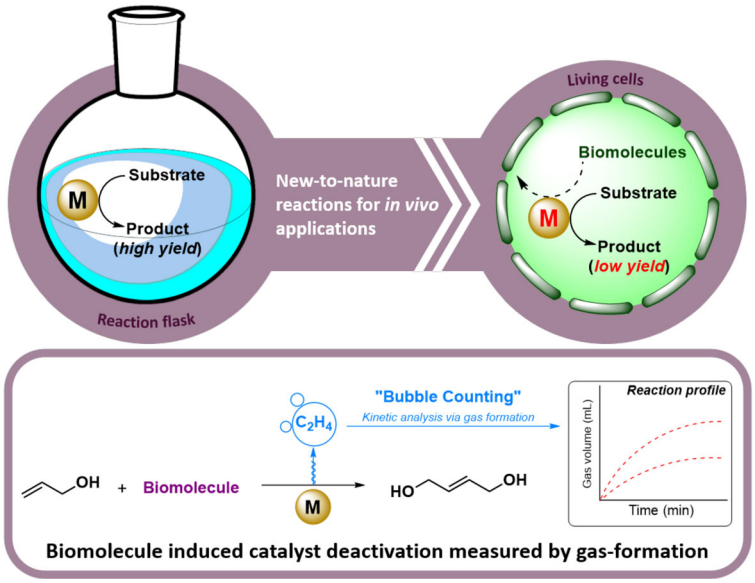
# Fast and Precise Online Measurements to Study Biomolecule Induced Catalyst Deactivation

*E.J. Meeus, Van 't Hoff Institute for Molecular Sciences, University of Amsterdam*
*R. Ham, P.C.M. Laan, B. de Bruin, J.N.H. Reek, Van 't Hoff Institute for Molecular Sciences, University of Amsterdam*

Performing transition metal catalyzed reactions under *in vivo* conditions enables new strategies in drug delivery, *in vivo* modifications of natural substrates, and provides new tools for live imaging in cells. This requires transferring organometallic catalysts from reaction flasks into living cells. To our despite, transition metal catalysis *in vivo* is often paired with a major decrease in activity, which is likely induced by the presence of biomolecules. However, previous work has failed to address how such molecules deactivate transition metal catalysts. Consequently, a precise, insightful and broadly applicable method, that allows to screen and study the influence of biomolecules on the activity of transition metal complexes during catalysis, is still absent. Therefore, this study demonstrates how the activity of transition metal catalysts in the presence of biomolecules can be investigated under biologically relevant conditions. More specifically, fast and precise online measurements were combined with a bio-additive screening to determine the influence of biomolecules on the activity of ruthenium catalyzed aqueous olefin metathesis.

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