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**Removal of cyanobacteria from water via advanced oxidation processes** JANIS LAI, JOHN FOSTER, University of Michigan — Harmful algal blooms (HAB) such as those derived from cyanobacteria pose challenges to drinking water derived from surface sources such as reservoirs and lakes. The treatment is complex in that the algae-derived toxins exists both within the algae cell as well as in the water, so simple destruction of the cells can lead to additional toxin release. Any effective treatment approach must manage both toxin sources, keeping the total concentration below the provisional maximum concentration limit. We investigate the effectiveness of a plasma-derived treatment method on mitigating bloom-derived contamination of drinking water. Here, we investigate the capacity of the discharge approach to selectively treat the microcystin in solution as opposed to lysing the cells. Additionally we quantify plasma reaction conditions necessary to both lyse cells and treat released microcystin in solution. This way, we assess the capacity of the plasma-based method to comprehensively address persistent toxic algal blooms.

Janis Lai
University of Michigan

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