Eric Meggers – *List of Publications*

Updated August 31, 2024

- Co-author on 208 peer-reviewed research publications, 25 reviews and accounts, and 6 patents or patent applications
- Total citations = 16802, h-index = 76 (Web of Science, all databases, August 31, 2024)

Top-10 Publications

- Stereocontrolled 1,3-nitrogen migration to access chiral α-amino acids: C.-X. Ye, X. Shen, S. Chen, E. Meggers, *Nat. Chem.* **2022**, *14*, 566-573.
- Chiral-at-Iron Catalyst: Expanding the Chemical Space for Asymmetric Earth-Abundant Metal Catalysis: Y. Hong, L. Jarrige, K. Harms, E. Meggers, *J. Am. Chem. Soc.* **2019**, *141*, 4569-4572.
- Electricity-Driven Asymmetric Lewis Acid Catalysis: X. Huang, Q. Zhang, J. Lin, K. Harms, E. Meggers, *Nat. Catal.* **2019**, *2*, 34-40.
- Direct Visible-Light-Excited Asymmetric Lewis Acid Catalysis of Intermolecular [2+2] Photocycloadditions: X. Huang, T. R. Quinn, K. Harms, R. D. Webster, L. Zhang, O. Wiest, E. Meggers, *J. Am. Chem. Soc.* **2017**, *139*, 9120-9123.
- Octahedral Ruthenium Complex with Exclusive Metal-Centered Chirality for Highly Effective Asymmetric Catalysis: Y. Zheng, Y. Tan, K. Harms, M. Marsch, R. Riedel, L. Zhang, E. Meggers, *J. Am. Chem. Soc.* **2017**, *139*, 4322-4325.
- Metal-Templated Design: Enantioselective Hydrogen-Bond-Driven Catalysis Requiring Only Parts-per-Million Catalyst Loading: W. Xu, M. Arieno, H. Löw, K. Huang, X. Xie, T. Cruchter, Q. Ma, J. Xi, B. Huang, O. Wiest, L. Gong, E. Meggers, *J. Am. Chem. Soc.* **2016**, 138, 8774-8780.
- Visible Light Activated Asymmetric Photoredox Transition Metal Catalysis: H. Huo, X. Shen, C. Wang, L. Zhang, P. Röse, L.-A. Chen, K. Harms, M. Marsch, G. Hilt, E. Meggers, *Nature* **2014**, *515*, 100-103.
- Asymmetric Catalysis with Substitutionally Labile yet Stereochemically Stable Chiral-at-Metal Iridium(III) Complex: H. Huo, C. Fu, K. Harms, E. Meggers, *J. Am. Chem. Soc.* **2014**, *136*, 2990-2993.
- Structurally Sophisticated Octahedral Metal Complexes as Highly Selective Protein Kinase Inhibitors: L. Feng, Y. Geisselbrecht, S. Blanck, A. Wilbuer, G. E. Atilla-Gokcumen, P. Filippakopoulos, K. Kräling, M. A. Celik, K. Harms, J. Maksimoska, R. Marmorstein, G. Frenking, S. Knapp, L.-O. Essen, E. Meggers, *J. Am. Chem. Soc.* **2011**, *133*, 5976-5986.
- A Simple Glycol Nucleic Acid: L. Zhang, A. Peritz, E. Meggers, *J. Am. Chem. Soc.* **2005**, *127*, 4174-4175.

Complete List of Peer-Reviewed Research Publications

208. α-Amino Acid Synthesis by 1,3-Nitrogen Migration: An Update: K. Yin, E. Meggers, *Synthesis* **2024**, *56*, 2670-2680 (featured on cover).
207. Photoelectrochemical asymmetric dehydrogenative [2+2] cycloaddition between C-C single and double bonds via the activation of two C(sp^3)–H bonds: P. Xiong, S. I. Ivlev, E. Meggers, *Nat. Catal.* **2023**, *6*, 1186-1193 (Synfact fo the Month, *Synfacts* **2024**, *20*, 0147).
206. Asymmetric Intramolecular Oxyamination of Alkenes Enabled by a Chiral-at-Ruthenium Catalyst: X. Nie, C. W. Ritter, M. Hemming, S. I. Ivlev, X. Xie, S. Chen, E. Meggers, *Angew. Chem. Int. Ed.* **2023**, *62*, e202314398 (*Synfacts* **2024**, *20*, 0146).

205. Enantioselective and Enantioconvergent Iron-Catalyzed C(sp^3)-H Aminations to Chiral 2-Imidazolidinones: T. Cui, C.-X. Ye, J. Thelemann, D. Jenisch, E. Meggers, *Chin. J. Chem.* **2023**, *41*, 2065-2070 (NHU-CJC Award for high novelty and significance).

204. Design of Stereogenic-at-Iron Catalysts with a (3+2+1)-Ligand Sphere: D. Baran, L. Hinterlang, S. I. Ivlev, E. Meggers, *Eur. J. Inorg. Chem.* **2023**, *26*, e202300148 (Editors' Choice: Spotlights).

203. *N*-Boc-Protected α-Amino Acids by 1,3-Migratory Nitrene C(sp^3)-H Insertion: B. Zhou; C.-X. Ye, E. Meggers, *Eur. J. Org. Chem.* **2023**, *26*, e202300296.

202. Trading Symmetry for Stereoinduction in Tetradentate, non-C_2-Symmetric Fe(II)-Complexes for Asymmetric Catalysis: P. S. Steinlandt, M. Hemming, X. Xie, S. I. Ivlev, E. Meggers, *Chem. Eur. J.* **2023**, *29*, e202300267.

201. Expedited synthesis of α-amino acids by single-step enantioselective α-amination of carboxylic acids: C.-X. Ye, D. R. Dansby, S. Chen, E. Meggers, *Nat. Synth.* **2023**, *2*, 645-652.

200. Symmetry-breaking host-guest assembly in a hydrogen-bonded supramolecular system: S. Horiuchi, T. Yamaguchi, J. Tessarolo, H. Tanaka, E. Sakuda, Y. Arikawa, E. Meggers, G. H. Clever, K. Umakoshi, *Nat. Commun.* **2023**, *14*, 155.

199. Chiral-at-Ru Catalyst with Cyclometalated Imidazo[1,5-*a*]pyridinylidene for Enantioselective Intramolecular Cyclopropanations: F. Han, Y. Xie, X. Xie, S. I. Ivlev, E. Meggers, *Synlett* **2023**, *34*, 1403-1408.

198. Improving the Configurational Stability of Chiral-at-Iron Catalysts Containing Two *N*-(2-Pyridyl)-Substituted N-Heterocyclic Carbene Ligands: N. Demirel, J. Haber, S. I. Ivlev, E. Meggers, *Organometallics* **2022**, *24*, 3852-3860 (with Cover picture).

197. Nitrene-Mediated C−H Oxygenation: Catalytic Enantioselective Formation of Five-Membered Cyclic Organic Carbonates: X. Nie, C.-X. Ye, S. I. Ivlev, E. Meggers, *Angew. Chem. Int. Ed.* **2022**, e202211971.

196. Stereocontrolled 1,3-nitrogen migration to access chiral α-amino acids: C.-X. Ye, X. Shen, S. Chen, E. Meggers, *Nat. Chem.* **2022**, *14*, 566-573 (featured by M. Zanda, *Synform* **2022/10**, A153-A154).

195. Cyclometalated Chiral-at-Ruthenium Catalyst for Enantioselective Ring-Closing C(sp^3)-H Carbene Insertion to Access Chiral Flavanones: F. Han, P. H. Choi, C.-X. Ye, Y. Grell, X. Xie, S. I. Ivlev, S. Chen, E. Meggers, *ACS Catal.* **2022**, *12*, 10304-10312.

194. Electrochemical Enantioselective Nucleophilic α-C(sp^3)–H Alkenylation of 2-Acyl Imidazoles: P. Xiong, M. Hemming, S. I. Ivlev, E. Meggers, *J. Am. Chem. Soc.* **2022**, *144*, 6964-6971.

193. Deracemization of Chiral-at-Ruthenium Catalyst by Diastereoselective Dynamic Resolution: D. Baran, S. I. Ivlev, E. Meggers, *Organometallics* **2022**, *41*, 52-59 (ACS Editors' Choice).

192. Catalytic Enantioselective Oxidative Homocoupling of 2-Acyl Imidazoles: N. Demirel, J. Qin. S. I. Ivlev, E. Meggers, *Adv. Synth. Catal.* **2021**, *363*, 4695-4700.

191. Enantioselective α-Fluorination and α-Chlorination of *N*-Acyl Pyrazoles Catalyzed by Non-C_2-Symmetric Chiral-at-Rhodium Catalyst: Y. Grell, X. Xie, S. I. Ivlev, E. Meggers, *ACS Catal.* **2021**, *11*, 11396-11406.

190. Catalytic α-Deracemization of Ketones Enabled by Photoredox Deprotonation and Enantioselective Protonation: C. Zhang, A. Z. Gao, X. Nie, C.-X. Ye, S. I. Ivlev, S. Chen, E. Meggers, *J. Am. Chem. Soc.* **2021**, *143*, 13393-13400.

189. Understanding the mechanism of direct visible-light-activated [2 + 2] cycloadditions mediated by Rh and Ir photocatalysts: combined computational and spectroscopic studies: H. Jung, M. Hong, M. Marchini, M. Villa, P. S. Steinlandt, X. Huang, M. Hemming, E. Meggers, P. Ceroni, J. Park, M.-H. Baik, *Chem. Sci.* **2021**, *12*, 9673-9681.

188. Stereogenic-at-Iron Catalysts with a Chiral Tripodal Pentadentate Ligand: P. S. Steinlandt, X. Xie, S. Ivlev, E. Meggers, *ACS Catal.* **2021**, *11*, 7467-7476.

187. Chiral-at-Iron Catalyst for Highly Enantioselective and Diastereoselective Hetero-Diels-Alder Reaction: Y. Hong, T. Cui, S. Ivlev, E. Meggers, *Chem. Eur. J.* **2021**, 8557-8563 ("VIP").

186. Chiral-at-Ruthenium Catalysts with Mixed Normal and Abnormal N-Heterocyclic Carbene Ligands: E. Winterling, S. Ivlev, E. Meggers, *Organometallics* **2021**, *40*, 1148-1155.

185. Bis-Cyclometalated Indazole and Benzimidazole Chiral-at-Metal Complexes: Synthesis and Asymmetric Catalysis: S. Brunen, Y. Grell, P. S. Steinlandt, K. Harms, E. Meggers, *Molecules* **2021**, *26*, 1822.

184. Efficient Amination of Activated and Non-Activated C(sp^3)-H Bonds with Simple Iron-Phenanthroline Catalyst: L. Jarrige, Z. Zhou, M. Hemming, E. Meggers, *Angew. Chem. Int. Ed.* **2021**, *60*, 6314-6319 (*Synfacts* **2021**, *17*, 0377).

183. Ruthenium Pybox-Catalyzed Enantioselective Intramolecular C–H Amination of Sulfamoyl Azides en Route to Chiral Vicinal Diamines: X. Nie, Z. Yan, S. Ivlev, E. Meggers, *J. Org. Chem.* **2021**, *86*, 750-761 (highlighted in Organic Chemistry Portal).

182. Catalytic Enantioselective Synthesis of β-Amino Alcohols by Nitrene Insertion: Z. Zhou, Y. Tan, X. Shen, S. Ivlev, E. Meggers: *Sci. China Chem.* **2021**, *64*, 452-458.

181. Intermolecular C(sp^3)-H Bond Oxygenation by Transition-Metal Acylnitrenoids: Y. Tan, S. Chen, Z. Zhou, Y. Hong, S. Ivlev, K. N. Houk, E. Meggers, *Angew. Chem. Int. Ed.* **2020**, *59*, 21706-21710 (*Synfacts* **2020**, *16*, 1430).

180. Asymmetric Ring-Closing Aminooxygenation of Alkenes en Route to 2-Amino-1,3-Diols with Vicinal Stereocenters: Y. Tan, F. Han, M. Hemming, J. Wang, K. Harms, X. Xie, E. Meggers, *Org. Lett.* **2020**, *22*, 6653-6656 (featured by D. F. Faber, *Org. Chem. Highlights* **2021**, July 26: "Arrays of Stereogentic Centers")

179. Asymmetric Catalysis with a Chiral-at-Osmium Complex. G. Wang, Z. Zhou, X. Shen, E. Meggers, *Chem. Commun.* **2020**, *56*, 7714-7717 ("HOT Article").

178. Enantioselective Ring-Closing C-H Amination of Urea Derivatives: Z. Zhou, Y. Tan, T. Yamahira, S. Ivlev, X. Xie, R. Riedel, M. Hemming, M. Kimura, E. Meggers, *Chem* **2020**, 6, 2024-2034 (highlighted: N. P. van Leest, K. M. van Vliet, B. de Bruin, *Chem* **2020**, *6*, 1851-1853).

177. Atroposelective Synthesis of Axially Chiral N-Arylpyrroles by Chiral-at-Rhodium Catalysis: C.-X. Ye, S. Shen, F. Han, X. Xie, S. Ivlev, K. N. Houk, E. Meggers, *Angew. Chem. Int. Ed.* **2020**, *59*, 13552-13556.

176. Complementing Pyridine-2,6-bis(oxazoline) with Cyclometalated N-Heterocyclic Carbene for Asymmetric Ruthenium Catalysis: L. Li, F. Han, X. Nie, Y. Hong, S. Ivlev, E. Meggers, *Angew. Chem. Int. Ed.* **2020**, *59*, 12392-12395.

175. Ruthenacarboran-Phenanthroline Derivatives as Potential Metallodrugs: M. Kellert, I. Sárosi, R. Rajaratnam, E. Meggers, P. Lönnecke, E. Hey-Hawkins, *Molecules* **2020**, *25*, 2322.

174. Directed Evolution of an Fe^{II}-Dependent Halogenase for Asymmetric C(sp^3)-H Chlorination: S. Duewel, L. Schmermund, T. Faber, K. Harms, V. Srinivasan, E. Meggers, S. Hoebenreich, *ACS Catal.* **2020**, *10*, 1272-1277.

173. Non-C_2-Symmetric Chiral-at-Ruthenium Catalyst for Highly Efficient Enantioselective Intramolecular C(sp^3)-H Amidation: Z. Zhou, S. Chen, Y. Hong, E. Winterling, Y. Tan, M. Hemming, K. Harms, K. N. Houk, E. Meggers, *J. Am. Chem. Soc.* **2019**, *141*, 19048-19057.

172. Asymmetric Synthesis of 1,4-Dicarbonyl Compounds from Aldehydes via the Marriage of Hydrogen Atom Transfer Photocatalysis with Chiral Lewis Acid Catalysis: Y. Kuang, K. Wang, X. Shi, X. Huang, E. Meggers, J. Wu, *Angew. Chem. Int. Ed.* **2019**, *58*, 16859-16863.

171. Bis-Cyclometalated Indazole Chiral-at-Rhodium Catalyst for Asymmetric Photoredox Cyanoalkylation: P. S. Steinlandt, W. Zuo, K. Harms, E. Meggers, *Chem. Eur. J.* **2019**, *25*, 15333-15340 ("Hot Paper").

170. Enantioconvergent Photoredox Radical−Radical Coupling Catalyzed by a Chiral-at-Rhodium Complex: Z. Zhou, X. Nie, K. Harms, R. Riedel, L. Zhang, E. Meggers, *Sci. China Chem.* **2019**, *62*, 1512-1518.
169. Chiral-at-Rhodium Catalyst Containing Two Different Cyclometalating Ligands: Y. Grell, Y. Hong, X. Huang, T. Mochizuki, X. Xie, K. Harms, E. Meggers, *Organometallics* **2019**, *38*, 3948-3954.
168. Chiral Bis(oxazoline) Ligands as C_2-Symmetric Chiral Auxiliaries for the Synthesis of Enantiomerically Pure Bis-Cyclometalated Rhodium(III) Complexes: Y. Grell, N. Demirel, K. Harms, E. Meggers, *Organometallics* **2019**, *38*, 3852-3859.
167. Asymmetric Photocatalysis by Intramolecular Hydrogen-Atom Transfer in Photoexcited Catalyst–Substrate Complex: C. Zhang, S. Chen, C.-X. Ye, K. Harms, L. Zhang, K. N. Houk, E. Meggers, *Angew. Chem. Int. Ed.* **2019**, *58*, 14462-14466.
166. Chiral-at-Iron Catalyst: Expanding the Chemical Space for Asymmetric Earth-Abundant Metal Catalysis: Y. Hong, L. Jarrige, K. Harms, E. Meggers, *J. Am. Chem. Soc.* **2019**, *141*, 4569-4572.
165. Enantioselective Intramolecular C-H Amination of Aliphatic Azides by Dual Ruthenium and Phosphine Catalysis: J. Qin, Z. Zhou, T. Cui, M. Hemming, E. Meggers, *Chem. Sci.* **2019**, *10*, 3202-3207.
164. Electricity-Driven Asymmetric Lewis Acid Catalysis: X. Huang, Q. Zhang, J. Lin, K. Harms, E. Meggers, *Nat. Catal.* **2019**, *2*, 34-40 (featured in "Katalyse unter Strom": N. Schützenmeister, M. Assmann, *Nachrichten aus der Chemie* **2019**, *67*, 67-72).
163. Catalytic Enantioselective Intramolecular C(sp^3)-H Amination of 2-Azidoacetamides: Z. Zhou, S. Chen, J. Qin, X. Nie, X. Zheng, K. Harms, R. Riedel, K. N. Houk, E. Meggers, *Angew. Chem. Int. Ed.* **2019**, 58, 1088-1093.
162. Kinetic Resolution of Epoxides with CO_2 Catalyzed by a Chiral-at-Iridium Complex: J. Qin, V. A. Larionov, K. Harms, E. Meggers, *ChemSusChem* **2019**, *12*, 320-325.
161. Chiral-at-Ruthenium Catalyst with Sterically Demanding Furo[3,2-*b*]pyridine Ligands: T. Cui, J. Qin, K. Harms, E. Meggers, *Eur. J. Inorg. Chem.* **2019**, 195-198 ("Very Important Paper").
160. Visible-Light-Activated Catalytic Enantioselective β-Alkylation of α,β-Unsaturated 2-Acyl Imidazoles using Hantzsch Esters as Radical Reservoirs: F. F. de Assis, X. Huang, M. Akiyama, R. A. Pilli, E. Meggers, *J. Org. Chem.* **2018**, *83*, 10922-10932.
159. A Chiral-at-Metal Iridium Catalyst with Two Simple but Sterically Demanding Cyclometalated N-Heterocyclic Carbene Ligands: Y. Tan, K. Harms, E. Meggers, *Eur. J. Inorg. Chem.* **2018**, 2500-2504.
158. Synthesis of β-Substituted γ-Aminobutyric Acid Derivatives via Enantioselective Photoredox Catalysis: J. Ma, J. Lin, L. Zhao, K. Harms, M. Marsch, X. Xie, E. Meggers, *Angew. Chem. Int. Ed.* **2018**, *57*, 11193-11197.
157. Catalytic Asymmetric Dearomatization by Visible-Light-Activated [2+2] Photocycloaddition: N. Hu, H. Jung, Y. Zheng, J. Lee, L. Zhang, Z. Ullah, X. Xie, K. Harms, M.-H. Baik, E. Meggers, *Angew. Chem. Int. Ed.* **2018**, *57*, 6242-6246 (highlighted in *Science Bulletin* **2018**, *63*, 809-811).
156. Arylketone π-Conjugation Controls Enantioselectivity in Asymmetric Alkynylations Catalyzed by Centrochiral Ruthenium Complexes: S. Chen, Y. Zheng, T. Cui, E. Meggers, K. N. Houk, *J. Am. Chem. Soc.* **2018**, *140*, 5146-5152.
155. Asymmetric Nazarov Cyclizations Catalyzed by Chiral-at-Metal Complexes: T. Mietke, T. Cruchter, V. A. Larionov, T. Faber, K. Harms, E. Meggers, *Adv. Synth. Catal.* **2018**, *360*, 2093-2100 ("VIP", *Synfacts* **2018**, 0729).
154. Asymmetric [3+2] Photocycloadditions of Cyclopropanes with Alkenes or Alkynes via Visible Light Excitation of Catalyst-Bound Substrates: X. Huang, J. Lin, T. Shen, K. Harms, M. Marchini, P. Ceroni, E. Meggers, *Angew. Chem. Int. Ed.* **2018**, *57*, 5454-5458 ("Hot Paper").

153. Preparation of Chiral-at-Metal Catalysts and their Use in Asymmetric Photoredox Chemistry: J. Ma, X. Zhang, X. Huang, S. Luo, E. Meggers, *Nat. Protocols* **2018**, *13*, 605-632.
152. Catalytic Enantioselective Synthesis of a Key Propargylic Alcohol Intermediates of the Anti-HIV Drug Efavirenz: Y. Zheng, L. Zhang, E. Meggers, *Org. Process Res. Dev.* **2018**, *22*, 103-107 (*Synfacts* **2018**, 0343).
151. One-Pot Sequential Photoredox and Asymmetric Transfer Hydrogenation with a Single Catalyst: X. Zhang, J. Qin, X. Huang, E. Meggers, *Eur. J. Org. Chem.* **2018**, 571-577.
150. Sequential Asymmetric Hydrogenation and Photoredox Chemistry with a Single Catalyst: X. Zhang, J. Qin, X. Huang, E. Meggers, *Org. Chem. Front.* **2018**, *5*, 166-170.
149. Catalytic Asymmetric Synthesis of Fluoroalkyl-Containing Compounds by Three-Component Photoredox Chemistry: J. Ma, X. Xie, E. Meggers, *Chem. Eur. J.* **2018**, *24*, 259-265.
148. Catalytic Asymmetric Synthesis of a Nitrogen Heterocycle through Stereocontrolled Direct Photoreaction from Electronically Excited State: X. Huang, X. Li, X. Xie, R. Riedel, E. Meggers, *Nat. Commun.* **2017**, *8*, 2245.
147. Visible-Light-Activated Asymmetric β-C–H Functionalization of Acceptor-Substituted Ketones with 1,2-Dicarbonyl Compounds: J. Ma, A. R. Rosales, X. Huang, K. Harms, R. Riedel, O. Wiest, E. Meggers, *J. Am. Chem. Soc.* **2017**, *139*, 17245-17248 (*Synfacts* **2018**, 0157).
146. Origins of Enantioselectivity in Asymmetric Radical Additions to Octahedral Chiral-at-Rhodium Enolates: A Computational Study: S. Chen, X. Huang, E. Meggers, K. N. Houk, *J. Am. Chem. Soc.* **2017**, *139*, 17902-17907.
145. Combining the Catalytic Enantioselective Reaction of Visible-Light-Generated Radicals with a By-Product Utilization System: X. Huang, S. Luo, O. Burghaus, R. D. Webster, K. Harms, E. Meggers, *Chem. Sci.* **2017**, *8*, 7126-7131.
144. Suzuki Cross-Coupling for Post-Complexation Derivatization of Non-Racemic Bis-Cyclometalated Iridium(III) Complexes: T. Mietke, T. Cruchter, E. Winterling, M. Tripp, K. Harms, E. Meggers, *Chem. Eur. J.* **2017**, *23*, 12363-12371.
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139. Asymmetric Nucleophilic Catalysis with an Octahedral Chiral-at-Metal Iridium(III) Complex: T. Cruchter, M. G. Medvedev, X. Shen, T. Mietke, K. Harms, M. Marsch, E. Meggers, *ACS Catal.* **2017**, *7*, 5151-5162 (*Synfacts* **2017**, 0945).
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135. Octahedral Ruthenium Complex with Exclusive Metal-Centered Chirality for Highly Effective Asymmetric Catalysis: Y. Zheng, Y. Tan, K. Harms, M. Marsch, R. Riedel, L. Zhang, E. Meggers, *J. Am. Chem. Soc.* **2017**, *139*, 4322-4325 (*Synfacts* **2017**, 0625).
134. Polymer-Supported Chiral-at-Metal Lewis Acid Catalysts: V. A. Larionov, T. Cruchter, T. Mietke, and E. Meggers, *Organometallics* **2017**, *36*, 1457-1460.
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