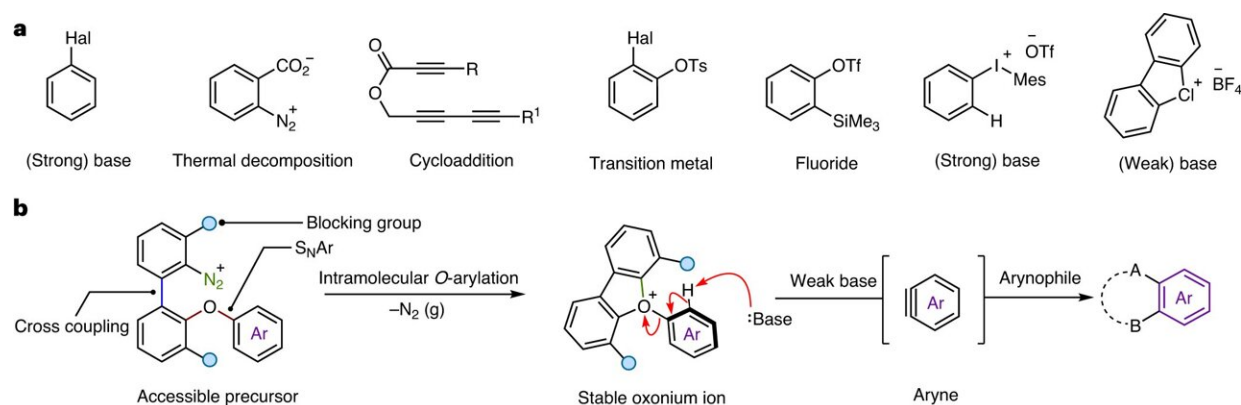


# An ultra-mild and functional-group tolerant method to produce arynes

October 9 2023, by Josh Rhoten



Exemplar methods for the synthesis of arynes, and a strategy for benzyne generation via the elimination of triaryloxonium salts. Credit: *Nature Synthesis* (2023). DOI: 10.1038/s44160-023-00408-1

Researchers at Colorado State University are part of a collaborative study with Oxford University that has developed an ultra-mild and functional-group tolerant method to produce arynes.

Arynes—[aromatic molecules](#) containing a triple carbon-carbon alkyne bond—can be broadly used in the organic creation of pharmaceutically active compounds, for example. However, these beneficial compounds are often created by using strong bases, or fluoride ions, which can limit their potential applications and uses.

Now, the team has published findings in *Nature Synthesis* that show how triaryl oxonium ions can be transformed into arynes by treatment with solid potassium phosphate at [room temperature](#). This approach is milder than similar methods and could propel further investigations into the usefulness of aryl oxonium ions.

The CSU team focused on developing computational models for the work to understand the mechanism of aryne formation. It includes Robert Paton, the Fixman-Ladanyi Professor in the Department of Chemistry, and Postdoctoral Associate Sreenithya Avadakkam. Paton said the findings continue ongoing research in the group.

"The chemistry of oxonium ions is an area of intense interest for us and our experimental collaborators. This work follows recent studies into the creation of new chiral oxonium compounds, published in *Nature* earlier this year," he said.

**More information:** Owen Smith et al, Harnessing triaryloxonium ions for aryne generation, *Nature Synthesis* (2023). [DOI: 10.1038/s44160-023-00408-1](#)

Provided by Colorado State University

Citation: An ultra-mild and functional-group tolerant method to produce arynes (2023, October 9) retrieved 20 June 2024 from <https://phys.org/news/2023-10-ultra-mild-functional-group-tolerant-method-arynes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.