

# Hwan-Ching Tai 戴桓青 | Curriculum Vitae



Date of birth: June, 1978

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## Education

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Ph.D. in Chemistry, California Institute of Technology, Pasadena, CA, USA.	2002.09-2010.06
B.S. in Chemistry. National Taiwan University, Taipei, Taiwan, ROC.	1996.09-2000.07

## Professional Experience

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Professor, State Key Laboratory of Mechanism and Quality of Chinese Medicine, Macau University of Science and Technology, Macau, China.	2026.01-present
Nanqiang Distinguished Professor, Department of Experimental Medicine, Xiamen University, China. 廈門大學南強特聘教授	2021.12-2025.12
Associate Professor, Department of Chemistry, National Taiwan University, Taiwan, ROC.	2017.08-2021.11
Assistant Professor, Department of Chemistry, National Taiwan University, Taiwan, ROC.	2012.07-2017.07
Postdoctoral researcher, Massachusetts General Hospital, Harvard Medical School, USA.	2010.07-2012.05
Postdoctoral researcher, California Institute of Technology, USA.	2010.01-2010.05
Mandatory military service, Taiwan, ROC.	2000.09-2002.03

## Research Interests

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1. Development of novel therapeutics for Alzheimer's disease.
2. The biochemistry of protein aggregates: tau and A $\beta$ .
3. Chemical biology: methodology development for multi-omics analyses.
4. Cellulosic and wood chemistry, and its application to cultural heritage objects

## Career Achievements

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1. Over 45 corresponding-author or first-author articles in scholarly journals, including *Cell*, *Nature Plants* (2), *PNAS* (3), *Nature Reviews Neuroscience*, *Journal of the American Chemical Society*, *Angewandte Chemie*, *Chemical Communications*, *Current Biology*, *Acta Neuropathologica Communications*, etc.

2. Discovery of prion-like Tau protein oligomers that damage neuronal synapses in Alzheimer's disease patients (*Am. J. Pathol.* 2012, first author, >450 citations).
3. Development of a novel immunotherapy (APNmAb005) against Alzheimer's disease, the first Tau-oligomer-targeting therapy to enter human clinical trial (clinicaltrials.gov NCT05344989), in collaboration with APRINOIA Therapeutics (*bioRxiv* 2022 preprint, first author, submitted).
4. Five US patents on glycoprotein detection, licensed to Invitrogen and commercialized as Click-iT O-GlcNAc Enzymatic Labeling System.
5. Elucidating the 24-chain core-shell nanostructure of wood cellulose microfibrils, the most abundant biomaterial on earth (*Nature Plants* 2023 & 2024, corresponding author).
6. Uncovering the materials secrets of world-famous Stradivarius violins (*PNAS* 2014, 2017 & 2018; *Angew. Chem.* 2021, corresponding author). Reported by *The New York Times*, *The Washington Post*, *The Times*, *The Guardian*, etc.

## Awards and Honors

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Xiamen City Double-Hundred Talents Plan, China. 廈門市雙百人才計畫	2023
Fujian Province High-Level Talents Program Category A, China. 福建省高層次人才 A 類	2023
Periodic Table of Younger Chemists—representing the “phosphorus” element. The celebratory award from the International Union of Pure and Applied Chemistry (IUPAC) to identify future leaders in chemical research.	2019
Ta-You Wu Memorial Award 吳大猷先生紀念獎, Ministry of Science and Technology, Taiwan, ROC. The top award for distinguished scholars under the age of 42.	2019
Outstanding Young Investigator Grant, Ministry of Science and Technology, Taiwan, ROC.	2019
Alzheimer's Disease Postdoctoral Fellowship, American Health Assistance Foundation (now BrightFocus Foundation), USA.	2010-2012
California Tobacco-Related Disease Research Program PhD Fellowship, USA.	2004-2007

## Research Experience

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Director, Mass Spectrometry and Proteomics Core Facility, Department of Chemistry, National Taiwan University.	2012-2021
Postdoctoral research, Massachusetts General Hospital, Harvard Medical School. Adviser: <b>Bradley Hyman (member of the National Academy of Medicine, USA)</b> . Research topic: Synaptic accumulation of Tau protein oligomers in Alzheimer's disease.	2010-2012
PhD thesis research, California Institute of Technology. Adviser: <b>Erin Schuman (recipient of The Brain Prize in 2023)</b> . Research topic: Synaptic protein degradation by proteasomes.	2004-2010

Graduate research, California Institute of Technology. Adviser: <b>Linda Hsieh-Wilson (member of the National Academy of Sciences, USA)</b> . Research topic: Chemical detection of protein glycosylation.	2002-2004
Undergraduate research, National Taiwan University. Adviser: <b>Tien-Yau Luh</b> . Research topic: Synthesis of organic polymers with nonlinear optical properties.	1999-2000

### Professional Affiliations and Services

Council member, Taiwan Proteomics Society, Taipei, Taiwan, ROC.	2017.11-2021.1
Advisory Board member, <i>STAR Protocols</i> (Cell Press)	2020-present
Advisory Board member, <i>Savart Journal</i> (string instrument research journal)	2012-present
Referee for Proc. Natl. Acad. Sci. U. S. A.; Nature Communications; Advanced Materials; Molecular Neurodegeneration; Acta Neuropath. Commun.; Neurobiol. Dis.; Front. Neurosci.; Neurochem. Int.; Brain Res.; Curr. Pharm. Des.; Bioorg. Chem.; J. Chin. Chem. Soc.; Plos One; Sci. Rep.; J. Archaeol.; Sci. Rep.; Thin Wall Struct.; Appl. Sci.; Adv. Healthc. Mat.; Herit. Sci.; J. Vis. Exp.; Proteomes; Medcomm; Int. J. Biol. Macromol.; J. Saudi. Chem. Soc; Data (MDPI), etc.	2012-present

### Patents and Licensing

Patent name	Country	Patent #	Inventor	Date
Method and compositions for the detection of protein glycosylation	USA	7332355 B2	Hsieh-Wilson, L., Khidekel, N., Tai, H. C., Arndt, S.	2008/02/19
Method and compositions for the detection of protein glycosylation	USA	7842517 B2	Hsieh-Wilson, L., Khidekel, N., Tai, H. C., Arndt, S.	2010/11/30
Method and compositions for the detection of protein glycosylation	USA	8383425 B2	Hsieh-Wilson, L., Khidekel, N., Tai, H. C., Arndt, S.	2013/02/26
Method and compositions for the detection of protein glycosylation	USA	8927300 B2	Hsieh-Wilson, L., Khidekel, N., Tai, H. C., Arndt, S.	2015/01/06
Method and compositions for the detection of protein glycosylation	USA	9689022 B2	Hsieh-Wilson, L., Khidekel, N., Tai, H. C., Arndt, S.	2017/06/27

These are continuation patents, licensed to Thermo Fisher Scientific for commercialization, available as Click-iT O-GlcNAc Enzymatic Labeling System.

## Industry Collaborations

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APRINOIA Therapeutics (Taipei, Taiwan, ROC). Contact: Chin-Yin Tai. Project: Development of APNmAb005 immunotherapy against Tau protein oligomers in Alzheimer's disease.	2016-present
Taiwan Hopax Chemicals (Kaohsiung, Taiwan, ROC). Contact: Chiao-Pei Chen. Project: Chemical composition analyses for detergents and glycopeptide polymers.	2013-2014
Life Technologies, now a part of Thermo Fisher Scientific (Waltham, MA). Project: Development of glycoprotein detection reagent kit.	2007-2017

## International Media Interviews

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KUT (NPR station in Austin, TX) news program. Contact: Matthew Largey. Interview about the secret chemical recipes of Stradivarius violins.	2021/10/13
NTV (Russian TV station) "Wonders of Technology" program. Contact: Ekaterina Glotova. Interview about the secret chemical recipes of Stradivarius violins.	2021/03/16
British Broadcasting Corporation (BBC) radio program. Contact: Oliver Conway. Interview about the tonal secrets of Stradivarius violins.	2018/05/22
ABC Radio National (Australia) "Counterpoint" program. Contact: Amanda Vanstone. Interview about the chemical wood treatment of Stradivarius violins.	2017/08/14

## Invited Lectures at International Conferences

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19 <sup>th</sup> International Small-Angle Scattering Conference (SAS2024, Taipei). Title: Shining new light on cellulose microfibril nanostructure—still counting the chains after 100 years.	2024/11/06
2024 International Alzheimer's and Related Diseases Academic Conference (Guangzhou, China). Title: The conformational antibody APNmAb005 targets soluble tau aggregates and rescues neuronal loss in long-term treatments.	2024/07/15
13 <sup>th</sup> International Symposium on Bioorganic Chemistry (Singapore, hosted by IUPAC). Title: Oligomer-targeting therapies for Alzheimer's disease—breakthroughs and challenges.	2023/12/18
Virtual International Conference for Advances in Therapies and Prevention of Alzheimer's and Related Disorders (hosted by Alzheimer's Disease International-China). Title: Synaptic Tau protein oligomers—from lab discoveries to immunotherapy clinical trials.	2022/08/14
International Union of Biochemistry and Molecular Biology (IUBMB) Focused Meeting on Neurodegenerative Diseases (Taipei). Title: Synaptosome	2020/04/21

research for Alzheimer's disease—super-resolution imaging, flow cytometry, and RNA-Seq.

Korea Human Proteome Organization 17<sup>th</sup> Annual International Proteome Conference (Seoul, Korea). Title:  $\beta$ -amyloid induces pathology-related patterns of Tau hyperphosphorylation at synaptic terminals.

2017/03/30

## **Publications List** (#co-first authors, \*corresponding authors)

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### **[1] Articles related to neurobiology and biochemistry**

1. **Nature Communications, 2025, under revision (first and co-corresponding):** Tai, H.C.; Fukumoto, H.; Ma, H. T.; Huang, S. C.; Wu, M. F.; Wu, C. L.; Lee, M.; Lai Y. T.; Li, Z. L.; Margolin, R.; Zheng, H.; Lin, R.; Sun, H.; Yuan, Y.; Huang, B.; Lin, Y.; Wu, Y. J.; Hsu, Y. H.; Intorcchia, A. J.; Serrano, G. E.; Beach, T.G., Nallani, M.; Cai, Q.; Navia, B.; Jang M. K.; Tai, C. Y. Aggregate-selective tau immunotherapy against pathological seeding species in Alzheimer's disease brains. *Nat. Commun.*, 2025, under revision (Preprint version: *bioRxiv*, 2022, doi.org/10.1101/2022.06.24.497452). [Preclinical development of the world's first tau oligomer-targeting therapy to enter human clinical trials \(clinicaltrials.gov NCT05344989\)](https://clinicaltrials.gov/NCT05344989).
2. Crystal structures of distinct parallel and antiparallel DNA G-quadruplexes reveal structural polymorphism in C9orf72 G4C2 repeats. Geng, Y; Liu, C.; Miao, H.; Suen, M. C.; Xie, Y.; Zhang, B.; Han, W.; Wu, C.; Ren, H.; Chen, X.; Tai, H.C.; Wang, Z.\*; Zhu, G.\*; Cai, Q.\* *Nucleic Acids Res.*, 2025, 53, 23.
3. **International Journal of Molecular Sciences, 2024 (corresponding):** Zheng, H.#; Sun, H.#; Cai, Q.; Tai, H.C.\* **The enigma of tau protein aggregation: mechanistic insights and future challenges.** *Int. J. Mol. Sci.* 2024, 25, 4969. (SCIE, Biochemistry and Molecular Biology, Q2)
4. Cai, Q.; Tai, H. C.\* (2024). Super-Resolution Imaging of Tau Proteins in Isolated and Immobilized Brain Synaptosomes. In: Smet-Nocca, C. (eds) *Tau Protein: Methods and Protocols*. Methods in Molecular Biology, vol 2754, pp 445-456. Humana, New York, NY.
5. Wu, X.; Guo L. Z.; Liu, Y. H.; Leung Y. S.; Tai, H. C.\*; Wang, T. D.; Chuang, Y. H.\*; Lin, C. H.; Chou, P. T.\*; Lai I. R.\*; Liu, T. M.\* Plasma fluorochromics for the diagnosis of acute mesenteric ischemia. Proc. SPIE 12822, Photonic Diagnosis, Monitoring, Prevention, and Treatment of Infections and Inflammatory Diseases 2024, 1282204 (San Francisco, USA).
6. Wu, C. Y.; Chen, H. J.; Wu, Y. C.; Tsai, S. W.; Liu, Y. H.; Bhattacharya, U.; Lin, D.; Tai, H. C.; Kong, K. V.\* Highly Efficient Singlet Oxygen Generation by BODIPY–Ruthenium(II) Complexes for Promoting Neurite Outgrowth and Suppressing Tau Protein Aggregation. *Inorg. Chem.*, 2023, 62, 1102–1112. (SCIE, Chemistry Inorganic and Nuclear, Q1)
7. **Thrombosis Research, 2023 (co-corresponding):** Wu, X.; Guo, L. Z.; Liu, Y. H.; Liu, Y. C.; Yang, P. L.; Leung, Y. S.; Tai, H. C.\*; Wang, T. D.; Lin, J. C. W.; Lai, C. L.\*; Chuang, Y. H.\*; Lin, C. H.; Chou, P. T.\*; Lai, I. R.\*; Liu, T. M.\* Plasma riboflavin fluorescence as a diagnostic marker of mesenteric ischemia-reperfusion injury in rats. *Thromb. Res.*, 2023, 223, 146-154. (SCIE, Hematology, Q1)
8. **MedComm Biomaterials and Applications, 2022 (corresponding):** Cheng H.; Tai, H. C.\* A nanovesicle platform to deliver neoantigens and immune checkpoint inhibitors: To ASPIRE for novel cancer vaccines. *MedComm Biomater. Appl.*, 2022, 1, e4.

9. **Molecules, 2021 (corresponding):** Lkhagva, A.; Tai, H. C.\* Dimethylcysteine (DiCys)/o-Phthalaldehyde Derivatization for Chiral Metabolite Analyses: Cross-Comparison of Six Chiral Thiols. *Molecules*, 2021, 26, 7416. (SCIE, Chemistry Multidisciplinary, Q2)
10. **Scientific Reports, 2021 (corresponding):** Bhattacharya, U.; Jhou, J. J.; Zou Y. F.; Abrigo, G.; Lin. S. W.; Chen, Y. H.; Chien F. C.; Tai, H. C.\* **Surface charge manipulation and electrostatic immobilization of synaptosomes for super-resolution imaging: a study on tau compartmentalization.** *Sci. Rep.* 2021, 11, 18583. (SCIE, Multidisciplinary Sciences, Q1)
11. **Journal of Chromatography A, 2020 (corresponding):** Lkhagva, A.; Shen, C. C.; Leung, Y. S.; Tai, H. C.\* Comparative study of five different amine-derivatization methods for metabolite analyses by liquid chromatography-tandem mass spectrometry. *J. Chromatogr. A*, 2020, 1610, 460536. (SCIE, Biochemical Research Methods, Q1)
12. Pei, J. C.; Hung, W. L.; Lin, B. X.; Shih, M. H.; Lu, L. Y.; Luo, D. Z.; Tai, H. C.; Studer, V.; Min, M. Y.; Lai, W. S.\* Therapeutic potential and underlying mechanism of sarcosine (N-methylglycine) in N-methyl-D-aspartate (NMDA) receptor hypofunction models of schizophrenia. *J. Psychopharmacol.*, 2019, 33, 1288-1302. (SCIE, Clinical Neurology, Q1)
13. **Journal of Neuropathology and Experimental Neurology, 2018 (corresponding):** Wu, H. Y.; Kuo, P. C.; Wang, Y. T.; Lin, H. T.; Roe, A. D., Wang, B. Y.; Han, C. L.; Hyman, B. T.; Chen, Y. J.; Tai, H. C.\*  **$\beta$ -amyloid induces pathology-related patterns of tau hyperphosphorylation at synaptic terminals.** *J. Neuropathol. Exp. Neurol.*, 2018, 77, 814-826. (SCIE, Clinical Neurology, Q2)
14. **Chemistry A European Journal, 2018 (co-corresponding):** Guo, Z. H.<sup>#</sup>; Yang, C. I.<sup>#</sup>; Ho, C. I.; Huang, S. J.; Chen, Y. C.; Tai, H. C.\*; Chan, J. C. C.\* **Fibrillization of Beta-Amyloid Peptides via Chemically Modulated Pathway.** *Chem. Eur. J.*, 2018, 24, 4939-4943. (SCIE, Chemistry Multidisciplinary, Q2)
15. **Neurology and Therapy, 2017 (corresponding):** Jhou, J. F.; Tai, H. C.\* **The Study of Postmortem Human Synaptosomes for Understanding Alzheimer's Disease and Other Neurological Disorders: A Review.** *Neurol. Ther.*, 2017, 6, 57-68. (SCIE, Clinical Neurology, Q1)
16. **Molecular and Cellular Proteomics, 2015 (co-corresponding).** Lin, J. M.; Tsai, Y. T.; Liu, Y. H.; Lin Y.; Tai, H. C.\*; Chen, C. S.\* Identification of 2-oxohistidine interacting proteins using E. coli proteome chips. *Mol. Cell. Proteomics*, 2016, 15, 3581-3593. (SCIE, Biochemical Research Methods, Q1)
17. Chen, Y. H.; Hsu, H. Y.; Yeh, M. T.; Chen, C. C.; Huang, C. Y.; Chung, Y. H.; Chang, Z. F.; Kuo, W. C.; Chan, N. L.; Weng, J. H.; Chung, B. C.; Chen, Y. J; Jian, C. B.; Shen, C. C.; Tai, H. C.; Sheu, S. Y.; Fang, J. M.\* Chemical Inhibition of Human Thymidylate Kinase and Structural Insights into the Phosphate Binding Loop and Ligand-induced Degradation. *J. Med. Chem.*, 2016, 59, 9906–9918. (SCIE, Chemistry Medicinal, Q1)
18. **Chemistry An Asian Journal, 2015 (co-corresponding):** Yang, C. I.; Tsai, B. N.; Huang, S. J.; Wang, T. Y.; Tai, H. C.\*; Chan, J. C. C.\* **Aggregation of Beta-Amyloid Peptides Proximal to Zwitterionic Lipid Bilayers.** *Chem. Asian. J.*, 2015, 10, 1967-1971. (SCIE, Chemistry Multidisciplinary, Q2)
19. **Journal of Peptide Science, 2015 (corresponding):** Huang, C. F.; Liu, Y. H.; Tai, H. C.\* Synthesis of peptides containing 2-oxohistidine residues and their characterization by liquid chromatography-tandem mass spectrometry. *J. Pept. Sci.*, 2015, 21, 114-119. (SCIE, Chemistry Analytical, Q3)

20. **Acta Neuropathologica Communications, 2014 (first and co-corresponding):** Tai, H. C.\*; Wang, B. Y.; Serrano-Pozo, A.; Frosch, M. P.; Spires-Jones, T. L.; Hyman, B. T.\* **Frequent and symmetric deposition of misfolded tau oligomers within presynaptic and postsynaptic terminals in Alzheimer's disease.** *Acta Neuropath. Commun.*, 2014, 2, 146. [First imaging study of synaptic tau oligomers in Alzheimer brain tissues.](#) (SCIE, Neurosciences, Q1)
21. **Analyst, 2014 (co-corresponding):** Chen C. C.; Su, W. C.; Huang, B. Y.; Chen, Y. J.; Tai, H. C.\*; Obena, R. P.\* Interaction modes and approaches to glycopeptide and glycoprotein enrichment. *Analyst*, 2014, 139, 688-704. (SCIE, Chemistry Analytical, Q1)
22. Perez-Nievas, B. G.; Stein, T.; Tai, H. C.; Dols-Icardo, O.; Scotton, T. C.; Barroeta-Espar, I.; Fernandez-Carballo, L.; de Munain. E. L.; Perez, J.; Serrano-Pozo, A.; Frosch, M. P.; Lowe, V.; Parisi, J. E.; Petersen, R. C.; Ikonovic, M. D.; Lopez. O. L.; Klunk, W.; Hyman, B. T.; Gomez-Isla, T.\* Dissecting phenotypic traits linked to human resilience to Alzheimer's pathology. *Brain*, 2013, 136, 2510-2526. (SCIE, Clinical Neuroscience, Q1)
23. Kopeikina, K. J.; Polydoro, M.; Tai, H. C.; Yaeger. E.; Carlson, G. A.; Pitstick, R.; Hyman, B. T.; Spires-Jones, T. L.\* Synaptic alteration in the rTg4510 mouse model of tauopathy. *J. Comp. Neurol.*, 2013, 521, 1334-1353. (SCIE, Zoology, Q1)
24. Taylor, A. M.\*; Wu, J.; Tai, H. C.; Schuman, E. M.\* Axonal translation of  $\beta$ -catenin regulates synaptic vesicle dynamics. *J. Neurosci.*, 2013, 33, 5584-5589. (SCIE, Neurosciences, Q1)
25. **American Journal of Pathology, 2012 (first):** Tai, H. C.; Serrano-Pozo, A.; Hashimoto, T.; Frosch, M. P.; Spires-Jones, T. L.; Hyman, B. T.\* **The synaptic accumulation of hyperphosphorylated tau oligomers in Alzheimer disease is associated with dysfunction of the ubiquitin-proteasome system.** *Am. J. Pathol.*, 2012, 181, 1426-1435. [Discovery of tau oligomers that damage human neuronal synapses, "Highly Cited Paper" in the ESI clinical medicine category in 2019-2022, >450 citations.](#) (SCIE, Pathology, Q1)
26. Koffie, R. M.; Hashimoto, T.; Tai, H. C.; Serrano-Pozo, A.; Joyner, D.; Hou, S.; Kopeikina, K. J.; Frosch, M. P.; Lee, V. M.; Holtzman, D. M.; Hyman, B. T.; Spires-Jones, T. L.\* Apolipoprotein E4 effects in Alzheimer's disease are mediated by synaptotoxic oligomeric amyloid-beta. *Brain*, 2012, 135, 2155-68. (SCIE, Clinical Neuroscience, Q1)
27. **Frontiers in Molecular Neuroscience, 2010 (first):** Tai, H. C.; Besche, H.; Goldberg, A. L.; Schuman, E. M.\* **Characterization of the brain 26S proteasome and its interacting proteins.** *Front. Mol. Neurosci.*, 2010, 3, 12. (SCIE, Neurosciences, Q2)
28. **Cell, 2010 (first):** Tai, H. C.; Schuman, E. M.\* **Angelman syndrome: Finding the lost Arc.** *Cell*, 2010, 140, 608-610. (SCIE, Cell Biology, Q1)
29. **Nature Reviews Neuroscience, 2008 (first):** Tai, H. C.; Schuman, E. M.\* **Ubiquitin, the proteasome and protein degradation in neuronal function and dysfunction.** *Nat. Rev. Neurosci.*, 2008, 9, 826-838. [Over 550 citations.](#) (SCIE, Neurosciences, Q1)
30. **Current Biology, 2006 (first):** Tai, H. C.; Schuman, E. M.\* **MicroRNA: MicroRNAs reach out into dendrites.** *Curr. Biol.*, 2006, 16, R121-123. (SCIE, Biology Q1)
31. Lin, W. Y.; Muruges, M. G.; Sudhakar, S.; Yang, H. C.; Tai, H. C.; Chang, C. S.; Liu, Y. H.; Wang, Y.; Chen, I. W.; Chen, C. H.; Luh, T. Y.\* On the rigidity of polynorbornenes with dipolar pendant groups. *Chem. Eur. J.*, 2005, 12, 324-330. (SCIE, Chemistry Multidisciplinary, Q2)
32. **Journal of the American Chemical Society, 2004 (first):** Tai, H. C.; Khidekel, N.; Ficarro, S. B.; Peters, E.C.; Hsieh-Wilson, L. C.\* **Parallel identification of O-GlcNAc modified proteins from cell lysates.** *J. Am. Chem. Soc.*, 2004, 126, 10500-10501. (SCIE, Chemistry Multidisciplinary, Q1)

## [2] Articles related to cellulose and wood materials

33. **Nature Plants, 2024 (corresponding):** [Tai, H. C.\\*](#); Tsao, C. S.; Lin, J. H. **Reply to: Critical comment on the assumptions leading to 24-chain microfibrils in wood.** *Nat. Plants*, 2024, 10, 1067–1070. A new core-shell model to explain the small-angle X-ray scattering of wood fibers under ultrabright synchrotron radiation. (SCIE, Plant Sciences, Q1)
34. **Nature Plants, 2023 (first and lead corresponding):** [Tai, H. C.\\*](#); Chang, C. H.; Cai, W.; Lin, J. H.; Huang, S. J.; Lin, Q. Y.; Yuan, E. C. Y.; Li, S. L.; Lin, Y. C. J.; Chan, J. C. C.\*; Tsao, C. S.\* **Wood cellulose microfibrils have a 24-chain core-shell nanostructure in seed plants.** *Nat. Plants*, 2023, 9, 1154–1168. Resolving the nanostructure of wood cellulose microfibrils, the most abundant organic material on earth. (SCIE, Plant Sciences, Q1)
35. **Arkivoc, 2023 (corresponding):** Cai, W.; [Tai, H. C.\\*](#) The Materials Chemistry of Chinese Guqin Zithers—Decoding the Mysteries of an Intangible Cultural Heritage. *Arkivoc*, 2023, (ii), 202312008. (SCIE, Chemistry Organic, Q4)
36. **Journal of Cultural Heritage (co-corresponding):** Cai, W.; Cheng, Y. K.; Tseng, H. H.; [Tai, H. C.\\*](#), Lo, S. F.\* Identification and characterization of wood from antique Chinese guqin zithers. *J. Cult. Herit.*, 2022, 53, 72-79. (SCIE, Chemistry Analytical , Q1)
37. Cai, W.\*; [Tai, H. C.](#) The Price is right. *Strad*, 2022, 133(1582), 70-71. (AHCI, Music, Q4)
38. **Angewandte Chemie, 2021 (corresponding):** Su, C. K.#; Chen, S. Y.#; Chung, J. H.; Li, G. C.; Brandmair, B.; Huthwelker, T.; Fulton J. L.; Borca, C. N.; Huang, S. J.; Nagyvary, J.; Tseng, H. H.; Chang, C. H.; Chung, D. T.; Vescovi, R.; Tsai, Y. S.; Cai, W.; Lu, B. J.; Xu, J. W.; Hsu, C. S.; Wu, J. J.; Li, H. Z.; Jheng, Y. K.; Lo, S. F.; Chen, H. M.; Hsieh, Y. T.; Chung, P. W.; Chen, C. S.; Sun, Y. C.; Chan, J. C. C.; [Tai, H. C.\\*](#) **Materials engineering of violin soundboards by Stradivari and Guarneri.** *Angew. Chem. Int. Ed.*, 2021, 60, 19144-19154. Reported by *The Times*, *The Daily Telegraph*, and dozens of international media outlets. (SCIE, Chemistry Multidisciplinary, Q1)
39. **Chemical Communications, 2021 (co-corresponding):** Yuan, E. C. Y.; Huang, S. J.; Huang, H. C.; Sinkkonen, J.; Oss, A.; Org, M. L., Samoson\*; A.; [Tai, H. C.\\*](#); Chan, J. C. C.\* **Faster magic angle spinning reveals cellulose conformations in woods.** *ChemComm*. 2021, 57, 4110-4113. Cover article. (SCIE, Chemistry Multidisciplinary, Q2)
40. **Strad, 2021 (corresponding):** Cai, W.; [Tai, H. C.\\*](#) Wood Treatment: The Magic Touch. *Strad*, 2021, 132(1580), 48-51. (AHCI, Music, Q4)
41. **Optics Express, 2020 (first):** [Tai, H. C.](#); Chen, P. L.; Xu, J. W.; Chen, S. Y.\* Two-photon fluorescence and second harmonic generation hyperspectral imaging of old and modern spruce woods. *Opt. Express*, 2020, 28, 38831-38841. (SCIE, Optics, Q1)
42. **AsiaChem, 2020 (corresponding):** Cai, W.; [Tai, H. C.\\*](#) String Theories: Chemical Secrets of Italian Violins and Chinese Guqins. *AsiaChem*, 2020, 1(1), 10-17. Cover article of the inaugural issue.
43. Lu, B. J.; Li J. R.; [Tai, H. C.](#); Cai, W.; Tseng, H. H.; Hsieh, Y. T.\* A facile ionic-liquid pretreatment method for the examination of archaeological wood by scanning electron microscopy. *Sci. Rep.*, 2019, 9, 13253. (SCIE, Multidisciplinary Sciences, Q1)
44. **Savart Journal, 2018 (corresponding):** Cai, W.; [Tai, H. C.\\*](#) Three millennia of tonewood knowledge in Chinese guqin tradition: science, culture, value, and relevance for Western lutherie. *Savart J.*, 2018, 1 (7), 1-24.

45. **PNAS, 2018 (corresponding):** Tai, H. C.\*; Shen, Y. P.; Lin, J. H.; Chung D. T. **Acoustic evolution of old Italian violins from Amati to Stradivari.** *Proc. Natl. Acad. Sci. U. S. A.*, 2018, 115, 5926-5931. Reported by *The Times*, *The Guardian*, BBC, and dozens of international media outlets. (SCIE, Multidisciplinary Sciences, Q1)
46. **PNAS, 2017 (corresponding):** Tai, H. C.\*; Li, G. C.; Huang, S. J.; Jhu, C. R.; Chung, J. H.; Wang, B. Y.; Hsu, C. S.; Brandmair, B.; Chung, D. T.; Chen, H. M.; Chan, J. C. C. **Chemical distinctions between Stradivari's maple and modern tonewood.** *Proc. Natl. Acad. Sci. U. S. A.*, 2017, 114, 27-32. Reported by *The New York Times*, *The Washington Post*, *The Times*, and >100 international media outlets. (SCIE, Multidisciplinary Sciences, Q1)
47. **Strad, 2017 (corresponding):** Tai, H. C.\* Secrets in the Wood. *Strad*, 2017, 128 (1528), 48-53. (AHCI, Music, Q4)
48. **PNAS, 2014 (corresponding):** Tai, H. C.\* **Role of timbre memory in evaluating Stradivari violins.** *Proc. Natl. Acad. Sci. U. S. A.*, 2014, 111, E2779. (SCIE, Multidisciplinary Sciences, Q1)
49. **Savart Journal, 2012 (corresponding):** Tai, H. C.\*; Chung, D. T. Stradivari Violins Exhibit Formant Frequencies Resembling Vowels Produced by Females. *Savart J.*, 2012, 1 (2), 1-13.
50. **Journal of the Violin Society of America, 2009 (corresponding):** Tai, H. C.\* Stradivari's varnish: A review of scientific findings, Part 2. *Journal of the Violin Society of America: VSA Papers*, 2009, 22 (1) 60-90.
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