

Catalysis, chemistry, and automation

Addressing complexity to explore practical limits of homogeneous Mn catalysis

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Propositions

accompanying the dissertation

Catalysis, chemistry, and automation

by

Robbert van Putten

1. Introduction of standardised operating procedures for catalytic tests will greatly improve the value and usability of literature data, as well as experimental reproducibility (**Chapter 7**).
2. In homogeneous catalysis, the term *catalyst* is often inaccurate and should be replaced by one that holistically captures the complexity of real *catalytic systems* (**Chapters 2-5**).
3. Catalyst deactivation should be investigated more often and more thoroughly if researchers intend to produce practically useful catalytic systems (**Chapters 3 & 4**).
4. Knowing how to manage expectations is one of the most valuable and usable skills one obtains while working on a Ph.D. It is also one of the most difficult to master.
5. Organic chemists are overrepresented as editors of catalysis journals and should focus less on semi-arbitrary substrate scopes and isolated yields. If additional experiments are required, kinetic measurements should often take priority.
6. Generalists deserve more appreciation in a hyperspecialised world, for without generalists, specialists would struggle to talk to those outside their discipline.
7. The pursuit of 'high-impact' papers no longer makes sense now that works are indexed, conveniently searchable, and distributed digitally.
8. Peer review must become fully transparent.
9. Business education deserves a more prominent place in curricula of academic (STEM) education to better prepare students for life outside of academia.

These propositions are regarded as opposable and defensible, and have been approved as such by promoters prof. dr. E.A. Pidko and prof. dr. K.F. Jensen.