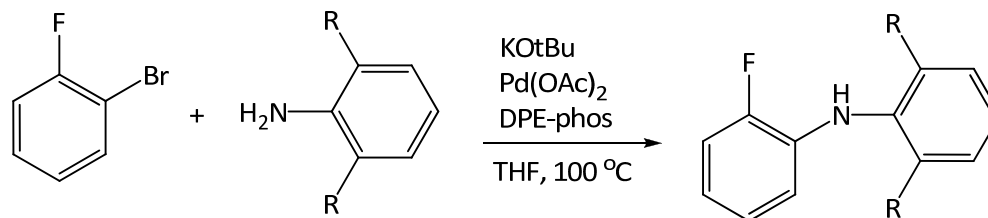


Demystifying Microwave Assistance in Homogeneous Catalysis

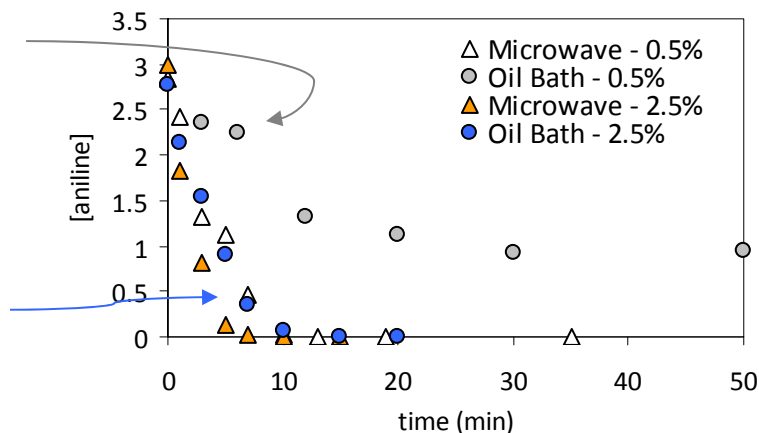
Andrew W. Holland, Department of Chemistry, Idaho State University, Pocatello, ID, 83209-8023

Microwave heating accelerates many chemical reactions, and we have studied the progress of example reactions over time to identify the source of this effect.



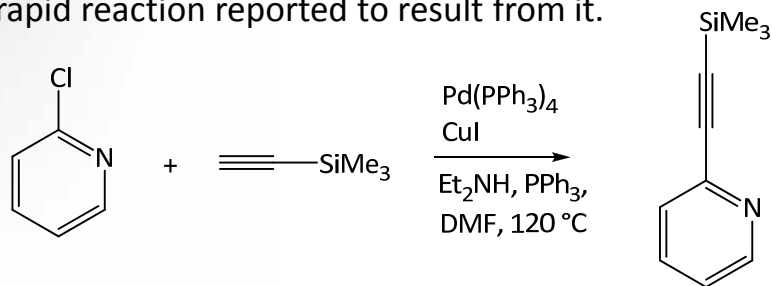
At low catalyst loadings, the conventional reaction slows dramatically and longer reaction times are required.

At higher catalyst loadings, reaction rates are much more similar.



The diminished microwave effect at high catalyst concentrations suggests microwave heating may serve to preserve small amounts of most reactive compounds, which matters less if they are more abundant.

Side-by-side comparison of heating methods for another reaction showed that microwave heating was not actually required to achieve the more rapid reaction reported to result from it.



negligible microwave effect observed!

