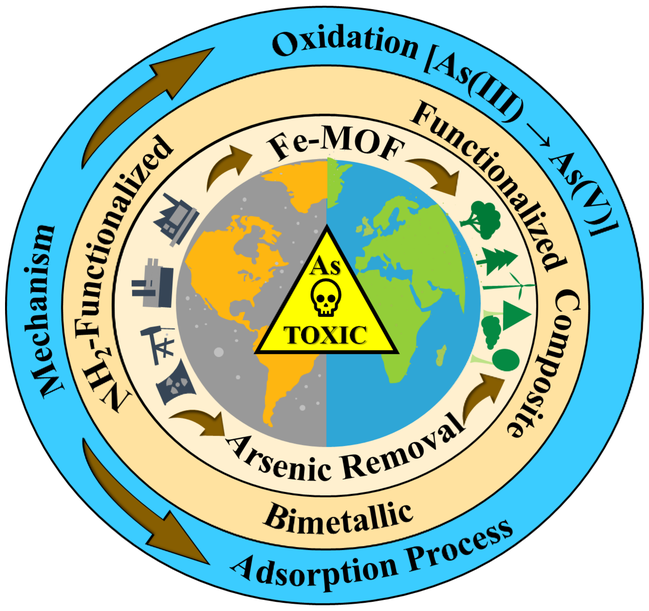
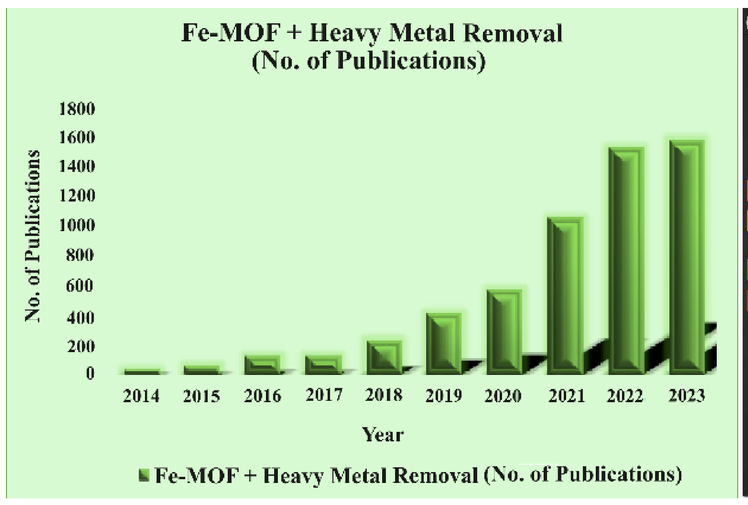
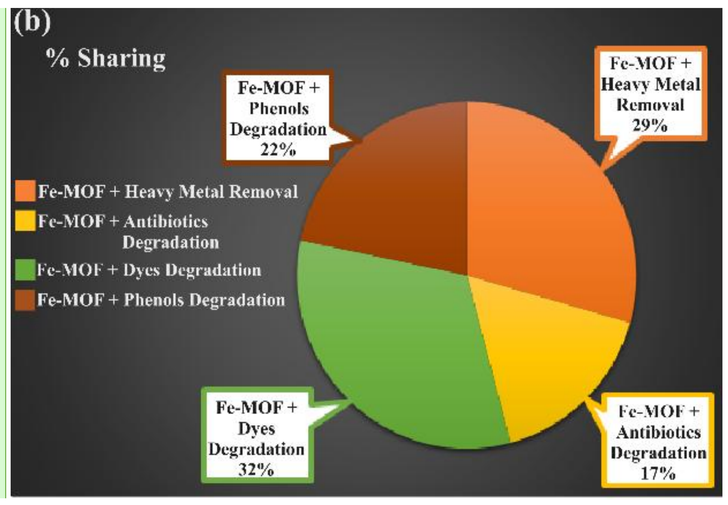
## ABSTRACT

**Arsenic contaminated water, especially groundwater reservoirs, is a major issue worldwide owing to its hazardous consequences on human health and the global environment issues. Hence, there is an urgent need to develop an efficient method for As removal in water. Fe-based MOFs have attained special attention due to their low toxicity, high water stability, better physical and chemical properties, and high abundance of iron. The arsenic species removal by Fe-MOF follows the adsorption and oxidation mechanism where As (III) converts into As (V).**

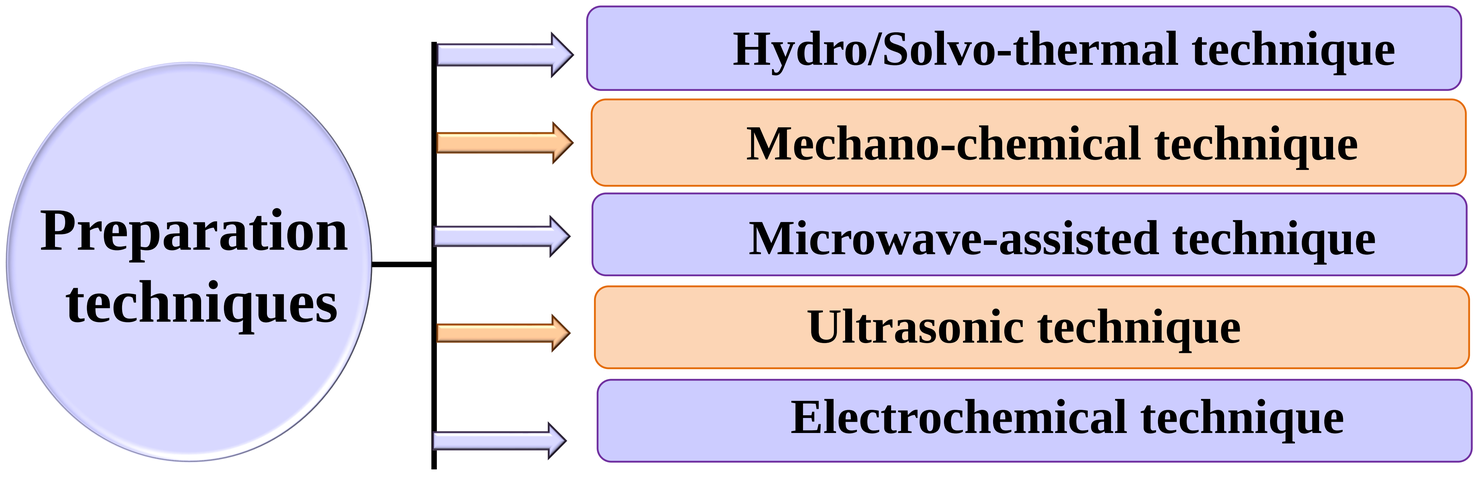



## METHODOLOGY

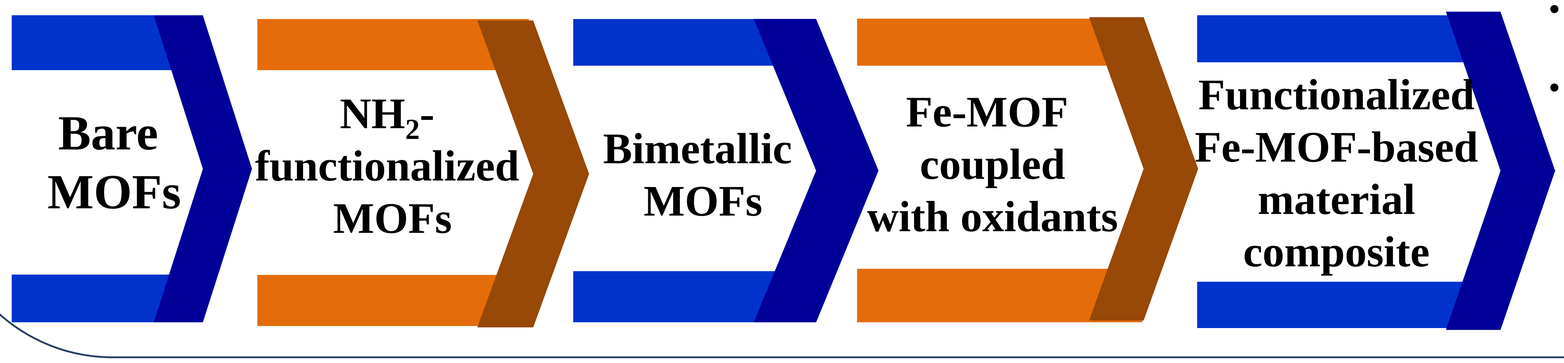


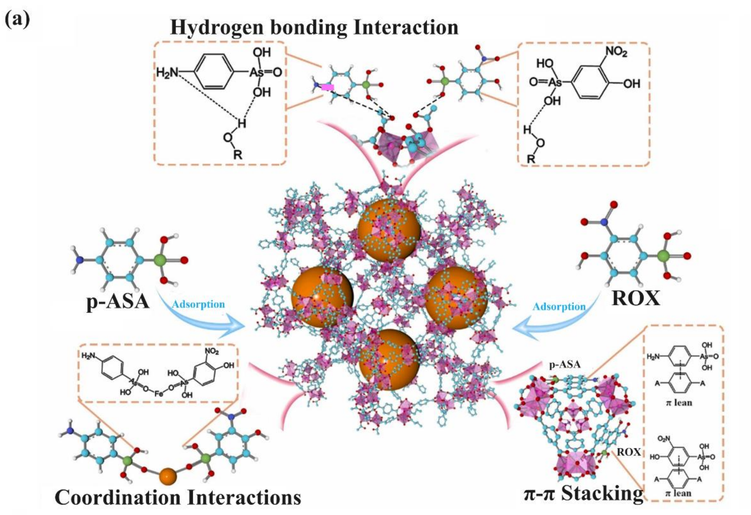

## SYNTHESIS

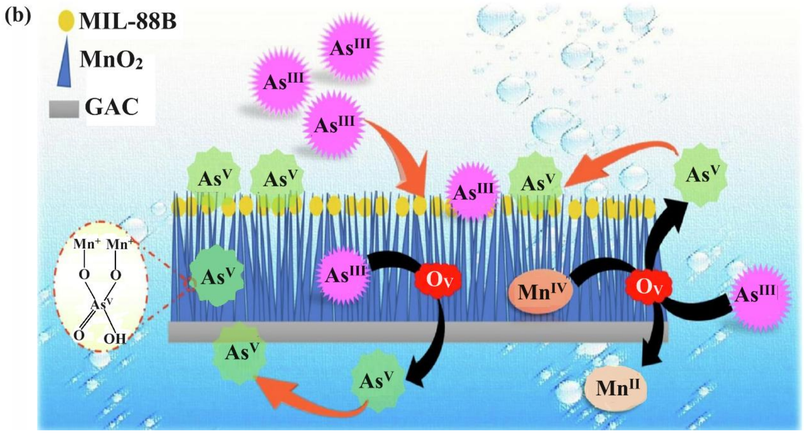



## MODIFICATION STRATEGIES




## MECHANISTIC VIEW




## CONCLUSION

- **The preferable preparation methods of Fe-MOFs include solvo/hydrothermal methods because of minimal chemical wastage, high yield, user-friendly, and the requirement of basic equipment etc.**
- **The mechanisms followed for As species removal are the combination of oxidation and adsorption.**
- **The interactions driving the removal via the adsorption mechanism are van der Waals forces, H-bonding, acid-base interactions, π-π stacking, coordination binding, electrostatic interactions, and hydrophobic interactions.**

## REFERENCE

**G. Lin et al., Chemical Engineering Journal, 2023, 460: p. 141710.**