

Ju Li

Employment *Massachusetts Institute of Technology* Cambridge, MA 02139
Tokyo Electric Power Company Professor of Nuclear Science and Engineering,
Full Professor (7/2011-present), Department of Nuclear Science and Engineering
and Department of Materials Science and Engineering

Tongji University Jiading, Shanghai, China
Adjunct Professor (1/2016-6/2021), Department of Materials Science and Engi-
neering

Xi'an Jiaotong University Xi'an, Shaanxi, China
Adjunct Professor (1/2009-7/2020), School of Materials Science and Engineering

University of Pennsylvania Philadelphia, PA 19104
Associate Professor of Materials Science and Engineering (9/2007-6/2011)

Ohio State University Columbus, OH 43210
Assistant Professor of Materials Science and Engineering (9/2002-9/2007)

Massachusetts Institute of Technology Cambridge, MA 02139
Research scientist (4/2002-9/2002), postdoctoral associate (9/2000-4/2002)
Departments of Nuclear Engineering and Materials Science and Engineering

Education *Massachusetts Institute of Technology* Cambridge, MA 02139
Department of Nuclear Engineering (1994-2000) Ph.D., Sept. 2000

University of Science and Technology of China Hefei, Anhui 230026, P.R.C.
Special Class for Gifted Young (1990-1994) B.S. in Physics, 1994

Honors & Awards Fellow of The Minerals, Metals & Materials Society (2022)

Research.com top scientist (89th in 2022) in materials science:
<https://research.com/scientists-rankings/materials-science/us>

Fellow of the American Association for the Advancement of Science (2020)

Webometrics $h > 100$ list (global rank 3169 Mar 2022; 3383 Mar 2021; rank 3841
Oct 2020)

Clarivate *Highly Cited Researchers* 2019-2020 in *Cross-Field*, 2018 in *Materials Science* category.

Fellow of the Materials Research Society (2017)

Fellow of the American Physical Society (2014)

Thomson Reuters *Highly Cited Researchers* 2014, among 147 scientists worldwide in **Materials Science** category based on papers published between 2002-2012, and among “**The World’s Most Influential Scientific Minds 2014**”

Lee Hsun Young Scientist Lecture Series on Materials Science, Institute of Metal Research, Chinese Academy of Sciences (2011)

Chinese Ministry of Education and Li Ka Shing Foundation Chang Jiang Scholar Award (2009)

TMS Robert Lansing Hardy Award (2009)

Technology Review TR35 award (2007)

National Academy of Engineering U.S. Frontiers of Engineering Symposium (Microsoft Research, Sept. 2007) and German-American Frontiers of Engineering Symposium (Oak Ridge, April 2010) co-sponsored by the Alexander von Humboldt Foundation.

Materials Research Society (MRS) 2006 Outstanding Young Investigator Award

Ohio State University College of Engineering Lumley Research Award 2006

Presidential Early Career Award for Scientists and Engineers (PECASE) 2005

Materials Research Society (MRS) Graduate Student Silver Medalist 1998

MIT Nuclear Engineering Department Manson Benedict Fellowship 1996-1997

Service

Author of free molecular visualization software *AtomEye*:

<http://www.google.com/search?q=AtomEye>

Lead Organizer of MIT A+B Applied Energy Symposium, May 22-24, 2019; Aug. 12-14, 2020; with Dr. Zhenhua Rui.

Member of Editorial Board of *Modelling and Simulation in Materials Science and Engineering* (Feb. 2008-), *Nano Research* (Mar. 2008-), *Science China: Technological Sciences* (Jan. 2013-), *Extreme Mechanics Letters* (Aug. 2014-), *Advanced Fiber Materials* (Dec. 2018-), *Engineering* (May 2020-), *Energy Material Advances* (Sept. 2020-), *Journal of Materiomics* (Jan. 2021-), *eScience* (March 2021-).

3-Member Executive Board (Oct. 2010-present) and International Advisory Board (Aug. 2009-present) of Multiscale Materials Modeling (MMM) conference series.

Lead Organizer of 2013 MRS Fall Meeting Symposium YY “*Elastic Strain Engineering for Unprecedented Materials Properties*”, and Lead Guest Editor of *MRS Bulletin* February 2014 special issue on Elastic Strain Engineering

Author of multiple perspective articles in *MRS Bulletin*

Issued Patents

7. July 9, 2019: US Patent 10347911, “Lithium hydrogen titanate Li—H—Ti—O material and method for making the same,” Zi-Long Tang, Shi-Tong Wang, Zhong-Tai Zhang, Ju Li.
6. July 24, 2018: US Patent 10033034, “Sulfur nanosponge cathode for lithium-sulfur battery and methods of manufacture thereof,” Junjie Niu, Akihiro Kushima, Chao Wang, Ju Li.
5. May 29, 2018: US Patent 9985327, “Air secondary battery,” Tetsuya Koido, Akihiro Kushima, Yoshiya Fujiwara, Ju Li.
4. April 24, 2018: US Patent 9954262, “Air secondary battery including cathode having trap portion,” Tetsuya Koido, Akihiro Kushima, Yoshiya Fujiwara, Ju Li.
3. Nov. 7, 2017: US Patent 9808782, “Optoelectronic devices including twisted bilayers,” Ju Li, Xiaofeng Qian, Menghao Wu.
2. Mar 14, 2017: US Patent 9595624 “Strain-engineered bandgaps,” Ju Li, Xiaofeng Qian, Ji Feng.
1. Nov.1, 2016: US Patent 9484489 “Engineered band gaps”, Ju Li, Xiaofeng Qian, Menghao Wu.

Representative Publications (630+ peer-reviewed papers, 65,000+ SCI cites, h-index 132)¹

318. W-Y. Chen, J-S. Park, C. Kwon, C.O. Plaza-Rivera, C-W. Hsu, J.K. Phong, L.J. Kilgallon, D. Wang, T. Dai, S.Y. Kim, G-Z. Zhu, Y-F. Gao, Z-C. Ren, Z. Zhang, H-J. Lim, Y. Shao-Horn, J.A. Johnson and J. Li, “Hybrid solvating electrolytes for practical sodium-metal batteries,” *Joule* **9** (2025) 101811.
317. H. Tang, B. Xiao, W-H. He, P. Subasic, A.R. Harutyunyan, Y. Wang, F. Liu, H-W. Xu and J. Li, “Approaching coupled-cluster accuracy for molecular electronic structures with multi-task learning,” *Nature Computational Science* **5** (2025) 144.
316. M.J. Polking, H-W. Xu, R. Sankar, K. Grossklaus and J. Li, “Strong long-wave infrared optical response in a topological semiconductor with a Mexican-hat band structure,” *Physical Review B* **111** (2025) 085101.
315. J-W. Kim, X-H. Yao, V. Somjit, S.Y. Kim, J. Li, B. Yildiz and C.C. Tasan, “Multilayer alumina/aluminum coatings for damage-resistant hydrogen permeation barrier,” *International Journal of Hydrogen Energy* **106** (2025) 226-230.

¹ResearcherID: A-2993-2008 ISI Web of Knowledge search keywords: “Li J” in Author and “nucl same engn same 02139 or mat same 43210 or mat same Univ Penn or 2041 same Columbus” in Address. See also all publications ranked by Google Scholar
AD Scientific Index: <https://www.adscientificindex.com/scientist/ju-li/1324670>

314. C-Y. Wang, R. Zhang, J. Li and H-L. Xin, “Resolving electrochemically triggered topological defect dynamics and structural degradation in layered oxides,” *PNAS* **122** (2025) e2409494122.
313. M-T. Huang, L-L. Xu, J.A. del Alamo, J. Li and B. Yildiz, “Nonlinear Ion Dynamics Enable Spike Timing Dependent Plasticity of Electrochemical Ionic Synapses,” *Advanced Materials* **37** (2025) 2418484.
312. E. Tekoglu, J-S. Bae, H-A. Kim, K-H. Lim, J. Liu, T.D. Doležal, S.Y. Kim, M.A. Alrizqi, A. Penn, W. Chen, A.J. Hart, J-H. Kang, C-S. Oh, J-W. Park, F. Sun, S-T. Kim, G-D. Sim and J. Li, “Superior high-temperature mechanical properties and microstructural features of LPBF-printed In625-based metal matrix composites,” *Materials Today* **80** (2024) 297-307.
311. K-S. Kim, J-S. Park, Y-C. Yoon, J-W. Kim, J. Li, B. Yildiz and C.C. Tasan, “Remove hydrogen and store it too: an acid-in-clay based electro-chemical solution,” *Materials Horizons* **12** (2024) 926.
310. Y-J. Shao, M. Pala, H. Tang, B-M. Wang, J. Li, D. Esseni and J.A. del Alamo, “Scaled vertical-nanowire heterojunction tunnelling transistors with extreme quantum confinement,” *Nature Electronics* **8** (2025) 157.
309. L. Mei, Z. Gao, R-J. Yang, Z. Zhang, M-Z. Sun, X-Y. Liang, Y-F. Zhang, T. Ying, H-L. Hu, D-F. Li, Q-H. Zhang, M.D. Gu, L. Gu, J. Zhou, B-L. Huang, D. Voiry, X.C. Zeng, Y. Chai, J. Li, X-G. Yu and Z-Y. Zeng, “Phase-switchable preparation of solution-processable WS₂ mono- or bilayers,” *Nature Synthesis* **4** (2025) 303-313.
308. G. Modi, S.K. Parate, C. Kwon, A.C. Meng, U. Khandelwal, A. Tullibilli, J. Horwath, P.K. Davies, E.A. Stach, J. Li, P. Nukala and R. Agarwal, “Electrically driven long-range solid-state amorphization in ferroic In₂Se₃,” *Nature* **635** (2024) 847-853.
307. Y.J. Park, S.E. Jerng, S.G. Yoon and J. Li, “1.5 million materials narratives generated by chatbots,” *Scientific Data* **11** (2024) 1060.
306. C-H. Li, B-N. Li, O. Amer, R. Shaydulin, S. Chakrabarti, G-Q. Wang, H-W. Xu, H. Tang, I. Schoch, N. Kumar, C. Lim, J. Li, P. Cappellaro and M. Pistoia, “Blind Quantum Machine Learning with Quantum Bipartite Correlator,” *Physical Review Letters* **133** (2024) 120602.
305. Y-B. He, C-Y. Wang, R-Q. Lin, E-Y. Hu, S.E. Trask, J. Li and H.L. Xin, “A Self-Healing, Flowable, Yet Solid Electrolyte Suppresses Li-Metal Morphological Instabilities,” *Advanced Materials* **36** (2024) 2406315.
304. G-Y. Xu, Z-Y. Meng, Y-T. Cao, Z-X. Tao, Q-J. Li, M. Stapelberg, B. Han, R. Gao, Q-P. Yu, M. Gu, B. Marelli, H-L. Wang, M-F. Zhu and J. Li, “Burst plasma preparation of metallic nanoparticles on carbon fabrics for antibacterial and electrocatalytic applications,” *NPG Asia Materials* **16** (2024) 48.
303. M. Laurenti, Q-J. Li and J. Li, “Time mesh independent framework for learning materials constitutive relationships,” *Engineering Applications of Artificial Intelligence* **137** (2024) 109165.

302. Y-S. Niu, Z-L. Hu, H-C. Mao, L. Zhou, L-G. Wang, X-B. Lou, B. Zhang, D-D. Xiao, Y. Yang, F-X. Ding, X-H. Rong, J-P. Xu, W. Yin, N. Zhang, Z-W. Li, Y-X. Lu, B-W. Hu, J. Lu, J. Li and Y-S. Hu, “A ”seat-squatting” strategy via lithium substitution to suppress Fe-migration in Na layered oxide cathodes,” *Energy & Environmental Science* **17** (2024) 7958.
301. Y-M. Huang, Y-H. Dong, Y. Yang, T-C. Liu, M-S. Yoon, S-P. Li, B-M. Wang, E.Y.P. Zheng, J-H. Lee, Y-W. Sun, Y. Han, J. Ciston, C. Ophus, C-Y. Song, A. Penn, Y-Q. Liao, H-J. Ji, T. Shi, M-G. Liao, Z-X. Cheng, J-W. Xiang, Y. Peng, L. Ma, X-H. Xiao, W. H. Kan, H-C. Chen, W. Yin, L-L. Guo, W-R. Liu, R. Muruganatham, C-C. Yang, Y-T. Zhu, Q-J. Li and J. Li, “Integrated rocksalt-polyanion cathodes with excess lithium and stabilized cycling,” *Nature Energy* **9** (2024) 1497.
300. H-W. Xu, C-H. Li, G-Q. Wang, H. Tang, P. Cappellaro and J. Li, “Efficient quantum transduction using antiferromagnetic topological insulators,” *Physical Review B* **110** (2024) 085136.
299. C-H. Tung and J. Li, “The anti-dogbone: Evaluating and designing optimal tensile specimens for deep learning of constitutive relations,” *Extreme Mechanics Letters* **69** (2024) 102157.
298. Z. Zhu, S-L. Xu, Z-J. Wang, X-H. Yan, G-Y. Xu, Y-M. Huang, Y-P. Wu, Y. Zhang and J. Li, “Avoiding electrochemical indentations: a CNT-cocooned LiCoO₂ electrode with ultra-stable high-voltage cycling,” *Energy Environ. Sci.* **17** (2024) 6102-6112.
297. Y-C. Wang, X-D. Wang, J. Ding, B-M. Liang, L-L. Zuo, S-C. Zheng, L-C. Huang, W. Xu, C-W. Fan, Z-Q. Duan, C-D. Jia, R. Zheng, Z. Liu, W. Zhang, J. Li, E. Ma and Z-W. Shan, “Inward motion of diamond nanoparticles inside an iron crystal,” *Nature Communications* **15** (2024) 4659.
296. P. Zguns, N. Gedik, B. Yildiz and J. Li, “Superconductivity and Pronounced Electron-Phonon Coupling in Rock-Salt Al_{1-x}O_{1-x} and Ti_{1-x}O_{1-x},” *Advanced Electronic Materials* **10** (2024) 2400141.
295. R-J. Yang, L. Mei, Z-Y. Lin, Y-Y. Fan, J-W. Lim, J-H. Guo, Y-J. Liu, H.S. Shin, D. Voiry, Q-Y. Lu, J. Li and Z-Y. Zeng, “Intercalation in 2D materials and in situ studies,” *Nature Reviews Chemistry* **8** (2024) 410-432.
294. Z. Shi, E. Tsymbalov, W-C. Shi, A. Barr, Q-J. Li, J-X. Li, X-Q. Chen, M. Dao, S. Suresh and J. Li, “Phonon stability boundary and deep elastic strain engineering of lattice thermal conductivity,” *PNAS* **121** (2024) e2313840121.
293. H-W. Xu, U. Delic, G-Q. Wang, C-H. Li, P. Cappellaro and J. Li, “Exponentially Enhanced Non-Hermitian Cooling,” *Physical Review Letters* **132** (2024) 110402.
292. H. Tang, G-Q. Wang, P. Cappellaro and J. Li, “eV-Deep Neutron Bound States in Nanocrystals,” *ACS Nano* **18** (2024) 9063-9070.
291. Y-S. Jung and J. Li, “Boron-10 stimulated helium production and accelerated radiation displacements for rapid development of fusion structural materials,” *J. Materiomics* **10** (2024) 377-385.

290. S.Y. Kim, S. Kavak, K.G. Bayrak, C. Sun, H-W. Xu, M.J. Lee, D. Chen, Y. Zhang, E. Tekoglu, D. Agaogullari, E. Ayas, E.S. Park and J. Li, "Demonstration of Helide formation for fusion structural materials as natural lattice sinks for helium," *Acta Materialia* **266** (2024) 119654.
289. A. Abdelhafiz, M.H. Mohammed, J. Abed, D-C. Lee, M-J. Chen, A.S. Helal, Z-C. Ren, F. Alamgir, E. Sargent, P.A. Kohl, S.K. Elsaïdi and J. Li, "Tri-Metallic Catalyst for Oxygen Evolution Reaction Enables Continuous Operation of Anion Exchange Membrane Electrolyzer at 1A cm⁻² for Hundreds of Hours," *Advanced Energy Materials* **14** (2024) 2303350.
288. T. Defferriere, A.S. Helal, J. Li, J.L.M. Rupp and H.L. Tuller, "Ionic Conduction-Based Polycrystalline Oxide Gamma Ray Detection - Radiation-Ionic Effects," *Advanced Materials* **36** (2024) 2309253.
287. Y. Zhang, Y-H. Dong and J. Li, "Electrochemical shock and transverse cracking in solid electrolytes," *Acta Materialia* **265** (2024) 119620.
286. G-X. Liu, W. Wan, Q. Nie, C. Zhang, X-L. Chen, W-H. Lin, X-Z. Wei, Y-H. Huang, J. Li and C. Wang, "Controllable long-term lithium replenishment for enhancing energy density and cycle life of lithium-ion batteries," *Energy & Environmental Science* **17** (2024) 1163-1174.
285. E. Tekoglu, A.D. O'Brien, J-S. Bae, K-H. Lim, J. Liu, S. Kavak, Y. Zhang, S.Y. Kim, D. Agaogullari, W. Chen, A.J. Hart, G-D. Sim and J. Li, "Metal matrix composite with superior ductility at 800 C: 3D printed In₇₁₈+ZrB₂ by laser powder bed fusion," *Composites Part B* **268** (2024) 111052.
284. Q. He, Y-W. Mao, J. Li, "Bounds of Block Rewards in Honest PinFi Systems ," arXiv:2404.02174.
283. Y-W. Mao, Q. He, J. Li, "LooPIN: A PinFi protocol for decentralized computing," arXiv:2406.09422.
282. S-H. Wang, G-X. Liu, W. Wan, X-Y. Li, J. Li and C. Wang, "Acetamide-Caprolactam Deep Eutectic Solvent-Based Electrolyte for Stable Zn-Metal Batteries," *Advanced Materials* **36** (2024) 2306546.
281. H. Tang, B-N. Li, Y-X. Song, M-R. Liu, H-W. Xu, G-Q. Wang, H-J. Chung and J. Li, "Reinforcement Learning-Guided Long-Timescale Simulation of Hydrogen Transport in Metals," *Advanced Science* **11** (2024) 2304122.
280. Z. Zhang, D-W. Xi, Z-C. Ren and J. Li, "A carbon-efficient bicarbonate electrolyzer," *Cell Reports Physical Science* **4** (2023) 101662.
279. C. Wang, F-Z. Yang, W. Wan, S-H. Wang, Y-Y. Zhang, Y-H. Huang and J. Li, "A large-area lithium metal-carbon nanotube film for precise contact prelithiation in lithium-ion batteries," *Energy & Environmental Science* **16** (2023) 4660-4669.
278. Z-C. Ren, Z. Zhang, Y-S. Tian and J. Li, "CRESt – Copilot for Real-world Experimental Scientist," chemrxiv-2023-tnz1x (2023).

277. Y.J. Park, D. Kaplan, Z-C. Ren, C-W. Hsu, C-H. Li, H-W. Xu, S-P. Li and J. Li, “Can ChatGPT be used to generate scientific hypotheses?” *J. Materiomics* **10** (2024) 578-584.
276. Z-C. Ren, Z-K. Ren, Z. Zhang, T. Buonassisi and J. Li, “Autonomous experiments using active learning and AI,” *Nature Reviews Materials* **8** (2023) 563–564.
275. H-W. Xu, H. Tang, G-Q. Wang, C-H. Li, B-N. Li, P. Cappellaro and J. Li, “Solid-state ^{229}Th nuclear laser with two-photon pumping,” *Physical Review A* **108** (2023) L021502.
274. Y-H. Dong and J. Li, “Oxygen redox and instability in energy ceramics,” *Cell Reports Physical Science* **4** (2023) 101460.
273. G-Q. Wang, A.R. Barr, H. Tang, M. Chen, C-H. Li, H-W. Xu, A. Stasiuk, J. Li and P. Cappellaro, “Characterizing Temperature and Strain Variations with Qubit Ensembles for Their Robust Coherence Protection,” *Physical Review Letters* **131** (2023) 043602.
272. G-Q. Wang, C-H. Li, H. Tang, B-N. Li, F. Madonini, F.F. Alsallom, W.K.C. Sun, P. Peng, F. Villa, J. Li and P. Cappellaro, “Manipulating solid-state spin concentration through charge transport,” *PNAS* **120** (2023) e2305621120.
271. H. Tang, B-N. Li, G-Q. Wang, H-W. Xu, C-H. Li, A. Barr, P. Cappellaro and J. Li, “Communication-Efficient Quantum Algorithm for Distributed Machine Learning,” *Phys. Rev. Lett.* **130** (2023) 150602.
270. H-B. Yang, B-M. Wang, H. Zhang, B. Shen, Y-Y. Li, M. Wang, J-J. Wang, W-S. Gao, Y-M. Kang, L. Li, Y-H. Dong, J-G. Li and J. Li, “Evolving corundum nanoparticles at room temperature,” *Acta Materialia* **255** (2023) 119038.
269. Y-S. Niu, Z-L. Hu, B. Zhang, D-D. Xiao, H-C. Mao, L. Zhou, F-X. Ding, Y. Liu, Y. Yang, J-P. Xu, W. Yin, N. Zhang, Z-W. Li, X-Q. Yu, H. Hu, Y-X. Lu, X-H. Rong, J. Li and Y-S. Hu, “Earth-Abundant Na-Mg-Fe-Mn-O Cathode with Reversible Hybrid Anionic and Cationic Redox,” *Advanced Energy Materials* **13** (2023) 2300746.
268. Q-J. Li, M.N. Cinbiz, Y. Zhang, Q. He, G. Beausoleil and J. Li, “Robust deep learning framework for constitutive relations modeling,” *Acta Materialia* **254** (2023) 118959.
267. Y-C. Chen, Q-J. Li, A.D. O’Brien, Y. Yang, Q. He, D.A. Bloore, J.J. Vlassak and J. Li, “Ion-beam radiation-induced Eshelby transformations: The mean and variance in hydrostatic and shear residual stresses,” *Extreme Mechanics Letters* **59** (2023) 101970.
266. J-D. Yu, J. Li, S. Zhang, F. Wei, Y-J. Liu and J-H. Li, “Mechanochemical upcycling of spent LiCoO_2 to new $\text{LiNi}_{0.80}\text{Co}_{0.15}\text{Al}_{0.05}\text{O}_2$ battery: An atom economy strategy,” *PNAS* **118** (2023) e2217698120.
265. A. Abdelhafiz, A.N.M. Tanvir, M-X. Zeng, B-M. Wang, Z-C. Ren, A.R. Harutyunyan, Y-L. Zhang and J. Li, “Pulsed Light Synthesis of High Entropy Nanocatalysts with Enhanced Catalytic Activity and Prolonged Stability for Oxygen Evolution Reaction,” *Advanced Science* **10** (2023) 2300426.

264. M-Y. Rao, H. Tang, J-B. Wu, W-H. Song, M. Zhang, W-B. Yin, Y. Zhuo, F. Kiani, B. Chen, X-Q. Jiang, H-F. Liu, H-Y. Chen, R. Midya, F. Ye, H. Jiang, Z-R. Wang, M-C. Wu, M. Hu, H. Wang, Q-F. Xia, N. Ge, J. Li and J.J. Yang, “Thousands of conductance levels in memristors integrated on CMOS,” *Nature* **615** (2023) 823.
263. S. Takamoto, D. Okanochara, Q-J. Li and J. Li, “Towards universal neural network inter-atomic potential,” *Journal of Materiomics* **9** (2023) 447-454.
262. H-R. Du, Y-H. Dong, Q-J. Li, R-R. Zhao, X-Q. Qi, W-H. Kan, L-M. Suo, L. Qie, J. Li and Y-H. Huang, “A New Zinc Salt Chemistry for Aqueous Zinc-Metal Batteries,” *Adv. Mater.* **35** (2023) 2210055.
261. E. Tekoglu, A.D. O’Brien, J. Liu, B-M. Wang, S. Kavak, Y. Zhang, S.Y. Kim, S-T. Wang, D. Agaogullari, W. Chen, A.J. Hart and J. Li, “Strengthening additively manufactured Inconel 718 through in-situ formation of nanocarbides and silicides,” *Additive Manufacturing* **67** (2023) 103478.
260. M.S. Yoon, Y-H. Dong, Y-M. Huang, B-M. Wang, J.H. Kim, J-S. Park, J.S. Hwang, J.H. Park, S.J. Kang, J.P. Cho and J. Li, “Eutectic salt-assisted planetary centrifugal deagglomeration for single-crystalline cathode synthesis,” *Nature Energy* **8** (2023) 482–491.
259. J-K. Sung, S.Y. Kim, A. Harutyunyan, M. Amirmaleki, Y-K. Lee, Y-G. Son and J. Li, “Ultra-Thin Lithium Silicide Interlayer for Solid-State Lithium-Metal Batteries,” *Advanced Materials* **35** (2023) 2210835.
258. M-T. Huang, M. Schwacke, M. Onen, J. del Alamo, J. Li and B. Yildiz, “Electrochemical Ionic Synapses: Progress and Perspectives,” *Advanced Materials* **35** (2023) 2205169.
257. L-C. Huang, D-K. Chen, D-G. Xie, S-Z. Li, Y. Zhang, T. Zhu, D. Raabe, E. Ma, J. Li and Z-W. Shan, “Quantitative tests revealing hydrogen-enhanced dislocation motion in alpha-iron,” *Nature Materials* **22** (2023) 710-716.
256. H. Tang, A.R. Barr, G-Q. Wang, P. Cappellaro and J. Li, “First-Principles Calculation of the Temperature-Dependent Transition Energies in Spin Defects,” *J. Phys. Chem. Lett.* **14** (2023) 3266-3273.
255. H-W. Xu, G-Q. Wang, C-H. Li, H. Wang, H. Tang, A.R. Barr, P. Cappellaro, and J. Li, “Laser Cooling of Nuclear Magnons,” *Physical Review Letters* **130** (2023) 063602.
254. H-W. Xu, C-H. Li, G-Q. Wang, H. Wang, H. Tang, A.R. Barr, P. Cappellaro, and J. Li, “Two-Photon Interface of Nuclear Spins Based on the Optonuclear Quadrupolar Effect,” *Physical Review X* **13** (2023) 011017.
253. F-Q. Huang and J. Li, “Surface engineering to prevent oxygen evolution of high-voltage cathodes,” *Nature Energy* **8** (2023) 121–122.
252. M-Z. Cai, Y-H. Dong, M. Xie, W-J. Dong, C-L. Dong, P. Dai, H. Zhang, X. Wang, X-Z. Sun, S-N. Zhang, M-S. Yoon, H-W. Xu, Y-S. Ge, J. Li and F-Q. Huang, “Stalling oxygen evolution in high-voltage cathodes by lanthanization,” *Nature Energy* **8** (2023) 159-168.

251. S-T. Wang, L-J. Zhao, Y-H. Dong, H. Zhu, Y. Yang, H-W. Xu, B-M. Wang, Y-K. Yuan, Y. Ren, X-J. Huang, W. Quan, Y-T. Li, Y-M. Huang, C.M. Settens, Q. He, Y-W. Sun, H. Wang, Z-Q. Xiao, W-J. Liu, X-H. Xiao, R-Q. Fu, Q. Li, Y.S. Chu, Z-T. Zhang, Q. Liu, A.M. Minor, J-Y. Zhang, Z-L. Tang and J. Li, “Pre-zeolite framework super-MIEC anodes for high-rate lithium-ion batteries,” *Energy & Environmental Science* **16** (2023) 241-251.
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