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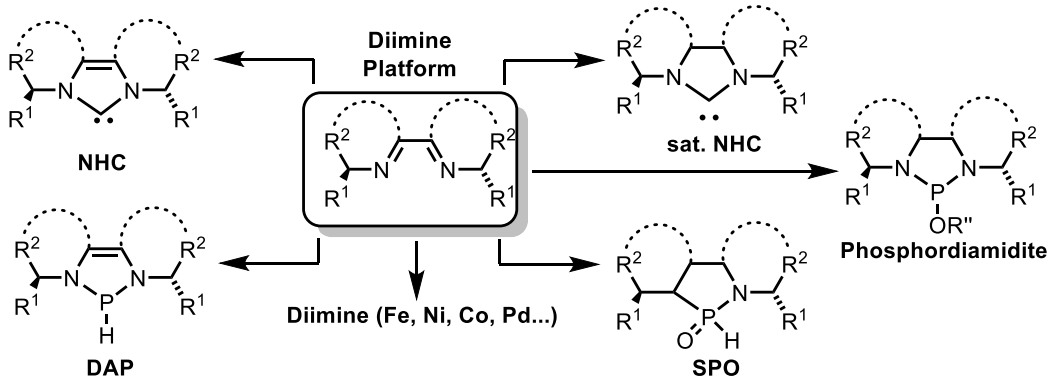
Access to robust tailored chiral ligands is of critical importance for advances in homogenous enantioselective catalysis. The design and development of novel ligand libraries is often a time-consuming and often tedious trial-and-error process. We seek to identify new privileged chiral elements / scaffolds which could be rapidly adapted and used for a broad range of reaction types. Pairing the structural data of the chiral micro environments of the catalytically active sites with computational selectivity predictions sharpens the focus on the preparation of "high potential" catalyst candidates for the library. The presentation will cover recent examples of my laboratory.



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[2] Cao, Y.-X., Wodrich, M. D.; Cramer, N. *Nat. Commun.* **2023**, *14*, 7640.
[3} Zhang, G.; Wodrich, M. D.; Cramer, N. *Science* **2024**, *383*, 395-401.

Short CV: Nicolai Cramer obtained his PhD from the University of Stuttgart, Germany in 2005. After postdoctoral studies with Prof. Barry Trost at Stanford as Feodor-Lynen fellow of the Humboldt foundation, he started in 2007 his independent career as Habilitant associated to the chair of Prof. Erick Carreira at the ETH Zurich, Switzerland. He received the venia legendi in 2010 and subsequently moved to EPFL as Assistant Professor for Organic Chemistry heading the Laboratory of Asymmetric Catalysis and Synthesis. Nicolai was promoted to Associate Professor in 2013, and subsequently to Full Professor in 2015. From 2020-2024, he was the director of the Institute for Chemistry and Chemical Engineering at EPFL. A key focus of his research is the development of asymmetric C-H bond functionalizations and the design of broadly useful chiral ligands.