

In-Class Exercise:
Electrophilic Aromatic Substitution Mechanisms

In lecture, we drew the mechanism by which toluene reacts with NO_2^+ and $^-\text{OSO}_3\text{H}$ to generate *ortho*- and *meta*-substituted electrophilic addition products. On your own,

- Draw a mechanism for the formation of *para*-nitrotoluene from this reaction.
- Explain why this *para*-substituted product is favored, by illustrating how the intermediate carbocation in the mechanism is stabilized by the methyl group.

