

Manfred T. Reetz – A Pioneer in Chemical Synthesis

Sun, Zhoutong; Hollmann, Frank

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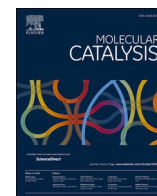
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Manfred T. Reetz – A Pioneer in Chemical Synthesis

Manfred T. Reetz stands as one of the most influential organic chemists of our era. His professional journey has been dedicated to the advancement of catalysts, initially focusing on classical transition metal catalysis and later pioneering selective enzyme catalysis. His groundbreaking work in protein engineering for evolving stereoselective enzymes for use in synthetic organic chemistry, originally through random mutagenesis techniques such as epPCR and DNA shuffling in the late 1990s, has profoundly shaped the field. Reetz developed some of the most powerful high-throughput assays for screening extensive mutant libraries of that time.

Recognising that simply expanding libraries of mutants and improving screening assays was insufficient, Reetz, from the early 2000s onwards, introduced semi-rational, structure-based mutagenesis strategies. Notable among these are Iterative Saturation Mutagenesis (ISM), Combinatorial Active-site Saturation Test (CAST), and Focused Rational Iterative Saturation Mutagenesis (FRISM). These methodologies have now become standard tools in enzyme engineering.

On a personal level, Reetz has always been more a mentor than a supervisor, offering his mentees the freedom to explore and the guidance they required. His colleagues appreciated his enthusiasm for scientific discourse, his fairness, and his innovative thinking. Even after their tenure in Bonn, Marburg, Mülheim, or Tianjin, Reetz maintained a keen interest in their scientific progress, often providing valuable advice. Consequently, it was effortless to find contributors among his former coworkers for this special issue in his honour.

We are proud to present a collection of original contributions and review articles from his former coworkers, reflecting the breadth of Manfred's research interests. This special issue begins with contributions on chemical catalysis, covering electrocatalysis [1], heterogeneous catalysis [2,3], and homogeneous catalysis [4–6].

The biocatalysis-focused contributions include examples of enzyme engineering [7–12] and chemical synthesis using engineered enzymes [13–20].

We trust that readers will find this compilation of contemporary catalysis as compelling as we do. More importantly, we sincerely wish Manfred many more years of scientific discovery and the joy of family life!

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Zhoutong Sun^{a,b}, Frank Hollmann^{b,*}

^a Key Laboratory of Engineering Biology for Low-Carbon Manufacturing, Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences, Tianjin 300308, China

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^b Department of Biotechnology, Delft University of Technology, Van der Maasweg 9, 2628BL, Delft, Netherlands

* Corresponding author
E-mail address: f.hollmann@tudelft.nl (F. Hollmann).