

Jian-Hua Chen, Ph.D.

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▪ Profile

- *Beamline scientist with 10+ years of experience in soft X-ray tomography (SXT) and synchrotron instrumentation. Specializes in quantitative 3D whole-cell imaging, isotropic reconstructions, and high-throughput imaging pipelines integrating AI and correlative modalities.*

▪ Education

- Ph.D. (Dr.rer.Nat.) in Physics – Max Planck Institute for Biophysical Chemistry and University of Göttingen (Germany), 2013
Advisor: Prof. Dr. Peter Jomo Walla
Thesis: *Two-Photon Correlation Spectroscopy in Single Dendritic Spines Reveals Fast Actin Filament Reorganization during Activity-Dependent Growth*
- M.Sc. in Biophotonics – National Yang-Ming Chiao Tung university (Taiwan), 2004
Advisor: Prof. Chi-Hung Lin/ Prof. Din-Ping Tsai (NTU, Department of Physics)
Thesis: *Probing Interactions between the Cytoskeleton and the Endocytic Vesicles using Total Internal Reflection Fluorescence Microscopy*
- B.Sc. Electrical Engineering – National Central University (Taiwan), 2002

▪ Experience

- Associate Research Fellow, X-ray imaging group, NSRRC, Taiwan (2025.01 – present)
- Beamline Scientist – Soft X-ray tomography beamline, *NSRRC, Taiwan (2025.01 – present)*
- Staff Scientist, Department of anatomy and National Center for X-ray Tomography (NCXT), University of California San Francisco; Molecular Biophysics and Integrated Bioimaging Division, Lawrence Berkeley National Laboratory, USA (2015 – 2024)
- Postdoc, Department of anatomy and National Center for X-ray Tomography (NCXT), University of California San Francisco; Molecular Biophysics and Integrated Bioimaging Division, Lawrence Berkeley National Laboratory, USA (2014 – 2015)

▪ Selected Publications (1–15)

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1. **J. -H. Chen**, M. Mirvis, A. Ekman, B. Vanslebrouck, M. L. Gros, C. Larabell, W. F. Marshall, ***Automated segmentation of soft X-ray tomography: native cellular structure with sub-micron resolution at high throughput for whole-cell quantitative imaging in yeast.*** *Mol. Biol. Cell*, mbcE24100486 (2025).

2. A. Chatzimpinou, A. Diehl, A. T. Harhoff, K. Driller, B. Vanslebrouck, **J.-H. Chen**, K. Kairišs, V. Loconte, M. A. L. Gros, C. Larabell, K. Turgay, H. Oschkinat, V. Weinhardt, **Soft X-ray tomography reveals variations in *B. subtilis* biofilm structure upon *tasA* deletion**. *npj Biofilms Microbiomes* **11**, 23 (2025).
3. T. H. Coale, V. Loconte, K. A. Turk-Kubo, B. Vanslebrouck, W. K. E. Mak, S. Cheung, A. Ekman, **J.-H. Chen**, K. Hagino, Y. Takano, **Nitrogen-fixing organelle in a marine alga**. *Science* **384**, 217–222 (2024).
4. C. L. Hueschen, L. Segev-Zarko, **J.-H. Chen**, M. A. LeGros, C. A. Larabell, J. C. Boothroyd, R. Phillips, A. R. Dunn, **Emergent actin flows explain distinct modes of gliding motility**. *Nat. Phys.* **20**, 1989–1996 (2024).
5. E. M. Sontag, F. Morales-Polanco, **J.-H. Chen**, G. McDermott, P. T. Dolan, D. Gestaut, M. A. L. Gros, C. Larabell, J. Frydman, **Nuclear and cytoplasmic spatial protein quality control is coordinated by nuclear–vacuolar junctions and perinuclear ESCRT**. *Nature Cell Biology* **25**, 699–713 (2023).
6. A. Ekman, **J.-H. Chen**, B. Vanslebrouck, V. Loconte, C. A. Larabell, M. A. L. Gros, V. Weinhardt, **Extending imaging volume in soft X-Ray tomography**. *Advanced Photonics Research* **4**, 2200142 (2023).
7. **J.-H. Chen**, B. Vanslebrouck, V. Loconte, A. Ekman, M. Cortese, R. Bartenschlager, G. McDermott, C. A. Larabell, M. A. L. Gros, V. Weinhardt, **A protocol for full-rotation soft X-ray tomography of single cells**. *Star Protoc* **3**, 101176 (2022).
8. **J.-H. Chen**, B. Vanslebrouck, A. Ekman, V. Aho, C. A. Larabell, M. A. L. Gros, M. Vihinen-Ranta, V. Weinhardt, **Soft X-ray tomography reveals HSV-1-induced remodeling of human B cells**. *Viruses* **14**, 2651 (2022).
9. V. Loconte*, **J.-H. Chen***, M. Cortese, A. Ekman, M. A. L. Gros, C. Larabell, R. Bartenschlager, V. Weinhardt, **Using soft X-ray tomography for rapid whole-cell quantitative imaging of SARS-CoV-2-infected cells**. *Cell reports methods* **1** (2021). (co-first)
10. S. G. Remesh, S. C. Verma, **J.-H. Chen**, A. A. Ekman, C. A. Larabell, S. Adhya, M. Hammel, **Nucleoid remodeling during environmental adaptation is regulated by HU-dependent DNA bundling**. *Nature communications* **11**, 2905 (2020).
11. K. L. White, J. Singla, V. Loconte, **J.-H. Chen**, A. Ekman, L. Sun, X. Zhang, J. P. Francis, A. Li, W. Lin, **Visualizing subcellular rearrangements in intact *B* cells using soft x-ray tomography**. *Science advances* **6**, eabc8262 (2020).
12. A. P. Mehta, L. Supekova, **J.-H. Chen**, K. Pestonjamas, P. Webster, Y. Ko, S. C. Henderson, G. McDermott, F. Supek, P. G. Schultz, **Engineering yeast endosymbionts as a step toward the evolution of mitochondria**. *Proceedings of the National Academy of Sciences* **115**, 11796–11801 (2018).
13. M. Hammel, D. Amlanjyoti, F. E. Reyes, **J.-H. Chen**, R. Parpana, H. Y. Tang, C. A. Larabell, J. A. Tainer, S. Adhya, **HU multimerization shift controls nucleoid compaction**. *Science advances* **2**, e1600650 (2016).

14. **J.-H. Chen**, Y. Kellner, M. Zagrebelsky, M. Grunwald, M. Korte, P. J. Walla, ***Two-photon correlation spectroscopy in single dendritic spines reveals fast actin filament reorganization during activity-dependent growth.*** *PLoS One* **10**, e0128241 (2015).

15. N. Hafi, M. Grunwald, L. S. V. D. Heuvel, T. Aspelmeier, **J.-H. Chen**, M. Zagrebelsky, O. M. Schütte, C. Steinem, M. Korte, A. Munk, ***Fluorescence nanoscopy by polarization modulation and polarization angle narrowing.*** *Nature methods* **11**, 579–584 (2014).

Books and Chapters

1. Le Gros M.A., **Chen, JH**, Do M, McDermott G, Larabell C.A. **Putting Molecules in the Picture: Using Correlated Light Microscopy and Soft X-ray Tomography to Study Cells.** Synchrotron Light Sources and Free-Electron Lasers, Springer International Publishing Switzerland 2015
2. Ekman A, **Chen, JH**, Weinhardt V, Do M, McDermott G, Gros MAL, Larabell CA: **Putting Molecules in the Picture: Using Correlated Light Microscopy and Soft X-Ray Tomography to Study Cells.** Synchrotron Light Sources and Free-Electron Lasers: Accelerator Physics, Instrumentation and Science Applications 2019