

# Juanjuan HUANG, Ph.D

Assistant beamline scientist, Advanced Photon Source, Argonne National Laboratory

Homepage: <https://cathybrook.github.io>

## PROFESSIONAL HISTORY

10/2023 – present	<b>Assistant Beamline scientist</b> the Advanced Photon Source, Argonne National Laboratory
<b>Lemont, USA</b>	
10/2022 – 9/2023	<b>Postdoctoral Appointee</b> the Advanced Photon Source, Argonne National Laboratory
<b>Lemont, USA</b>	
01/2018 – 07/2022	<b>Doctoral researcher</b> Department of physics, Technical University of Munich (TUM)
<b>Munich, Germany</b>	
12/2019 – 03/2020	<b>Short-term research scholar</b> BL6-2c (TXM), Stanford Synchrotron Radiation Lightsource (SSRL)
<b>Menlo Park, USA</b>	
2016 & 2017, ~10 mo	<b>Master's researcher</b> ID26 (photon-in photon-out spectroscopy), European Synchrotron Radiation Facility (ESRF)
<b>Grenoble, France</b>	
2012 – 2015	<b>Bachelor's researcher</b> Sun Yat-Sen (Zhong Shan) University
<b>Guangzhou, China</b>	

## EDUCATION

01/2018 – 07/2022	<b>Ph.D (Doktor der Naturwissenschaften) in Physics</b> <i>Thesis supervisor: Prof. Dr. Franz Pfeiffer</i> <i>Physics department, Technical University of Munich (TUM); <a href="#">click here for PhD thesis</a></i>
09/2015 – 08/2017	<b>Master of Science (dual degree) in Materials Science exploiting Large-Scale Facilities</b> <i>Ludwig-Maximilians-University Munich (LMU)</i> <i>Université de Montpellier II (UM2)</i>
09/2011 – 08/2015	<b>Bachelor of Science in Chemistry</b> <i>Sun Yat-Sen (Zhong Shan) University (SYSU, top 10 universities in China)</i>

## INTERNATIONAL CONFERENCES (selected)

06/2024	<b>International Symposium on Compact Synchrotron X-ray Sources 2024</b>
<b>Invited speaker</b>	<i>"Dispersive X-ray Absorption Spectroscopy at the Munich Compact Light Source (MuCLS) and the Advanced Photon Source (APS)"</i>
03/2021	<b>Symposium: X-ray Spectroscopy beyond Beamlines</b>
<b>Invited speaker</b>	<i>"Dispersive X-ray absorption spectroscopy with an inverse Compton source"</i>
08/2020	<b>Webinar: Global XAS Journal Club</b>
<b>Invited speaker</b>	<i>"Energy Dispersive X-ray absorption spectroscopy at the Munich Compact Light Source"</i>

## INVITED GUEST LECTURES/TALKS (selected)

06/2025	<b>Massachusetts Institute of Technology, Boston, USA</b> <i>"X-ray Absorption Spectroscopy (XAS): Probing Local Structure and Beyond."</i>
03/2025	<b>The University of Texas at Austin, Austin, USA</b> <i>"Dispersive X-ray Absorption Spectroscopy at the Munich Compact Light Source (MuCLS) and the Advanced Photon Source (APS)"</i>

03/2019	<b>The University of Wurzburg, Wurzburg, Germany</b> <u>"Energy Dispersive X-ray absorption spectroscopy at the Munich Compact Light Source"</u>
09/2018	<b>The Hungarian Academy of Sciences, Budapest, Hungary</b> <u>"Energy Dispersive X-ray absorption spectroscopy at the Munich Compact Light Source"</u>

## AWARDS

- 2023                   • Impact Argonne Award for extraordinary effort in the successful relocation of 20-ID and 11-ID-D user programs to 25-ID (*multiple recipients*)
- 2017                   • Labex CheMiSyst prize (ranked 1<sup>st</sup> in the Chemistry department of UM2 for year 2017)
- 2015 - 2017           • Erasmus Mundus Scholarship 43,000 €
- 2011 – 2013           • Outstanding Student Scholarship, Sun Yat-Sen (Zhong Shan) University
- 2011 - 2012           • Outstanding Student Scholarship, Sun Yat-Sen (Zhong Shan) University

## TEACHING

- 07/29 – 08/02/2024   **National School on Neutron and X-Ray Scattering, Argonne National Laboratory**  
Workshop topic session on the topic of "X-ray monochromators and mirrors"

### Technical University of Munich

- 09/2021 – 10/2021   Lab course "Dual-energy micro-CT"  
10/2018 – 08/2021   Semester seminar and exercise course "Modern X-ray physics"  
04/2018 – 08/2018   Python exercise course "Image processing in physics"

## PUBLICATIONS

- 1) Dispersive X-ray Absorption Spectroscopy Using a Convexly Bent Bragg Crystal Analyzer.  
**J. Huang**, A. Tornheim, X. Shi, M. Wolfman, Y. Chen, S. M. Heald, S. D. Kelly, G. Sterbinsky, *J. Synchrotron Radiat.* **2025**, *32*, 4.
- 2) In-device Battery Failure Analysis.  
G. Qian, G. Zan, J. Li, D. Meng, T. Sun, V. Thampy, A. M. Yanyachi, X. Huang, H. Yan, Y. S. Chu, S. Gul, **J. Huang**, S. D. Kelly, S. J. Lee, J. S. Lee, W. Yun, P. Cloetens, P. Pianetta, K. Zhao, O. A. Ezekoye, Y. Liu. *Adv. Mater.* **2025**, *24*16915.
- 3) Engineering a Cu-Pd paddle-wheel metal–organic framework for selective CO<sub>2</sub> electroreduction.  
R. Zhang, Y. Liu, P. Ding, **J. Huang**, M. Dierolf, S. D. Kelly, X. Qiu, et al. *Angew. Chem. Int. Ed.* **2024**, *63* (51). e202414600.
- 4) On the Mechanism of Catalytic Decarboxylation of Carboxylic Acids on Carbon-Supported Palladium Hydride.  
F. Deng, **J. Huang**, E. Ember, K. Achterhold, M. Dierolf, A. Jentys, Y. Liu, F. Pfeiffer, J.A. Lercher. *ACS. Catal.* **2021**, *14*625-14634.
- 5) Laboratory-scale *in situ* X-ray absorption spectroscopy of a palladium catalyst on a compact inverse-Compton scattering X-ray beamline.  
**J. Huang**, F. Deng, B. Günther, K. Achterhold K, Y. Liu, A. Jentys, J.A. Lercher, Dierolf, F. Pfeiffer. *J. Anal. Atom. Spectrom.* **2021**, *36*, 2649-2659.
- 6) Simultaneous Two-Color X-Ray Absorption Spectroscopy Using Laue Crystals at an Inverse-Compton Scattering X-Ray Facility.  
**J. Huang**, B. Günther, K. Achterhold K, M. Dierolf, F. Pfeiffer. *J. Synchrotron Radiat.* **2021**, *28*, 6.
- 7) Energy-Dispersive X-ray Absorption Spectroscopy with an Inverse Compton Source.  
**J. Huang**, B. Günther, K. Achterhold K, Y. Cui, B. Gleich, M. Dierolf, F. Pfeiffer. *Sci. Rep.* **2020**, *10*, 8772.
- 8) The Versatile X-ray Beamline of the Munich Compact Light Source: Design, Instrumentation and Applications.  
B. Günther, R. Gradl, C. Jud, E. Eggli, **J. Huang**, S. Kulpe, K. Achterhold, B. Gleich, M. Dierolf, F. Pfeiffer. *J. Synchrotron Rad.*, **2020**, *27*, 5.
- 9) Targeting the ubiquitin-proteasome pathway to overcome anti-cancer drug resistance.  
S. Narayanan, C.-Y. Cai, Y. G. Assaraf, H.-Q. Guo, Q. Cui, L. Wei, **J. Huang**, C. R. Ashby Jr, Z.-S. Chen. *Drug Resist. Updat.* **2020**, *48*, 100663.
- 10) Long non-coding RNAs regulate drug resistance in cancer.  
K. Liu, L. Gao, X. Ma, J.-J. Huang, J. Chen, L. Zeng, C. R. Ashby, C. Zou, Z.-S. Chen. *Mol. Cancer.* **2020**, *19*(1).
- 11) A self-assembled Ru-Pt metallacage as a lysosome-targeting photosensitizer for 2-photon photodynamic therapy.

- Z. Zhou, J. Liu, **J. Huang**, T. W. Rees, Y. Wang, H. Wang, X. Li, H. Chao, and P. J. Stang. *Natl. Acad. Sci.*, 2019, 116(41), 20296-20302.
- 12) An organoruthenium complex overcomes ABCG2-mediated multidrug resistance via multiple mechanisms  
Zeng, J. Li, C. Zhang, Y.-K. Zhang, W. Zhang, **J. Huang**, C. R. Ashby, Z.-S. Chen, and H. Chao. *Chem. Commun.*, 2019, 55(26), 3833-3836.
- 13) Interfering with DNA High - Order Structures using Chiral Ruthenium (II) Complexes.  
S. Zou, G. Li, T. W. Rees, C. Jin, **J. Huang**, Y. Chen, L. Ji, and H. Chao. *Chem. Eur. J.*, 2018, 24(3), 690-698.
- 14) Oncosis-inducing cyclometalated iridium (iii) complexes.  
R. Guan, Y. Chen, L. Zeng, T. W. Rees, C. Jin, **J. Huang**, Z.-S. Chen, L. Ji, and H. Chao. *Chem. Sci.*, 2018, 9(23), 5183-5190.
- 15) Crossfire for two-photon photodynamic therapy with fluorinated ruthenium (II) photosensitizers.  
K. Qiu, J. Wang, C. Song, L. Wang, H. Zhu, H. Huang, **J. Huang**, H. Wang, L. Ji, and H. Chao. *ACS Appl. Mater. Interfaces*, 2017, 9(22), 18482-18492.
- 16) Rational design of NIR-emitting iridium (III) complexes for multimodal phosphorescence imaging of mitochondria under two-photon excitation.  
C. Jin, R. Guan, J. Wu, B. Yuan, L. Wang, **J. Huang**, H. Wang, L. Ji, and H. Chao, *Chem. Commun.*, 2017, 53(75), 10374-10377.
- 17) Two-photon Luminescent Metal Complexes for Bioimaging and Cancer Phototherapy.  
Y. Chen, R. Guan, C. Zhang, **J. Huang**, L. Ji, H. Chao. *Coord. Chem. Rev.* 2016, 310, 16-40.
- 18) Real-time tracking mitochondrial dynamic remodeling with two-photon phosphorescent iridium (III) complexes. H. Huang, L. Yang, P. Zhang, K. Qiu, **J. Huang**, Y. Chen, J. Diao, J. Liu, L. Ji, J. Long, and H. Chao. *Biomaterials*, 2016, 83, 321-331.
- 19) Mitochondrial Dynamics Tracking with Two-Photon Phosphorescent Terpyridyl Iridium(III) Complexes  
Y. Chen, R. Guan, C. Zhang, **J. Huang**, L. Ji, H. Chao. *Coord. Chem. Rev.* 2016, 310, 16-40.
- 20) Highly Charged Ruthenium(II) Polypyridyl Complexes as Lysosome-Localized Photosensitizers for Two-Photon Photodynamic Therapy.  
H. Huang, P. Zhang, P. Qiu, **J. Huang**, Y. Chen, L. Ji, and H. Chao, *Sci. Rep.* 2016(1), 20887.
- 21) Noncovalent Ruthenium(II) Complexes-Single-Walled Carbon Nanotube Composites for Bimodal Photothermal and Photodynamic Therapy with Near-Infrared Irradiation.  
P. Zhang, H. Huang, **J. Huang**, H. Chen, J. Wang, K. Qiu, D. Zhao, L. Ji, and H. Chao. *ACS Appl. Mater. Interfaces*, 2015, 7 (41), 23278-23290.
- 22) Unexpected High Photothermal Conversion Efficiency of Gold Nanospheres upon Grafting with Two-Photon Luminescent Ruthenium(II) Complexes: A Way Towards Cancer Therapy?  
P. Zhang, J. Wang, H. Huang, B. Yu, K. Qiu, **J. Huang**, S. Wang, L. Jiang, G. Gasser, L. Ji, H. Chao, *Biomaterials*, 2015, 63, 102-114.
- 23) A Dendritic Nano-Sized Hexanuclear Ruthenium(II) Complex as a One and Two-Photon Luminescent Tracking Non-Viral Gene Vector.  
K. Qiu, B. Yu, H. Huang, P. Zhang, **J. Huang**, S. Zou, Y. Chen, L. Ji, H. Chao. *Sci. Rep.*, 2015, 5, 10707.