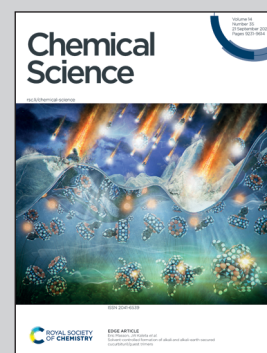


Showcasing research from Professor Alain Jonas' laboratory, Université catholique de Louvain, Belgium, and Professor Mathieu Surin's laboratory, Université de Mons, Belgium.

Dynamic self-assembly of supramolecular catalysts from precision macromolecules

The self-assembly of two complementary precision oligomers leads to a collection of linear and cyclic oligomers in which di(oligomeric) macrocycles are favored at low concentration. In the macrocycles, the five catalytic groups needed for the Copper(I)/TEMPO-catalyzed aerobic oxidation of alcohols are brought closely together as shown by molecular dynamics simulations and network analysis, resulting in high catalytic turnover frequencies even at high dilution (cover image). The self-assembly of the complementary oligomers and their catalytic activity are mathematically described, which provides guidelines to further improve self-assembling catalytic systems.

As featured in:



See Mathieu Surin,
Alain M. Jonas *et al.*,
Chem. Sci., 2023, **14**, 9283.