Xile Hu – Curriculum Vitae

Date of Birth: August 7, 1978
Address: École Polytechnique Fédérale de Lausanne
Institute of Chemical Sciences and Engineering
Laboratory of Inorganic Synthesis and Catalysis
EPFL-SB-ISIC, BCH 3305
CH 1015 Lausanne, Switzerland
Telephone: +41 (0)21 693 97 81
Fax: +41 (0)21 693 93 05
E-mail: xile.hu@epfl.ch
Website: http://lsci.epfl.ch

RESEARCH TOPICS

Our main research goal is to develop catalysts composed of earth-abundant elements for chemical transformations of relevance to synthesis, energy, and sustainability.
Current research topics include:
(i) Base metal catalysis for organic synthesis
(ii) Bio-mimetic and bio-inspired chemistry of redox active enzymes
(iii) Inexpensive and scalable inorganic catalysts for water splitting and CO_2 reduction; solar fuels

EDUCATION

Postdoc., California Institute of Technology, USA, February **2005** – June **2007**.
Advisor: Prof. Jonas C. Peters
Ph.D. in Chemistry, University of California, San Diego, USA, December **2004**.
Advisor: Prof. Karsten Meyer
M.S. in Chemistry, University of California, San Diego, USA, June **2002**.
Advisor: Prof. Karsten Meyer
B.S. in Chemistry, Peking University, Beijing, P. R. China, June **2000**.
Advisor: Prof. Jianhua Lin

AWARDS AND HONORS (independent career)

2019	Fellow, European Academy of Sciences
2019	Royal Society of Chemistry Homogeneous Catalysis Award
2018	Resonate Award, Caltech
2017	National Latsis Prize, Swiss National Science Foundation and the Latsis Foundation
2017, 18	Highly Cited Researcher (Web of Science, Clarivate Analytics)
2017	Tajima Prize, International Society of Electrochemistry
2017	*Organic Letters* Outstanding Publication of the Year Lectureship Award, ACS
2016,18	European Research Council (ERC) Proof-of-Concept Grant
2016	Bau Family Award in Inorganic Chemistry
2015	European Research Council (ERC) Consolidator Grant
2015	Outstanding Reviewer Award, Wiley-VCH, ChemPubSoc Europe, ACES
2015	Young Researcher Award, European Federation of Catalysis Societies
2014	Fellow, Royal Society of Chemistry (UK)
2014	European Medal for Bio-Inorganic Chemistry (Eurobic Medal)
2014	*Organometallics* Young Investigator Fellow, American Chemical Society
2014	Rising Star, International Conference on Coordination Chemistry
2013	*Chemical Society Reviews* Emerging Investigator Lectureship, RSC
2012	Member, Young Academy of Europe
2012	Extraordinary Young Scientist, World Economic Forum
2012	EuCheMS Organic Division Young Investigator
2011	Werner Prize, Swiss Chemical Society
2011	Thieme Chemistry Journal Award
2010	European Research Council (ERC) Starting Grant

2010 Finalist, European Young Chemist Award, EuCheMS Congress
2010 JSP Fellowship, Bürgenstock Conference

RESEARCH AND TEACHING EXPERIENCE

Full Professor of Chemistry, Jun. **2016** –, École Polytechnique Fédérale de Lausanne, Switzerland.

- **Areas of interest:** Organometallic chemistry, synthetic methodology, homogeneous catalysis, reaction mechanism; Energy, electrocatalysis, photocatalysis, water splitting, CO_2 reduction, inorganic materials; Bio-mimetic and bio-speculated coordination chemistry.

Associate Professor of Chemistry (with tenure), Jan. **2013** – May **2016**, École Polytechnique Fédérale de Lausanne, Switzerland.

Tenure-Track Assistant Professor of Chemistry, Jul. **2007** – Dec. **2012**, École Polytechnique Fédérale de Lausanne, Switzerland.

Postdoctoral Scholar, Feb. **2005** – Jun. **2007**, California Institute of Technology, USA.

Graduate Research Assistant, Jan. **2001** – Dec. **2004**, University of California, San Diego, USA.

- **Doctoral thesis title:** Metal complexes of tripodal N-heterocyclic carbene ligands: synthesis, structure, bonding, and reactivity.

Graduate Teaching Assistant, Jan. **2001** – Jun. **2004**, University of California, San Diego, USA.

Undergraduate Research Assistant, Apr. **1999** – Jun. **2000**, Peking University, China.

EDUCATIONAL ACTIVITY

Coordination chemistry (Bachelor level)
Bioinorganic chemistry (Bachelor level)
Catalysis for energy storage (Master level)
Frontier in chemical synthesis – towards sustainable chemistry (Ph.D. level)
Frontier in organic synthesis – synthesis of carbo- and hetero-cycles (Ph.D. level)
Frontier in organic synthesis – stereochemistry (Ph.D. level)

INVITED PROFESSORSHIP

2019, State Key Laboratory of Metal Matrix Composites, Shanghai Jiaotong University
2016, University of Paris Diderot
2016, GIAN Indian Institute of Technology Kanpur

PROFESSIONAL ACTIVITY

Editorial Advisory Board, *Chemical Communications* (RSC), 2012 –
Editorial Board (2013-2016), Editorial Advisory Board (2016 -), *Inorganic Chemistry Frontiers* (RSC)
International Advisory Board, *Chemistry, An Asian Journal* (Wiley), 2013 –
Editorial Advisory Board, *ACS Catalysis*, 2014 – 2018
Advisory Board, *Chem*^{2}, 2017 –
Management Committee, European Cooperation (COST) Action: CM 1003; CM1205
Scientific Commission for Chemistry, Swiss Occidental Universities (CUSO), 2008 – 2011
Ad-Hoc referee for scientific journals, funding agencies, international science prizes, and universities
Organizer or member of organizing committee for: *CUSO Summer School 2009 - chemistry for a sustainable world; Fall meeting of the Swiss Chemical Society 2013; Annual meeting of the international society of electrochemistry 2014; Vice Chair, Gordon Research Conference Renewable Energies, Solar Fuels, 2018; International Conference of Biological Inorganic Chemistry, 2019.*
Session Chair or Discussion leader for: *European biological inorganic chemistry conference 2008; Fall meeting of the Swiss Chemical Society 2011; ACS Spring meeting 2012; Gordon research seminar in solar fuels 2012; MRS Spring meeting 2014; European congress of catalysis 2015; Gordon research conference in solar fuels 2016.*

INVITED TALKS AND DEPARTMENTAL SEMINARS

(i) Plenary, keynote, and named lectures

18. French National Symposium in Solar Fuels, Gif-sur-Yvette, **France**, May 2019. Plenary lecture
17. International Conference on Hydrogenases, Lisbon, **Portugal**, April 2019. Keynote lecture
16. Resnick Young Investigator Symposium, Caltech, Pasadena, **USA**, September 2018. Keynote lecture
15. 69th Annual Meeting of International Society of Electrochemistry, Bologna, **Italy**, September 2018. Award lecture
14. Winter School, Challenges and Opportunities in Energy Research, Crans-Montana, **Switzerland**, March 2018. Plenary Lecture.
13. BASF Research Seminar, **Germany**, September 2017. Keynote Lectures (2).
12. International Symposia for Chinese Organic and Inorganic Chemists, **Singapore**, December 2016. Plenary Lecture
11. 5th International Symposium on Solar Fuels and Solar Cells, Dalian, **China**, October 2016. Keynote Lecture
10. 11th Congress of Catalysis Applied to Fine Chemicals, Lyon, **France**, September 2016. Plenary Lecture
09. Dutch National Chemistry Conference (Chains 2015), Veldhoven, **Netherlands**, December 2015. Keynote Lecture
08. 12th European Congress on Catalysis, Kazan, **Russia**, August 2015. Keynote Lecture
07. 12th European Biological Inorganic Conference, Zurich, **Switzerland**, August 2014. Plenary Lecture
06. EuCheMs Symposium in Organic Free Radicals, Prague, **Czech**, June 2014. Royal Society of Chemistry lecture.
05. Christian Doppler Lecture 2014, Cambridge University, **UK**, March 2014.
04. 6th International Symposium on Molecular Aspects of Catalysis by Sulfides, Satillieu, **France**, May 2013. Keynote Lecture
03. 2012 Congress of Coordination Chemistry, Organometallic Chemistry, and Catalysis (GECOM CONCOORD), Métabief, **France**, June 2012. Plenary Lecture
02. The 2011 Swiss Chemical Society Fall Meeting, Lausanne, **Switzerland**, September 2011. Plenary Lecture
01. University of Zürich, Institute of Inorganic Chemistry, Zürich, **Switzerland**, November 2009. Student-Elected Lecture

(ii) Invited lectures

103. Gordon Research Conference in Organometallic Chemistry, Newport, **USA**, July **2018**. "Cooperative Catalysis by Nickel Pincer Complexes"
102. SCS Seminar, Catalysis Across Scales, Interlaken, Switzerland, June **2018**. "Nickel and iron-containing oxides as oxygen evolution catalysts"
101. GDCh Lecture, Bayer Healthcare and Wuppertal, Wuppertal, Germany, February **2018**. "Base Metal Catalysis"
100. University of Vienna, Vienna, Austria, February **2018**. "Base Metal Catalysis for Radical Alkylation: From Cross Coupling to Functionalization of Alkenes and Alkynes"
99. 2nd International Solar Fuels Conference, San Diego, **USA**, July 2017. "Nickel Iron Oxides as Oxygen Evolution Catalysts"
98. The Scripps Research Institute, La Jolla, **USA**, July 2017**.** "Base Metal Catalysis for Radical Alkylation: From Cross Coupling to Functionalization of Alkenes and Alkynes"
97. University of Zurich, Zurich, **Switzerland**, May 2017. "Earth-abundant catalytic materials for the water splitting reaction"

96. COST Carisma Annual Meeting, Lisbon, **Portugal**, March 2017. "Nickel pincer complexes as hydrosilylation catalysts and enzyme mimics"
95. Leiden University, Leiden, **Netherland**, March 2017. "Earth-abundant catalytic materials for the water splitting reaction"
94. SwissPec Symposium, Lausanne, **Switzerland**, November 2016. "Earth-abundant catalytic materials for the water splitting reaction"
93. EPFL Vallais Campus, Sion, **Switzerland**, October 2016. "Earth-abundant catalytic materials for the water splitting reaction"
92. Pekin University, Beijing, **China**, October 2016. "Earth-abundant catalytic materials for the water splitting reaction"
91. Dalian University of Technology, Dalian, **China**, October 2016. "Transition metal oxides for the oxygen evolution reaction"
90. University of Paris Diderot, Paris, **France**, September 2016. "Understanding and improving transition metal oxides for the oxygen evolution reaction"
89. University of Paris Diderot, Paris, **France**, September 2016. "Development of Earth-abundant catalytic materials for hydrogen evolution"
88. Max Plank Institute – EPFL Workshop "Bio-inspired nanostystems for energy conversion", Berlin, **Germany**, July 2016.
87. India Institute of Technology, Mumbai, **India**, March 2016. "Base Metal Catalysis for Cross-Coupling and Addition Reactions"
86. Indian Institutes of Science Education and Research, Pune, **India**, March 2016. "Base Metal Catalysis for Cross-Coupling and Addition Reactions"
85. The Indian Association for the Cultivation of Science, Kolkata, **India**, March 2016. "Biomimetic chemistry of [Fe]-hydrogenase"
84. India Institute of Technology, Kanpur, **India**, March 2016. "Biomimetic chemistry of [Fe]-hydrogenase"
83. University of Girona, Girona, **Spain**, November 2015. "Base Metal Catalysis for Cross-Coupling and Addition Reactions"
82. Technical University of Berlin, Unicat, Berlin, **Germany**, April 2015. "Inorganic water splitting catalysts: from soft chemical synthesis to integrated photoelectrochemical devices"
81. Nankai University, Tianjin, **China**, April 2015. "Biomimetic chemistry of [Fe]-hydrogenase: from synthetic mimics to modified enzymes"
80. International Iberian Nanotechnology Laboratory, Braga, **Portugal**, March 2015. "Abundant and inexpensive inorganic catalysts for water splitting"
79. University of Paul Sabatier, Toulouse, **France**, March 2015. "Base metal catalysis for alkylation: scope and mechanism".
78. Gordon Research Conference Metals in Biology, Ventura, **USA**, January 2015. "Biomimetic chemistry of [Fe]-hydrogenase: from synthetic mimics to modified enzymes"
77. Beijing University of Chemical Technology, Beijing, **China**, January 2015. "Abundant and inexpensive inorganic catalysts for water splitting"
76. RSC Faraday Discussion: Next Generation Materials for Energy Chemistry, Xiamen, **China**, October 2014. "Enhanced oxygen evolution activity by NiO_x and $Ni(OH)_2$ nanoparticles"
75. Summer School: reactivity of nanoparticles for more efficient and sustainable energy production, Kobaek Strand, **Denmark**, August 2014. "Electrocatalysts for solar fuels: integration at the photoelectrochemical interface"
74. American Chemical Society Fall Meeting, San Francisco, **U.S.A.**, August 2014. "Nickel and iron pincer complexes as catalysts and intermediates in cross coupling reactions"
73. 41st International Conference on Coordination Chemistry, **Singapore**, July 2014. "Nickel and iron pincer complexes as catalysts and intermediates in cross coupling reactions"

72. Fusion Conference in Small Molecule Activation, Chicago, **U.S.A.**, July 2014. “Natural and unnatural ways of hydrogen activation”.
71. International Workshop on Solar Energy Materials, Vipava, **Slovenia**, June 2014. "Earth-abundant inorganic catalysts for electrochemical and photoelectrochemical water splitting”
70. Materials Research Society Spring Meeting 2014, San Francisco, **U.S.A.**, April 2014. “Abundant and inexpensive inorganic catalysts for energy storage”.
69. CaRLa Winter School, University of Heidelberg/BASF, Heidelberg, **Germany**, February 2014. "Base metal catalysis for alkylation: scope and mechanism".
68. Syngenta Workshop on Cost-efficient Metal Catalysis, Stein, **Switzerland**, February 2014. "Base Metal Catalysis for Cross Coupling of Alkyl Halides, Direct C-H Alkylation, and Perfluoroalkylation of Olefins and Alkynes".
67. Swiss Snow Symposium, Saas fee, **Switzerland**, January 2014. "Base metal catalysis for synthesis and energy storage".
66. Gordon Research Conferences - Renewable Energies: Solar Fuels, Ventura, **U.S.A**, January 2014. "Integrating Earth-Abundant Catalysts for Photoelectrochemical Solar Fuel Generation".
65. Ecole Polytechnique, Palaiseau, **France**, December 2013.
64. Institut de Chimie des Substances Naturelles (ICSN), CNRS, Gif-sur-Yvette, **France**, December 2013.

    Title for talk No. 64-65: "Alkyl electrophiles as the reaction partners in cross coupling and C-H functionalization reactions".
63. University of Münster, Münster, **Germany**, November 2013. "Base metal catalysis for cross coupling of alkyl electrophiles and direct C-H alkylation"
62. University of Stuttgart/Max Plank Institute of Solid State Research, Stuttgart, **Germany**, October 2013. "Amorphous molybdenum sulfides and related inorganic materials as catalysts for hydrogen evolution".
61. Wuhan Symposium on Homogeneous Catalysis, Wuhan, **China**, August 2013.
60. Chinese University of Hongkong, Hongkong, **China**, August 2013.
59. Hongkong University of Science and Technology, Hongkong, **China**, August 2013.
58. University of Hongkong, Hongkong, **China**, August 2013.

    Title for talk No. 58-62: "Cross coupling of alkyl electrophiles and direct C-H alkylation using base metal catalysis".
57. 15th Asian Chemical Congress, **Singapore**, August 2013. "Cross coupling of alkyl halides and direct C-H alkylation catalyzed by a nickel pincer complex".
56. Hungarian Academy of Sciences, Institute of Organic Chemistry, Budapest, **Hungary**, July 2013. "Cross coupling of alkyl electrophiles and direct C-H alkylation using base metal catalysis".
55. Firmenich, Geneva, **Switzerland**, May 2013. "Base metal catalysis for cross coupling, C-H functionalization, and beyond".
54. Lower Saxony Catalysis Symposium 2012, Goettingen, **Germany**, October 2012. "Cross coupling of alkyl electrophiles and direct C-H alkylation using base metal catalysis".
53. Danish Technical University, Lyngby, **Denmark**, September 2012
52. Workshop on Materials Science and Materials Chemistry for Energy, Peking University, Beijing, **China**, September 2012.

    Title for talk No. 52-53: "Amorphous molybdenum sulfide and related materials as hydrogen evolution catalysts".
51. Nankai University, Tianjian, **China**, September 2012. "Cross coupling of alkyl electrophiles and direct C-H alkylation using base metal catalysis".
50. World Economy Forum, Summer Davos, Tianjian, **China**, September 2012."Creating renewable fuels from the Sun".
49. Beijing Normal University, Beijing, **China**, September 2012.
48. EuCheMs Organic Division Young Investigator Workshop, Vienna, **Austria**, August 2012.

Title for talk No. 48-49: "Cross coupling of alkyl electrophiles and direct C-H alkylation using base metal catalysis".

47. Peking University, Beijing, **China**, July 2012. "Cross coupling of alkyl electrophiles and direct C-H alkylation using nickel catalysis".
46. 7th International Conference on Porphyrins and Phthalocyanines, Jeju Island, **Korea**, July 2012. "Bio-mimetic chemistry of [Fe]-hydrogenase".
45. Fudan University, Shanghai, **China**, June 2012.
44. Shanghai Institute of Organic Chemistry, Shanghai, **China**, June 2012.
43. University of Pierre & Marie Curie Paris 6, Paris, **France**, June 2012.

    Title for talk No. 43-45: "Cross coupling of alkyl electrophiles and direct C-H alkylation using base metal catalysis"
42. The 2012 American Chemical Society Spring Meeting, San Diego, C.A. **U.S.A.**, March 2012. "Ni-catalyzed cross coupling of alkyl halides and direct C-H alkylation"
41. Institute of Chemical Research of Catalonia, Tarragona, **Spain**, January 2012.
40. University of Durham, Durham, **U.K.**, January 2012.
39. ETH Zurich, Zurich, **Switzerland**, January 2012.

    Title for talk No. 39-41: "Catalysts Made of Earth Abundant Elements for Making C—C and H—H Bonds"
38. Bayer Science and Innovation Dialogue, Leverkusen, **Germany**, October 2011. "Ni-catalyzed cross coupling of non-activated alkyl halides and direct C-H alkylation"
37. University of Minnesota, Twin Cities, MN, **U.S.A.**, September 2011.
36. University of Wisconsin Madison, Madison, WI, **U.S.A.**, September 2011.
35. Columbia University, New York, NY, **U.S.A.**, September 2011.

    Title for talk No. 35-37: "Catalysts Made of Earth Abundant Elements for Making C—C and H—H Bonds"
34. 7th Sino-US Chemistry Professor Conference, Guiyang, **China**, June 2011. "Ni-catalyzed cross coupling of non-activated alkyl halides"
33. 5th Conference on Transition Metal Chalcogenide and Halide Nanostructures (TMCN 2011), Lausanne, **Switzerland**, June 2011. "Amorphous Molybdenum Sulfide as an Efficient Catalyst for Hydrogen Evolution in Water"
32. Shanghai Jiaotong University, Department of Chemistry, Shanghai, **China**, June 2011. "Catalysts Made of Earth Abundant Elements for Making C—C and H—H Bonds"
31. European Materials Research Society Spring Meeting 2011, Nice**, France**, May 2011. "Amorphous Molybdenum Sulfides as Efficient Catalysts for Electrochemical Hydrogen Evolution"
30. Northwestern University, Department of Chemistry, Evanston, IL, **U.S.A.**, April 2011.
29. Indiana University, Department of Chemistry, Bloomington, IN, **U.S.A.**, April 2011.
28. University of Illinois, Department of Chemistry, Urbana-Champaign, IL, **U.S.A.**, April 2011.
27. University of Erlangen-Nürnberg, Department of Chemistry and Pharmacy, Erlangen, **Germany**, March 2011.

    Title for talk No. 27-30: "Catalysts Made of Earth Abundant Elements for Making C—C and H—H Bonds"
26. Pacific Northwestern National Laboratories, Richland, WA, **U.S.A.**, February 2011. "Bio-Mimetic and Bio-Inspired Chemistry of Dihydrogen: From Molecular Approaches to the Pursuit of Functional Surfaces"
25. University of Washington, Department of Chemistry, Seattle, WA, **U.S.A.**, February 2011.
24. California Institute of Technology, Division of Chemistry and Chemical Engineering, Pasadena, CA, **U.S.A.**, February 2011.
23. Stanford University, Department of Chemistry, Stanford, CA, **U.S.A.**, February 2011.

22. University of California, San Diego, Department of Chemistry and Biochemistry, La Jolla, CA, **U.S.A.**, January 2011.
21. University of California, Berkeley, Department of Chemistry, Berkeley, CA, **U.S.A.**, January 2011. Title for talk No. 21-25: "Catalysts Made of Earth Abundant Elements for Making C—C and H—H Bonds"
20. PacificChem 2010, Symposium on New Advances in Metal Catalyzed Alkylation and Fluoroalkylation, Honolulu**,** Hawaii, **U.S.A.**, December 2010. "Ni-Catalyzed Cross Coupling of Non-Activated Alkyl Halides"
19. 3rd EuCheMS Congress, EYCA 2010 Symposium, Nürnberg, **Germany**, August 2010. "Cross Coupling of Non-Activated Alkyl Halides by a Well-Defined Ni Catalyst"
18. University of Basel, Department of Chemistry, Basel, **Switzerland**, April 2010.
17. University of Southern California, Department of Chemistry, Los Angeles, CA, **U.S.A.**, January 2010.
16. University of California, Los Angeles, Department of Chemistry and Biochemistry, Los Angeles, CA, **U.S.A**, January 2010.
15. University of California, Santa Barbara, Department of Chemistry and Biochemistry, Santa Barbara, CA, **U.S.A.**, January 2010.
14. Technical University of Munich, Institute of Inorganic Chemistry, Munich, **Germany**, January 2010.

    Title for talk No. 14-18: "Molecular Catalysts Based on Earth-Abundant Elements: from Cross-Coupling to Hydrogenase Mimic"
13. CUSO Summer School "Chemistry for a Sustainable World", Villars, **Switzerland**, September 2009. CUSO lecture. "Molecular Chemistry for Energy and Sustainability"
12. 2nd International Symposium on Bioinorganic Chemistry of the New Era, Takayama, **Japan**, August 2009. "Bio-Mimetic and Bio-Inspired Chemistry of the [Fe]-Hydrogenase (Hmd)"
11. Advanced Materials and Technologies in Energy Conversion 2008, Villars, **Switzerland**, August 2008. "Chemical Challenges for the Making of Solar Fuels"

10 Xiamen University, Department of Chemistry, Xiamen, **China**, December 2007. "From Novel Ligand Design to the Search for Molecular Hydrogen Evolution Catalysts"

Invited talks prior to coming to EPFL: **9**

Publications

(* denotes corresponding author)

151. Jun Gu, Chia-Shuo Hsu, Lichen Bai, Hao Ming Chen*, and Xile Hu*

Atomically dispersed Fe^{3+} sites catalyze efficient CO_2 electroreduction to CO

Science, ***2019,*** *364, 1091-1094.*

150. Gangfeng Huang, Tristan Wagner, Matthew D. Wodrich, Kenichi Ataka, Eckhard Bill, Ulrich Ermler, Xile Hu and Seigo Shima*

The atomic-resolution crystal structure of activated [Fe]-hydrogenase

Nature Catalysis, ***2019,*** *2, 537–543.*

149. Jun Gu and Xile Hu*

Homogeneous Reactions Limit the Efficiency of Gold Electrodes in CO_2 Electroreduction

*ACS Central Science, **2019**, doi : 10.1021/acscentsci.9b00461*.

148. Hui-Jie Pan, Gangfeng Huang, Matthew D. Wodrich, Farzaneh Fadaei Tirani, Kenichi Ataka, Seigo Shima* and Xile Hu*

A catalytically active [Mn]-hydrogenase incorporating a non-native metal cofactor

Nature Chemistry **2019**, *doi : 10.1038/s41557-019-0266-1*.

147. Seunghwa Lee, Karla Banjac, Magali Lingenfelder, Xile Hu*****

Oxygen Isotope Labelling Experiments Reveal Different Reaction Sites for the Oxygen Evolution Reaction on Nickel and Nickel Iron Oxides

Angewandte Chemie International Edition **2019**, doi: 10.1002/anie.201903200.

146. Sijie Liu, Antoine P. van Muyden, Lichen Bai, Xinjiang Cui, Zhaofu Fei, Xuehui Li,* Xile Hu* and Paul J. Dyson*

Metal-sulfide catalysts derived from lignosulfonate and their efficient use in hydrogenolysis

ChemSusChem **2019**, *doi: 10.1002/cssc.201900677.*

145. Shi, R.; Zhang, Z.; H**u, X.L.***

Nickamine and Analogous Nickel Pincer Catalysts for Cross-Coupling of Alkyl Halides and Hydrosilylation of Alkenes

Accounts of Chemical Research **2019**, *52, 1471-1483.*

144. Ni, W.Y.; Krammer, A.; Hsu, C-S. ; Chen, H.M. ; Schueler, A. ; H**u, X.L.***

Ni_3N as an active hydrogen oxidation reaction catalyst in alkaline medium

Angewandte Chemie International Edition **2019**, *58,* 7445-7449.

143. Shi, R.; **Hu, X.L.***

From Alkyl Halides to Ketones: Nickel-Catalyzed Reductive Carbonylation Utilizing Ethyl Chloroformate as a Carbonyl Source

Angewandte Chemie International Edition **2019**, *58,* 7454-7458.

142. Alkan-Zambada, M.; **Hu, X.L.***

Cu-Catalyzed Photoredox Chlorosulfonation of Alkenes and Alkynes

Journal of Organic Chemistry **2019**, *84*, 4525-4533.

141. Liu, S.J.; Bai, L.C.; van Muyden, A.P.; Huang, Z.J.; Cui, X.J.; Fei, Z.F.; Li, X.H.* **Hu, X.L.**;* Dyson, P.J.*

Oxidative cleavage of β-O-4 bonds in lignin model compounds with a single-atom Co catalyst

Green Chemistry **2019**, *21*, 1974-1981.

140. Song, F.; Busch, M.; Lassalle-Kaiser, B.; Hsu, C-S.; Petkucheva, E.; Bensimon, M.; Chen, H.M.;* Corminboeuf, C.*; **Hu, X.L.***

An Unconventional Iron Nickel Catalyst for the Oxygen Evolution Reaction

*ACS Central Science, **2019**, 5, 558-568.*

139. Zhang, Z.K.; Bai, L.C. ; **Hu, X.L.**[*]

Alkene Hydrosilylation Catalyzed by Easily Assembled Ni(II)-Carboxylate MOFs

Chemical Science **2019**, *10*, 3791-3795.

138. Zhang, L.; Liardet, L.; Luo, J.S.; Ren, D. ; Grätzel, M.; **Hu, X.L.**[*]

Photoelectrocatalytic Arene C-H Amination

Nature Catalysis **2019**, *2*, 366-373.

137. Liardet, L.; Katz, J.E.; Luo, J.S.; Grätzel, M.; **Hu, X.L.**[*]

An Ultrathin Cobalt-Iron Oxide Catalyst for Water Oxidation on Nanostructured Hematite Photoanodes

Journal of Materials Chemistry A **2019**, *7*, 6012-6020.

136. Cheung, C.W*.; Shen, Ni.; Wang, S.P.; Ullah, A.; **Hu, X.L.**; Ma, J.A.*

Manganese-mediated reductive amidation of esters with nitroarenes

Organic Chemistry Frontiers **2019**, *6*, 756-761.

135. Yi, X; **Hu, X.L.***

Formal Aza-Wacker Cyclization by Tandem Electrochemical Oxidation and Copper Catalysis

Angewandte Chemie International Edition **2019**, *58*, 4700-4704.

134. Barzanò, G.; Cheseaux, A.; **Hu, X.L.***

Z-Selective Synthesis of Vinyl Boronates through Fe-Catalyzed Alkyl Radical Addition

Organic Letters **2019**, *21*, 490–493.

133. Alkan-Zambada, M.; **Hu, X.L.***

Cu Photoredox Catalysts Supported by a 4,6-Disubstituted 2,2-Bipyridine Ligand: Application in Chlorotrifluoromethylation of Alkenes

Organometallics **2018**, 37, 3928–3935.

132. Mao, R.; Balon, J.; **Hu, X.L.***

Decarboxylative C(sp^3)-O Cross Coupling

Angewandte Chemie International Edition **2018**, 57, 13624-13628.

131. Xu, K.L.; Song, F.;* Gu, J.; Xu, X.; Liu, Z.N.;* **Hu, X.L.***

Solvent-Induced Surface Hydroxylation of Layered Perovskite Sr3FeCoO7-δ for Enhanced Oxygen Evolution Catalysis

Journal of Materials Chemistry A **2018**, *6*, 14240-14245.

130. Mao, R.; Balon, J.; **Hu, X.L.***

Cross Coupling of Alkyl Redox-Active Esters with Benzophenone Imines via Tandem Photoredox and Copper Catalysis

Angewandte Chemie International Edition **2018**, *57*, 9501-9504.

129. Song. F.; Bai., Li.C.; Moysiadou, A. : Lee, S.H. ; Hu, C. ; Liardet, L. ; **Hu, X.L.***

Transition metal oxides as electrocatalysts for the oxygen evolution reaction in alkaline solutions: An application-inspired renaissance

Journal of the American Chemical Society **2018**, *140*, 7748–7759.

128. Cheung, C.W.; Ma, J.A.; **Hu, X.L.***

Manganese-Mediated Reductive Transamidation of Tertiary Amides with Nitroarenes

Journal of the American Chemical Society **2018**, 140, 6789–6792.

127. Mao, R.; Frey, A.; Balon, J.; **Hu, X.L.***

Decarboxylative C(sp^3)-N Cross Coupling via Synergetic Photoredox and Copper Catalysis
Nature Catalysis **2018**, *1*, 120-126.

126. Stern, L.A.; Mocny, P.; Vrubel, H.; Bilgic, T.; Klok, H.A.;* **Hu, X.L.***
A polymer-brush templated three-dimensional molybdenum sulfide catalyst for hydrogen evolution
ACS Applied Materials and Interface **2018,** *10*, 6253–6261

125. Gu, J.; Héroguel, F.; Luterbacher, J. ; **Hu, X.L.***
Densely packed, ultra-small SnO nanoparticles for enhanced activity and selectivity in electrochemical CO2 reduction
Angewandte Chemie International Edition **2018**, *57*, 2943-2947

124. Wodrich, D.W.; **Hu, X.L.***
Natural inspirations for metal–ligand cooperative catalysis
Nature Reviews Chemistry **2018**, *2*, 0099.

123. Liardet, L.; **Hu, X.L.***
Amorphous Cobalt Vanadium Oxide as a Highly Active Electrocatalyst for Oxygen Evolution
*ACS Catalysis **2018**, 8, 644-650* .

122. Song, F.; Katz, J. ; **Hu, X.L.***
Catalyst Surface Dynamics Reveals a Simple Geometric Descriptor of Activity
Joule 2017, 1, 421-422.

121. Cheung, C.W.; Ploeger, M.L.; **Hu, X.L.***
Amide Synthesis via Nickel-Catalysed Reductive Aminocarbonylation of Aryl Halides with Nitroarenes
Chemical Science **2018**, *9*, 655-659.

120. Cheung, C.W.; Ploeger, M.L.; **Hu, X.L.***
Nickel-Catalyzed Reductive Transamidation of Secondary Amides with Nitroarenes
ACS Catalysis 2017, 7, 7092-7096.

119. Zhang, L.; **Hu, X.L.***
Room temperature C(sp^2)-H oxidative chlorination via photoredox catalysis
Chemical Science **2017**, *8*, 7009-7013.

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