Revolutionizing water safety: New study makes tap water cleaner and safe

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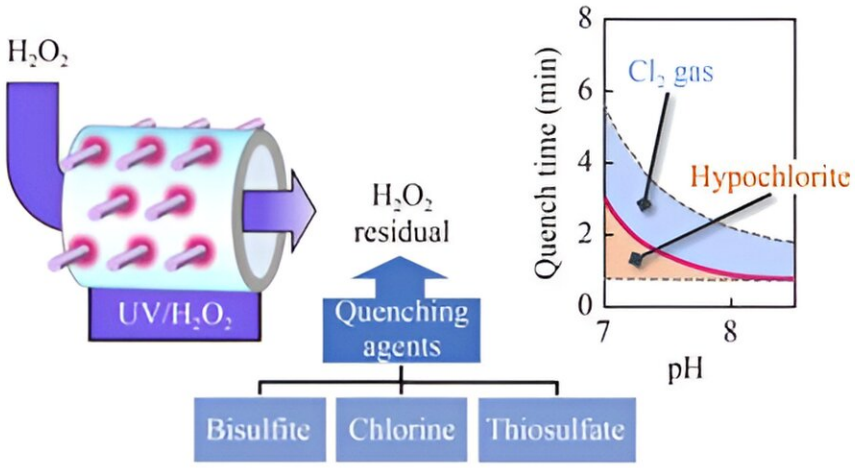

Credit: *Frontiers of Environmental Science & Engineering* (2023). DOI: 10.1007/s11783-023-1747-4

In a new study published in the journal *Frontiers of Environmental Science & Engineering*, researchers from University of Toronto identified the most effective and practical quenching agent for use in drinking water treatment plants. The findings emphasize the crucial significance of selecting an appropriate quenching agent, a decision that plays a key role in the context of drinking water treatment.

In this comprehensive study, researchers delved into the kinetics of hydrogen peroxide quenching following the UV/H_2O_2 advanced oxidation process, focusing on thiosulfate, bisulfite, and chlorine as potential agents. These substances were specifically chosen for their varied effectiveness in degrading residual hydrogen peroxide. The primary objective was to ascertain the most efficient and feasible quenching agent for application in drinking water treatment plants.

The findings of the study revealed substantial differences in the effectiveness of these agents, underscoring the critical importance of selecting the right quenching agent in the water treatment process. Such a decision significantly influences the removal efficiency of pollutants, the overall cost of water treatment, and the environmental impact of the process, highlighting the study's relevance in enhancing water treatment methodologies.

This study offers essential guidance for global water treatment facilities, presenting a scientific framework for choosing quenching agents that effectively balance efficiency, affordability, and environmental impact. Its focus on optimizing the quenching process heralds a move towards more sustainable, effective water treatment methods, significantly enhancing the safety and cleanliness of water supplies worldwide.

More information: Tianyi Chen et al, Kinetics of hydrogen peroxide quenching following UV/H2O2 advanced oxidation by thiosulfate, bisulfite, and chlorine in drinking water treatment, *Frontiers of Environmental Science & Engineering* (2023). DOI: 10.1007/s11783-023-1747-4

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