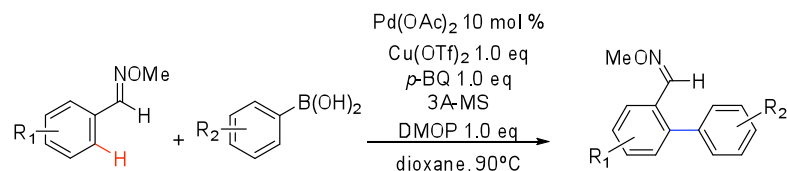


## Background:

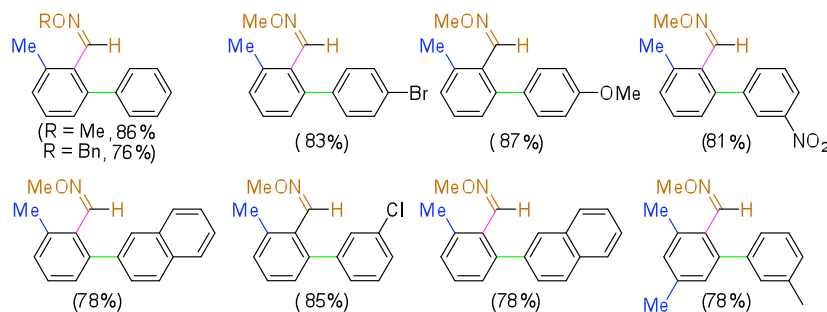
Our research focused on Pd(II)-catalyzed arylation of benzaldoximes by C-H activation using aryl boronic acids to form coupled *o*-arylated benzaldoximes, which can undergo a series of cascade reactions in one pot or two pots to form various compounds from the same starting materials.

After making the coupled *o*-arylated benzaldoximes, we turned our attention specifically to the proton-promoted hydrolysis to form the *o*-arylated benzaldehydes.

## Direct Arylation of Benzaldoximes via Pd-cat. C-H Activation:



### Selected Results:



## Conclusions:

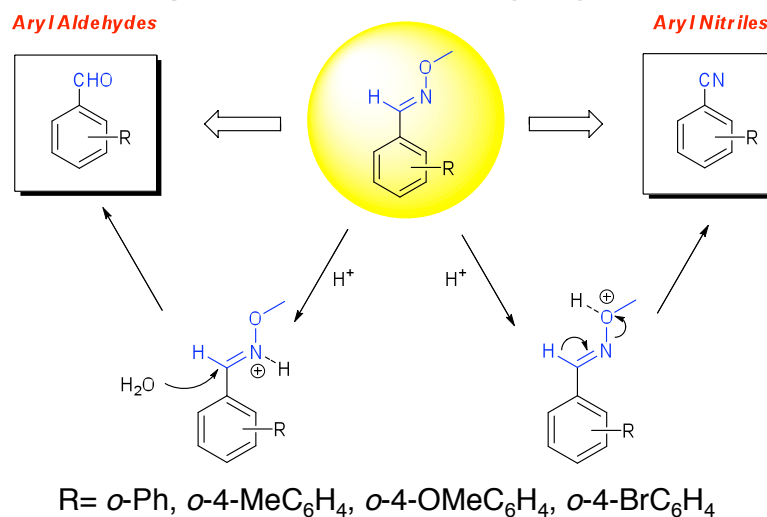
The scope of substrates is extensive, as products of the direct arylation are obtained in generally moderate to good yields. Most arylboronic acids work well, regardless if *meta* or *para* substituents are present, or if the substituents are electron-donating or electron-withdrawing.

However, hydrolysis fails to produce the *o*-arylated benzaldehyde in acceptable yields under current experimental conditions.

## Discussion:

Coupled *o*-arylated benzaldoximes have special features that prevent obtaining the *o*-arylated benzaldehyde exclusively. A competitive elimination produces an aryl nitrile. Both processes are promoted by a proton. It is a challenge to obtain chemoselectivity by optimizing the reaction conditions.

## Proposed Mechanism for Hydrolysis:



## Acknowledgements:

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