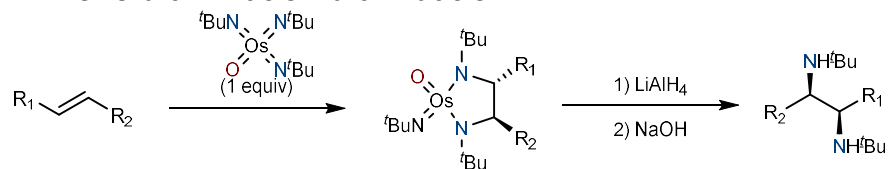
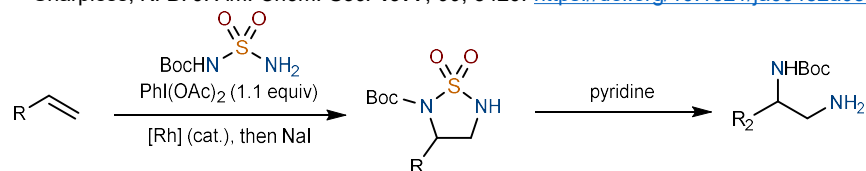


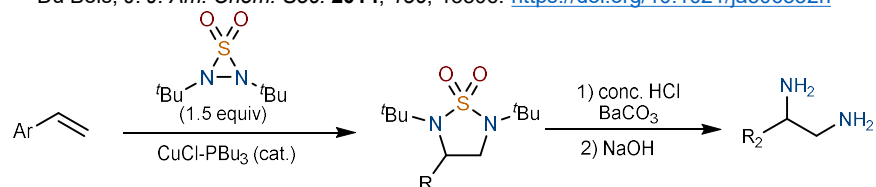
## Alkene diamination/diamidation



Sharpless, K. B. *J. Am. Chem. Soc.* **1977**, *99*, 3420. <https://doi.org/10.1021/ja00452a039>



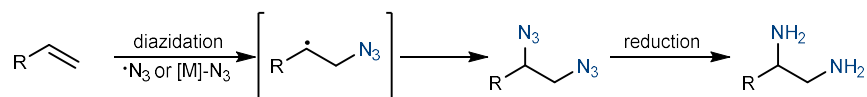
Du Bois, J. *J. Am. Chem. Soc.* **2014**, *136*, 13506. <https://doi.org/10.1021/ja506532h>



Muñiz, K. *J. Am. Chem. Soc.* **2017**, *139*, 4354. <https://doi.org/10.1021/jacs.7b01443>

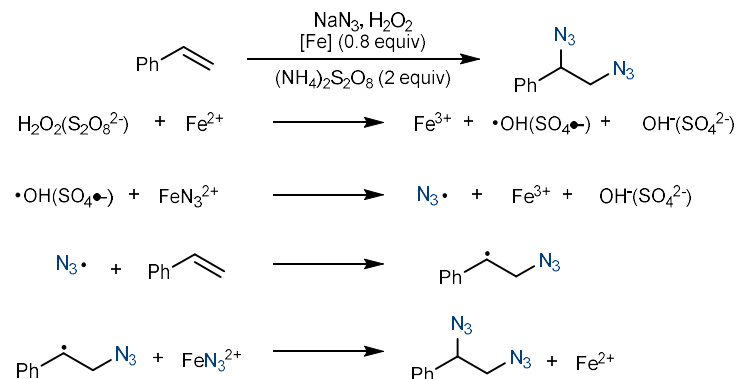
- Generally require stoichiometric amount of heavy metals or esoteric nitrogenous reagents
- Exhibit limited substrate scope

## Alkene diazidation



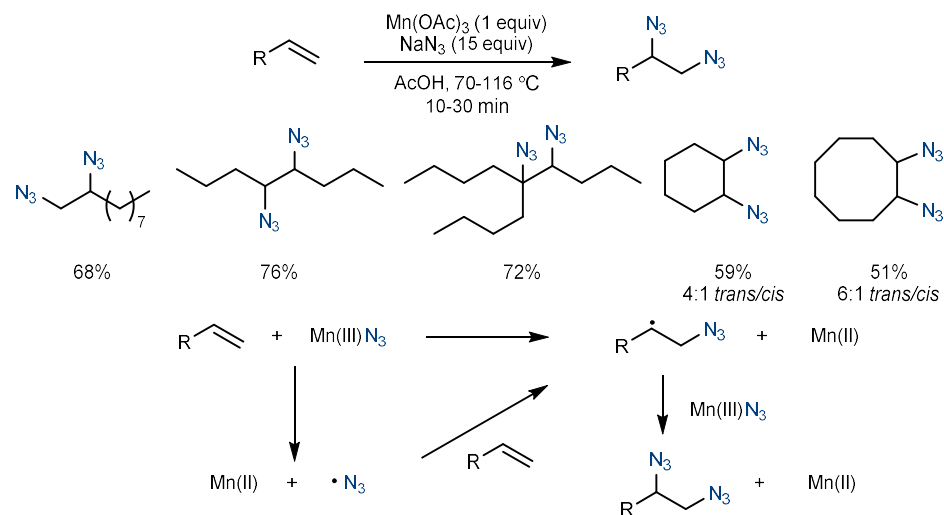
- Organic azides can undergo various functional group transformations (1,3-dipolar cycloaddition, Staudinger ligation, aza-Wittig, etc), making them highly versatile synthetic intermediates.

## Fe(II)-Fe(III) mediated alkene diazidation

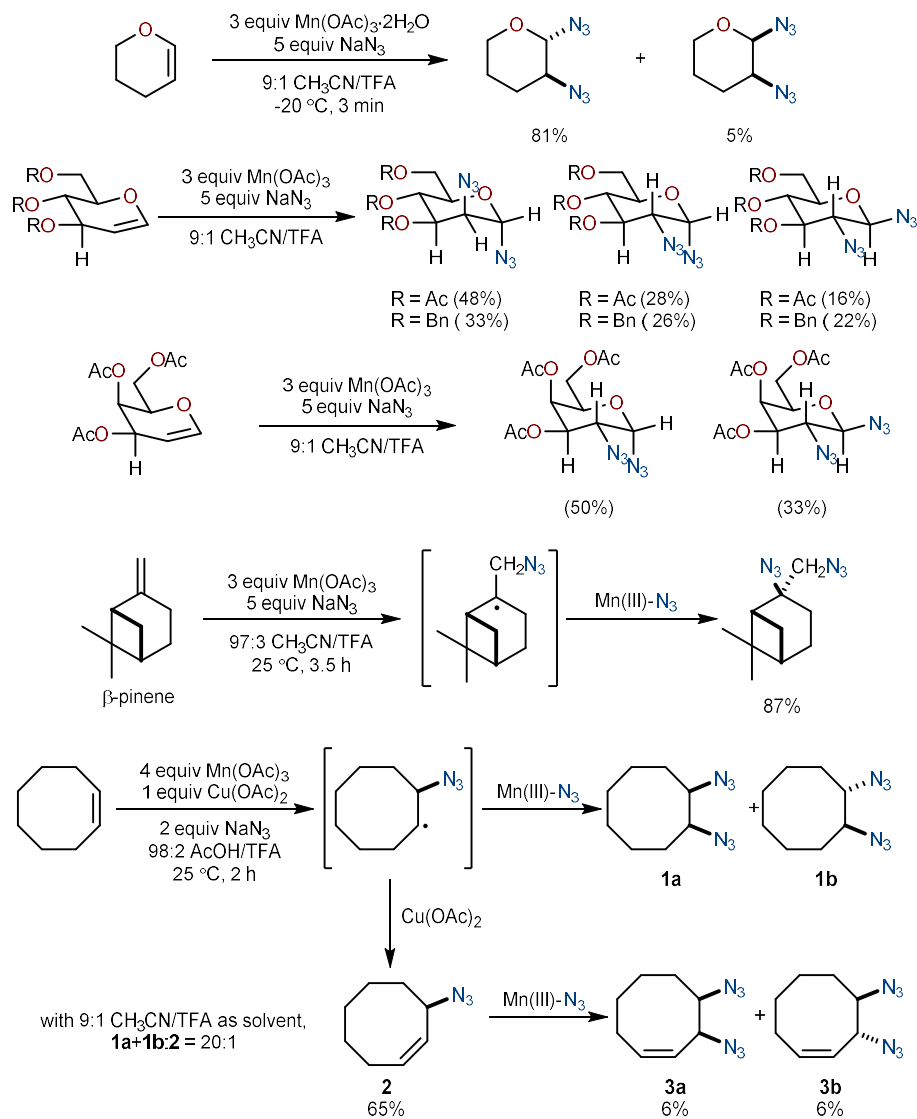


Minisci, F. *Acc. Chem. Res.* **1975**, *8*, 165. <https://doi.org/10.1021/ar50089a004>

## Mn(III)-mediated alkene diazidation

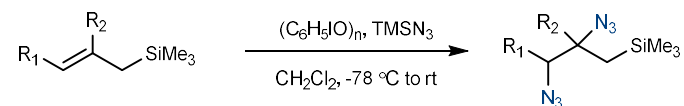


Fristad, W. E. *J. Org. Chem.* **1985**, *50*, 3647. <https://doi.org/10.1021/jo00219a049>



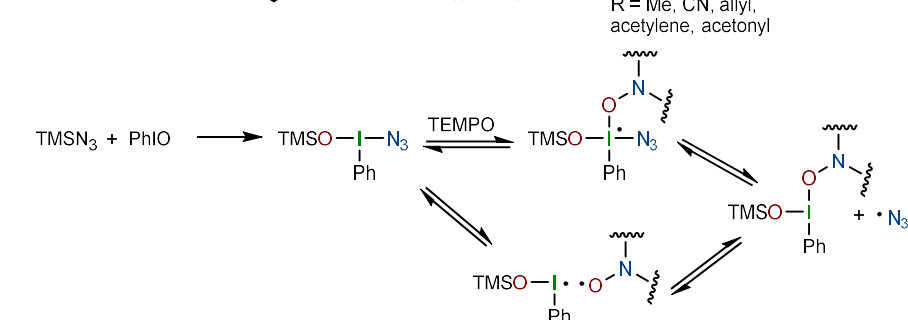
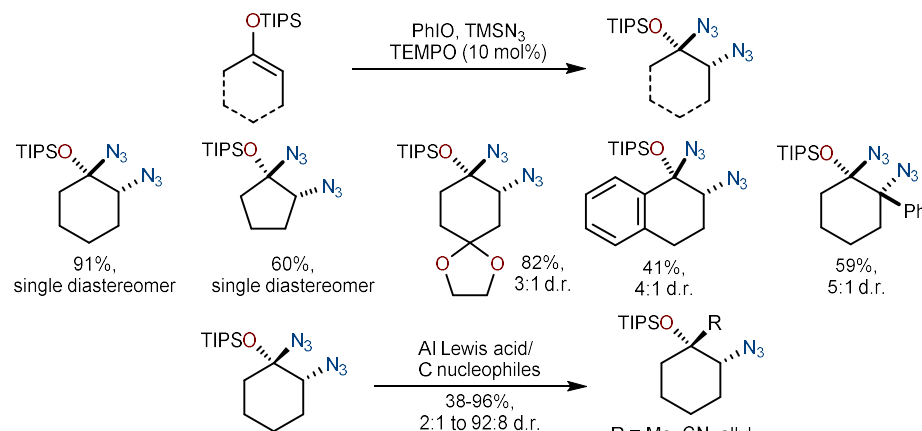
Snider, B. B. *Synth. Commun.* **1998**, *28*, 1913. <https://doi.org/10.1080/00397919808007024>

## Diazidation using hypervalent iodine



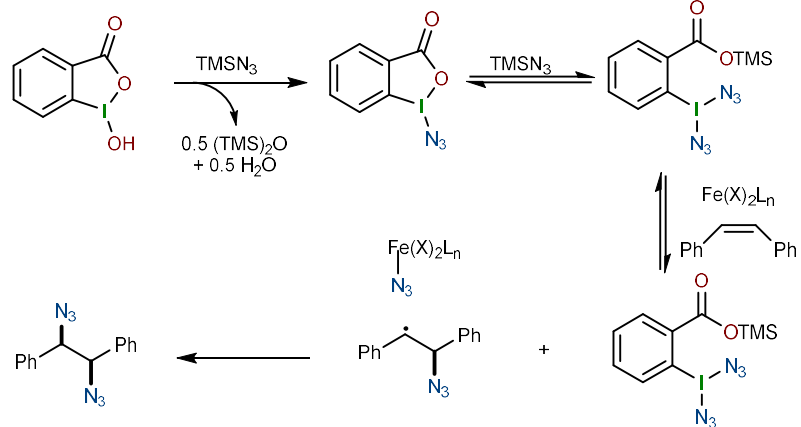
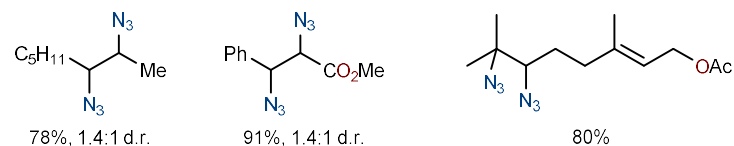
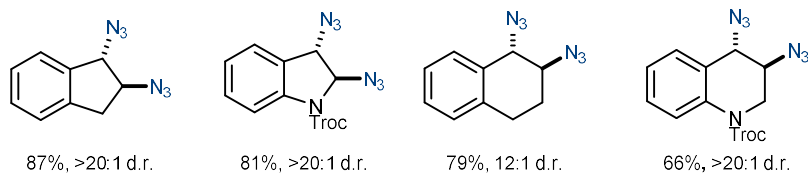
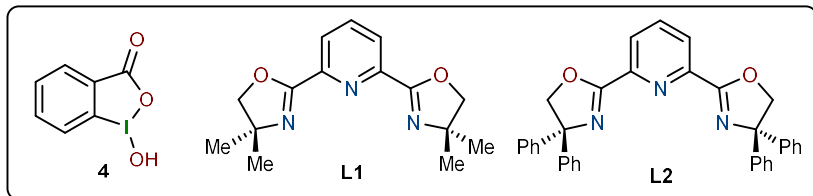
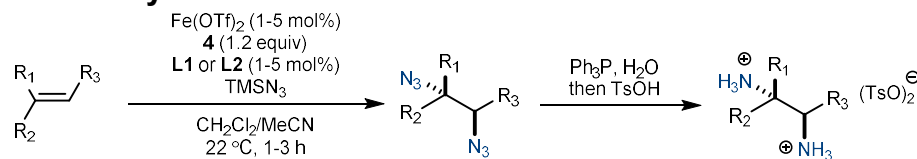
R <sub>1</sub>	R <sub>2</sub>	yield (%)
H	<i>n</i> -C <sub>7</sub> H <sub>15</sub> CH(OAc)(CH <sub>2</sub> ) <sub>2</sub>	86
H	C <sub>6</sub> H <sub>5</sub> (CH <sub>2</sub> ) <sub>2</sub> CH(OAc)CH <sub>2</sub>	75
H	CH <sub>2</sub> =CH(CH <sub>2</sub> ) <sub>8</sub> CH(OAc)CH <sub>2</sub>	48
<i>n</i> -C <sub>10</sub> H <sub>21</sub>	H	46
C <sub>6</sub> H <sub>5</sub> (CH <sub>2</sub> ) <sub>2</sub>	H	52

Arimoto, M. *Chem. Sci.* **1989**, *37*, 3221. <https://doi.org/10.1248/cpb.37.3221>



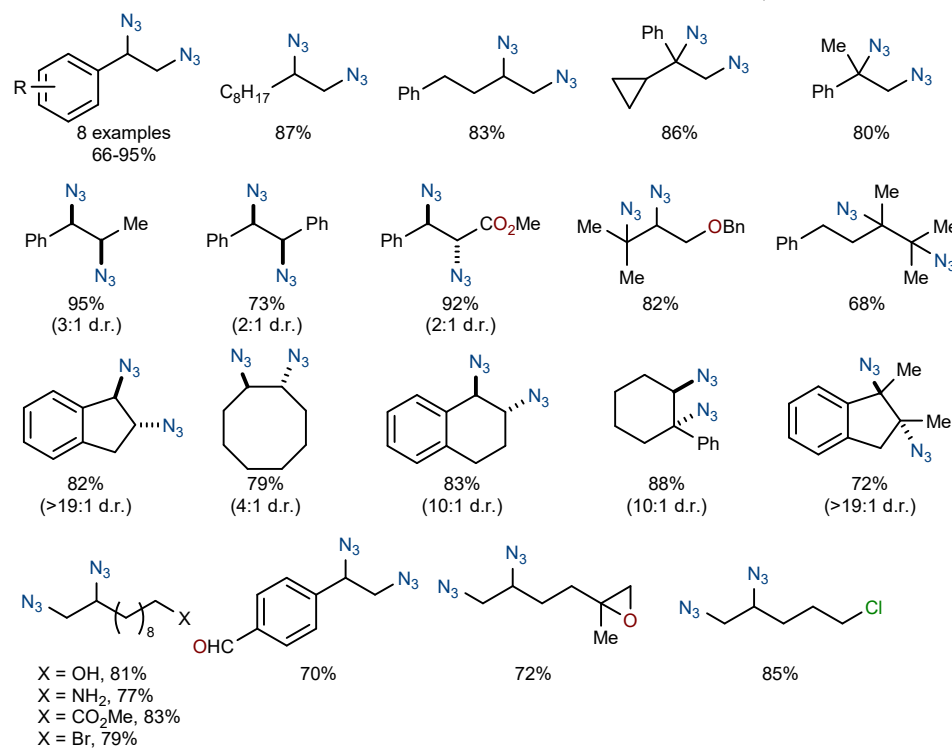
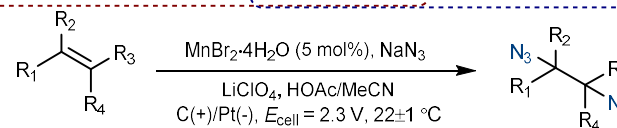
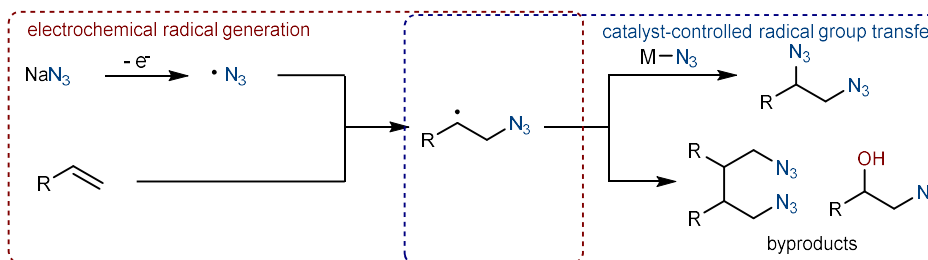
Magnus, P. J. *Chem. Soc. Chem. Commun.* **1995**, 263. <https://doi.org/10.1039/C39950000263>

## Fe-catalyzed diastereoselective diazidation

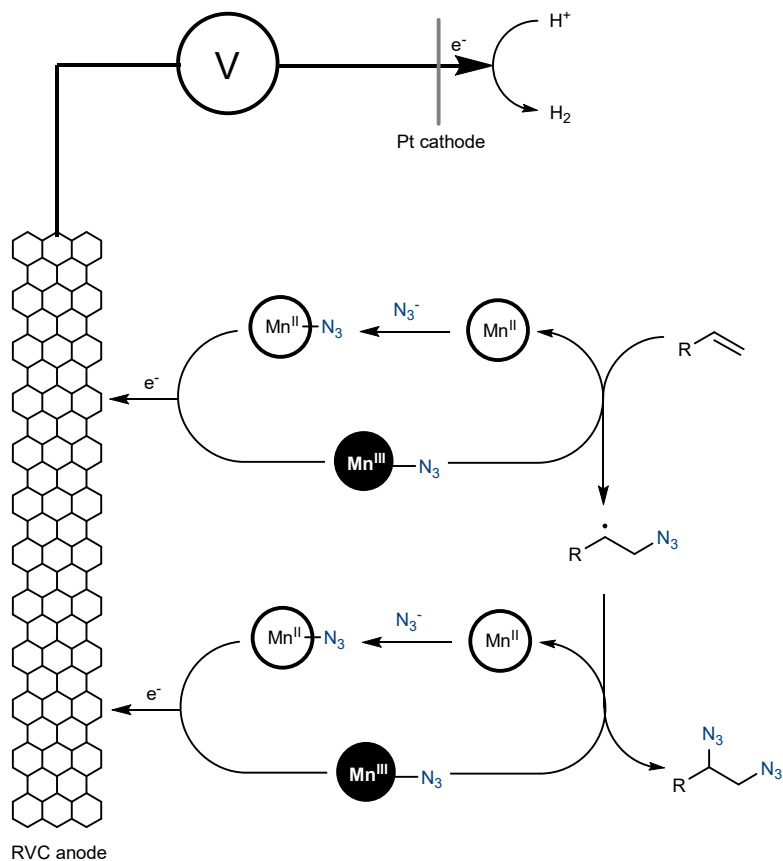


Xu, H. *Angew. Chem. Int. Ed.* **2016**, 128, 544. <https://doi.org/10.1002/anie.201507550>

## Metal-catalyzed electrochemical diazidation



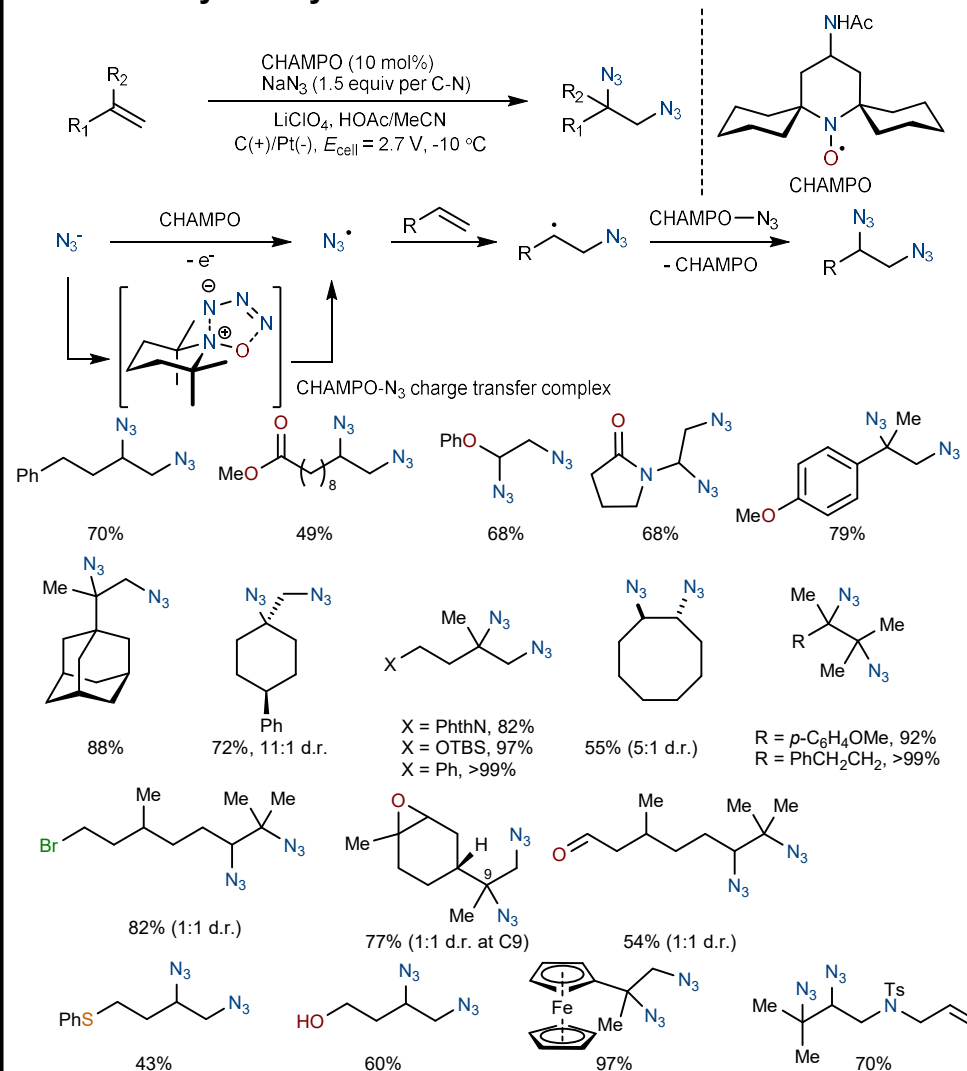
Lin, S. *Science* **2017**, 357, 575. <https://doi.org/10.1126/science.aan6206>



- Avoids the use of stoichiometric amount of high valent metals or hyper-valent iodines
- Exhibits exceptional substrate generality and functional group tolerance
- High reactivity

Lin, S. *Science* **2017**, *357*, 575. <https://doi.org/10.1126/science.aan6206>

## Aminoxyl-catalyzed electrochemical diazidation



Lin, S. *J. Am. Chem. Soc.* **2019**, *141*, 2825. <https://doi.org/10.1021/jacs.8b13192>