



Steven Chu

William R. Kenan Jr. Professor, Professor of Molecular and Cellular Physiology and of Energy Science and Engineering
Physics

CONTACT INFORMATION

- **Administrative Contact**

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Bio

BIO

Steven Chu is the William R. Kenan, Jr. Professor of Physics, of Molecular and Cellular Physiology, and of Energy Science and Engineering at Stanford University. He received an A.B. degree in mathematics and a B.S. degree in physics from the University of Rochester, and a Ph.D. in physics from the University of California, Berkeley. After a postdoctoral fellowship at Berkeley, he was at Bell Labs as a member of the technical staff in 1978 and then department head in 1983.

From January 2009 to April, 2013, Dr. Chu served as U.S. Secretary of Energy under President Barack Obama. During his tenure, he began several initiatives, including ARPA-E (Advanced Research Projects Agency – Energy), the Energy Innovation Hubs, and the Clean Energy Ministerial meetings. As the first scientist Cabinet member, Chu recruited dozens outstanding scientists and engineers to the Department of Energy, and was personally tasked by President Obama to help stop the BP Oil leak.

From 2004-2009, he was the director of the Lawrence Berkeley National Laboratory and Professor of Physics and of Molecular and Cell Biology at the University of California Berkeley. Prior to those positions, he was the Theodore and Francis Geballe Professor of Physics and Applied Physics at Stanford University. During this time, he helped start Bio-X, a multi-disciplinary initiative combining the physical and biological sciences with engineering and medicine.

His contributions include the introduction of laser cooling and optical trapping of atoms and particles, atomic fountain clocks and atom interferometers, the optical tweezers of biomolecules, and single molecule FRET of biomolecules tethered to surfaces. His current research is in biophysics, molecular and cellular physiology, medical imaging, nanoparticle synthesis, battery research and carbon capture. He has received many awards, including the 1997 Nobel Prize for laser cooling and optical trapping of atoms. He is a member of the National Academy of Sciences, the American Philosophical Society, the American Academy of Arts and Sciences, National Academy of Inventors, and a foreign member of the Royal Society, the Royal Academy of Engineering, the Chinese Academy of Sciences, the Academia Sinica, the Korean Academy of Sciences and Technology, the Pontifical Academy of Sciences, and , and 3 other foreign academies of sciences.

He received an A.B. degree in mathematics, and a B.S. degree in physics from the University of Rochester, and a Ph.D. in physics from the University of California, Berkeley, and 35 honorary degrees.

ACADEMIC APPOINTMENTS

- Professor, Physics
- Professor, Molecular and Cellular Physiology
- Professor, Energy Science & Engineering
- Member, Bio-X
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Co-winner in Physics, Nobel Prize (1997)
- California Hall of Fame, . (2022)
- Inagural Richard J. Goldstein Energy Lecture Award, Am. Soc. of Mechanical Engineers (2019)
- Gordon Moore Lifetime Innovation Award, . (2019)
- Academician, Pontifical Academy of Sciences (2018)
- ARISE Hall of Fame, 2018, Texas A&M University (2018)
- Pioneer Award, Fitzpatrick Institute for Photonics, Duke Univ. (2018)
- Foreign Member, National Academy of Sciences of Belarus (2017)
- Richard Ernst Medal, ETH Zurich (2015)
- Robert Fletcher Award, Thayer School of Engineering, Dartmouth (2015)
- Fellow, National Academy of Inventors (2014)
- Foreign Member, Royal Society (2013)
- George Eastman Medal, University of Rochester (2013)
- Franklin Founder Award, - (2012)
- Alumnus of the Year, University of California-Berkeley (2011)
- Foreign Member, Royal Academy of Engineering (2011)
- Hans Bethe Award, Federation of American Scientists (2011)
- Harold Berger Award, Penn School of Engineering and Applied Science (2011)
- Arthur L. Schawlow Award, Laser Institute of America (2010)
- Honorary Fellow, Institute of Physics (2009)
- Hutchinson Medal for Distinguished Public Service, University of Rochester (2009)
- Honorary Lifetime Member, Optical Society of America (2004)
- Foreign Member, Korean Academy of Sciences and Technology (1998)
- Foreign Member, Chinese Academy of Sciences (1998)
- Member, American Philosophical Society (1998)
- Science for Art Prize, Moët Hennessey-Louis Vuitton (LVMH) (1995)
- Senior Scientist Award, Humboldt Foundation (1995)
- Distinguished Traveling Lecturer, Am. Phys. Soc. Division of Laser Science (1994-1996)
- Academician, Academia Sinica (1994)

- Arthur Schawlow Prize for Laser Science, American Physical Society (1994)
- William Meggers Award for Spectroscopy, Optical Society of America (1994)
- Co-winner, King Faisal International Prize for Science (1993)
- Member, National Academy of Sciences (1993)
- Member, American Academy of Arts and Sciences (1992)
- Fellow, Optical Society of America (1990)
- Richtmyer Memorial Prize Lecturer, Am. Phys. Soc./Am Assoc. Physics Teachers (1990)
- Broida Prize for Laser Spectroscopy, American Physical Society (1987)
- Fellow, American Physical Society (1987)
- Guggenheim Fellowship, John Simon Guggenheim Foundation (1996)
- 35 Honorary Degrees, Various universities, colleges and institutions. (till present time)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Siemens Science Innovation and Technology Council (2015 - present)

PROFESSIONAL EDUCATION

- Ph.D., University of California, Berkeley , Physics (1976)
- B.S., University of Rochester , Physics (1970)
- A.B., University of Rochester , Mathematics (1970)

LINKS

- American institute of Physics Oral history of Steven Chu: <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/47519>
- Short documentary of Steven Chu "Citizen Scientist": <https://kikim.com/project/the-citizen-scientist/>
- Chu Lab Web site: <https://www.stevechulab.com>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Synthesis, functionalization and applications of nanoparticle bioprobes for molecular cellular in vivo imaging in biology and biomedicine. Linear and nonlinear difference frequency mixing ultrasound imaging. Lithium metal-sulfur batteries, new approaches to electrochemical splitting of water. CO₂ reduction, lithium extraction from salt water

Teaching

COURSES

2024-25

- Energy Systems Fundamentals: ENERGY 201A (Aut)

2023-24

- Energy Systems Fundamentals: ENERGY 201A (Aut)

2022-23

- Foundations of Modern Physics: PHYSICS 70 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Jamie Jeffries

Postdoctoral Faculty Sponsor

Jeremy Axelrod, Soon Wei Daniel Lim, Bo Liu, Weilu Shen, Yecun Wu

Doctoral Dissertation Advisor (AC)

Joey Huang, Kaitlyn Liang, Sreya Vangara

Doctoral Dissertation Co-Advisor (AC)

Yi-Shiou Duh

Master's Program Advisor

Howard Qin

Doctoral (Program)

Kutay Akin, Tony He, Anna Janni, Healey Kogan, Da-Yeon Koh, Andrew Land, Megan Loh, Rudolf Popper

Publications

PUBLICATIONS

- **Dynamics of Radiation Damage Buildup in Ultrathin Hexagonal Boron Nitride Films under Ion Bombardment.** *ACS applied materials & interfaces*
Seo, M., Bayu Aji, L. B., Zepeda-Ruiz, L. A., Kim, S. C., Tzeng, Y. K., Chu, S., Kucheyev, S. O.
2026
- **Observing intracellular transport with 1 angstrom and 1 microsecond resolution**
Axelrod, J. J., Chu, S.
CELL PRESS.2026: 91a
- **Epitaxial Electrodeposition of Fe with Controlled In-Plane Variants for a Reversible Metal Anode in an Aqueous Electrolyte.** *Nano letters*
Sui, C., Fu, C. T., Feng, G., Li, Y., Li, J., Yan, G., Hsu, P. C., Chu, S., Cui, Y.
2026
- **Ligand-dependent G protein dynamics underlying opioid signaling efficacy.** *bioRxiv : the preprint server for biology*
Deutsch, J., Hilger, D., Janetzko, J., Schroeder, C. M., Chu, S., Kobilka, B. K., Shivnaraine, R. V.
2025
- **Membrane phosphoinositides allosterically tune β -arrestin dynamics to facilitate GPCR core engagement.** *bioRxiv : the preprint server for biology*
Janetzko, J., Deutsch, J., Shi, Y., Siepe, D. H., Masureel, M., Liu, W., Viner, R., Inoue, A., Kobilka, B. K., Shivnaraine, R. V.
2025
- **A Microscope for Observing Intracellular Transport with Molecular Resolution on Molecular Timescales**
Axelrod, J., Marti, G., Chu, S.
SPRINGER.2025: S258
- **Damage buildup in multilayer hexagonal boron nitride films under Ar ion bombardment** *SCRIPTA MATERIALIA*
Seo, M., Aji, L., Kim, S. C., Tzeng, Y. K., Baker, A. A., O'Neill, F. M., Chu, S., Kucheyev, S. O.
2025; 265
- **Climate change and innovative paths to a more sustainable future** *FRONTIERS IN ENERGY*
Chu, S., Wang, Q.
2024

- **Improving the creation of SiV centers in diamond via sub- μ s pulsed annealing treatment.** *Nature communications*
Tzeng, Y. K., Ke, F., Jia, C., Liu, Y., Park, S., Han, M., Frost, M., Cai, X., Mao, W. L., Ewing, R. C., Cui, Y., Devereaux, T. P., Lin, et al
2024; 15 (1): 7251
- **Nanometer-resolution tracking of single cargo reveals dynein motor mechanisms.** *Nature chemical biology*
Peng, C. S., Zhang, Y., Liu, Q., Marti, G. E., Huang, Y. A., Sudhof, T. C., Cui, B., Chu, S.
2024
- **Noninvasive virtual biopsy using micro-registered optical coherence tomography (OCT) in human subjects.** *Science advances*
Winetraub, Y., Van Vleck, A., Yuan, E., Terem, I., Zhao, J., Yu, C., Chan, W., Do, H., Shevidi, S., Mao, M., Yu, J., Hong, M., Blankenberg, et al
2024; 10 (15): eadi5794
- **Trends of extreme US weather events in the changing climate.** *Proceedings of the National Academy of Sciences of the United States of America*
Shenoy, S., Gorinevsky, D., Trenberth, K. E., Chu, S.
2022; 119 (47): e2207536119
- **Reversibly Photoswitching Upconversion Nanoparticles for Super-sensitive Photoacoustic Molecular Imaging.** *Angewandte Chemie (International ed. in English)*
Rao, J., Liu, C., Zheng, X., Dai, T., Wang, H., Chen, X., Chen, B., Sun, T., Wang, F., Chu, S.
2022
- **Engineering Bright and Mechanosensitive Alkaline-Earth Rare-Earth Upconverting Nanoparticles.** *The journal of physical chemistry letters*
McLellan, C. A., Siefe, C., Casar, J. R., Peng, C. S., Fischer, S., Lay, A., Parakh, A., Ke, F., Gu, X. W., Mao, W., Chu, S., Goodman, M. B., Dionne, et al
2022: 1547-1553
- **PERSONAL PROTECTIVE EQUIPMENT (PPE) SEES THE LIGHT: LOW-COST METHYLENE BLUE PLUS LIGHT INACTIVATES SARS-COV-2 ON PPE INCLUDING MASKS AND RESPIRATORS**
Lendvay, T. S., Chen, J., Harcourt, B. H., Scholte, F. E., Kilinc-Balci, F., Lin, Y., Lamb, M. M., Chu, L. C., Evans, D., Price, A., Lin, Y., Mores, C. N., Sahni, et al
AMER SOC TROP MED & HYGIENE.2021: 8
- **Single Particle Cathodoluminescence Spectroscopy with Sub-20 nm, Electron-Stable Phosphors** *ACS PHOTONICS*
Swearer, D. F., Fischer, S., Angell, D. K., Siefe, C., Alivisatos, A., Chu, S., Dionne, J. A.
2021; 8 (6): 1539-1547
- **Addressing Personal Protective Equipment (PPE) Decontamination: Methylene Blue and Light Inactivates SARS-CoV-2 on N95 Respirators and Medical Masks with Maintenance of Integrity and Fit.** *Infection control and hospital epidemiology*
Lendvay, T. S., Chen, J., Harcourt, B. H., Scholte, F. E., Lin, Y. L., Kilinc-Balci, F. S., Lamb, M. M., Homdayjanakul, K., Cui, Y., Price, A., Heyne, B., Sahni, J., Kabra, et al
2021: 1-83
- **Three-Dimensional Analysis of Particle Distribution on Filter Layers inside N95 Respirators by Deep Learning.** *Nano letters*
Lee, H. R., Liao, L., Xiao, W., Vaillonis, A., Ricco, A. J., White, R., Nishi, Y., Chiu, W., Chu, S., Cui, Y.
2020
- **Obituary Arthur Ashkin (1922-2020)** *NATURE*
Chu, S.
2020; 588 (7836): 29
- **Lithium Extraction from Seawater through Pulsed Electrochemical Intercalation** *JOULE*
Liu, C., Li, Y., Lin, D., Hsu, P., Liu, B., Yan, G., Wu, T., Cui, Y., Chu, S.
2020; 4 (7): 1459-69
- **Household Materials Selection for Homemade Cloth Face Coverings and Their Filtration Efficiency Enhancement with Triboelectric Charging.** *Nano letters*
Zhao, M., Liao, L., Xiao, W., Yu, X., Wang, H., Wang, Q., Lin, Y. L., Kilinc-Balci, F. S., Price, A., Chu, L., Chu, M. C., Chu, S., Cui, et al
2020
- **Can N95 Respirators Be Reused after Disinfection? How Many Times?** *ACS nano*

Liao, L., Xiao, W., Zhao, M., Yu, X., Wang, H., Wang, Q., Chu, S., Cui, Y.
2020

- **Difference-Frequency Ultrasound Imaging With Non-Linear Contrast** *IEEE TRANSACTIONS ON MEDICAL IMAGING*
Li, Y., Polyak, D., Johnson, E., Yecies, D., Shevidi, S., de la Zerda, A., Gephart, M., Chu, S.
2020; 39 (5): 1759–66
- **Tackling the grand challenges** *PHYSICS WORLD*
Chu, S., Blaustein, R.
2020; 33 (3): 13
- **Single-particle spectroscopy for functional nanomaterials.** *Nature*
Zhou, J., Chizhik, A. I., Chu, S., Jin, D.
2020; 579 (7797): 41–50
- **Synergistic enhancement of electrocatalytic CO₂ reduction to C₂ oxygenates at nitrogen-doped nanodiamonds/Cu interface.** *Nature nanotechnology*
Wang, H., Tzeng, Y., Ji, Y., Li, Y., Li, J., Zheng, X., Yang, A., Liu, Y., Gong, Y., Cai, L., Li, Y., Zhang, X., Chen, et al
2020
- **Electrochemical generation of liquid and solid sulfur on two-dimensional layered materials with distinct areal capacities.** *Nature nanotechnology*
Yang, A. n., Zhou, G. n., Kong, X. n., Vilá, R. A., Pei, A. n., Wu, Y. n., Yu, X. n., Zheng, X. n., Wu, C. L., Liu, B. n., Chen, H. n., Xu, Y. n., Chen, et al
2020
- **A Single-Molecule Surface-Based Platform to Detect the Assembly and Function of the Human RNA Polymerase II Transcription Machinery.** *Structure (London, England : 1993)*
Park, S. R., Hauver, J. n., Zhang, Y. n., Revyakin, A. n., Coleman, R. A., Tjian, R. n., Chu, S. n., Pertsinidis, A. n.
2020
- **A scalable method of applying heat and humidity for decontamination of N95 respirators during the COVID-19 crisis.** *PloS one*
Anderegg, L., Meisenhelder, C., Ngooi, C. O., Liao, L., Xiao, W., Chu, S., Cui, Y., Doyle, J. M.
2020; 15 (7): e0234851
- **A Core-Shell-Shell Nanoparticle Architecture Towards Bright Upconversion and Improved Forster Resonant Energy Transfer**
Siefe, C., Mehlenbacher, R. D., Peng, C., Zhang, Y., Fischer, S., Lay, A., McLellan, C. A., Alivisatos, A., Chu, S., Dionne, J. A., IEEE
IEEE.2020
- **Electrochemical generation of liquid and solid sulfur on two-dimensional layered materials with distinct areal capacities** *Nature Nanotechnology*
Yang, A., Zhou, G., et al
2020
- **Decontamination of SARS-CoV-2 and Other RNA Viruses from N95 Level Meltblown Polypropylene Fabric Using Heat under Different Humidities.** *ACS nano*
Campos, R. K., Jin, J. n., Rafael, G. H., Zhao, M. n., Liao, L. n., Simmons, G. n., Chu, S. n., Weaver, S. C., Chiu, W. n., Cui, Y. n.
2020
- **Electrotunable liquid sulfur microdroplets.** *Nature communications*
Zhou, G. n., Yang, A. n., Wang, Y. n., Gao, G. n., Pei, A. n., Yu, X. n., Zhu, Y. n., Zong, L. n., Liu, B. n., Xu, J. n., Liu, N. n., Zhang, J. n., Li, et al
2020; 11 (1): 606
- **Sub-20 nm Core-Shell-Shell Nanoparticles for Bright Upconversion and Enhanced Forster Resonant Energy Transfer.** *Journal of the American Chemical Society*
Siefe, C., Mehlenbacher, R. D., Peng, C. S., Zhang, Y., Fischer, S., Lay, A., McLellan, C. A., Alivisatos, A. P., Chu, S., Dionne, J. A.
2019
- **Nanodiamond Integration with Photonic Devices** *LASER & PHOTONICS REVIEWS*
Rodulaski, M., Zhang, J., Tzeng, Y., Lagoudakis, K. G., Ishiwata, H., Dory, C., Fischer, K. A., Kelaita, Y. A., Sun, S., Maurer, P. C., Alassaad, K., Ferro, G., Shen, et al
2019

- **A Magneto-Optical Nanoplatfrom for Multimodality Imaging of Tumors in Mice.** *ACS nano*
Song, G., Zheng, X., Wang, Y., Xia, X., Chu, S., Rao, J.
2019
- **Upper limit for angular compounding speckle reduction** *APPLIED PHYSICS LETTERS*
Winetraub, Y., Wu, C., Collins, G. P., Chu, S., de la Zerda, A.
2019; 114 (21)
- **Bright sub-20-nm cathodoluminescent nanoprobles for electron microscopy** *NATURE NANOTECHNOLOGY*
Prigozhin, M. B., Maurer, P. C., Courtis, A. M., Liu, N., Wisser, M. D., Siefe, C., Tian, B., Chan, E., Song, G., Fischer, S., Aloni, S., Ogletree, D., Barnard, et al
2019; 14 (5): 420-+
- **Bright sub-20-nm cathodoluminescent nanoprobles for electron microscopy.** *Nature nanotechnology*
Prigozhin, M. B., Maurer, P. C., Courtis, A. M., Liu, N., Wisser, M. D., Siefe, C., Tian, B., Chan, E., Song, G., Fischer, S., Aloni, S., Ogletree, D. F., Barnard, et al
2019
- **Breathing-Mimicking Electrocatalysis for Oxygen Evolution and Reduction** *JOULE*
Li, J., Zhu, Y., Chen, W., Lu, Z., Xu, J., Pei, A., Peng, Y., Zheng, X., Zhang, Z., Chu, S., Cui, Y.
2019; 3 (2): 557-69
- **Direct electrochemical generation of supercooled sulfur microdroplets well below their melting temperature.** *Proceedings of the National Academy of Sciences of the United States of America*
Liu, N., Zhou, G., Yang, A., Yu, X., Shi, F., Sun, J., Zhang, J., Liu, B., Wu, C., Tao, X., Sun, Y., Cui, Y., Chu, et al
2019
- **Upper limit for angular compounding speckle reduction**
Winetraub, Y., Wu, C., Chu, S., de la Zerda, A.
edited by Fujimoto, J. G., Izatt, J. A.
SPIE-INT SOC OPTICAL ENGINEERING.2019
- **Frequency Tunable Single-Photon Emission From a Single Atomic Defect in a Solid**
Sun, S., Zhang, J., Fischer, K. A., Burek, M. J., Dory, C., Lagoudakis, K. G., Tzeng, Y., Radulaski, M., Kelaita, Y., Safavi-Naeini, A., Shen, Z., Melosh, N. A., Chu, et al
IEEE.2019
- **Optimization of the Trade-Off Between Speckle Reduction and Axial Resolution in Frequency Compounding** *IEEE TRANSACTIONS ON MEDICAL IMAGING*
Li, Y., Winetraub, Y., Liba, O., de la Zerda, A., Chu, S.
2019; 38 (1): 107-12
- **Address harassment now** *SCIENCE*
Hamburg, M., Hockfield, S., Chu, S.
2018; 361 (6408): 1167
- **Single upconversion nanoparticle imaging at sub-10 W cm⁻² irradiance** *NATURE PHOTONICS*
Liu, Q., Zhang, Y., Peng, C., Yang, T., Joubert, L., Chu, S.
2018; 12 (9): 548-53
- **Single upconversion nanoparticle imaging at sub-10 W cm⁻² irradiance.** *Nature photonics*
Liu, Q., Zhang, Y., Peng, C. S., Yang, T., Joubert, L. M., Chu, S.
2018; 12 (9): 548-553
- **Cavity-Enhanced Raman Emission from a Single Color Center in a Solid.** *Physical review letters*
Sun, S., Zhang, J. L., Fischer, K. A., Burek, M. J., Dory, C., Lagoudakis, K. G., Tzeng, Y., Radulaski, M., Kelaita, Y., Safavi-Naeini, A., Shen, Z., Melosh, N. A., Chu, et al
2018; 121 (8): 083601
- **An Ultrastrong Double-Layer Nanodiamond Interface for Stable Lithium Metal Anodes** *JOULE*
Liu, Y., Tzeng, Y., Lin, D., Pei, A., Lu, H., Melosh, N. A., Shen, Z., Chu, S., Cui, Y.

2018; 2 (8): 1595–1609

- **Efficient electrocatalytic CO₂ reduction on a three-phase interface** *NATURE CATALYSIS*
Li, J., Chen, G., Zhu, Y., Liang, Z., Pei, A., Wu, C., Wang, H., Lee, H., Liu, K., Chu, S., Cui, Y.
2018; 1 (8): 592–600
- **Strongly Cavity-Enhanced Spontaneous Emission from Silicon-Vacancy Centers in Diamond** *NANO LETTERS*
Zhang, J., Sun, S., Burek, M. J., Dory, C., Tzeng, Y., Fischer, K. A., Kelaita, Y., Lardakis, K. G., Radulaski, M., Shen, Z., Melosh, N. A., Chu, S., Loncar, et al
2018; 18 (2): 1360–65
- **Strongly Cavity-Enhanced Spontaneous Emission from Silicon-Vacancy Centers in Diamond** *NANO LETTERS*
Zhang, J. L., Sun, S., Burek, M. J., Dory, C., Tzeng, Y., Fischer, K. A., Kelaita, Y., Lagoudakis, K. G., Radulaski, M., Shen, Z., Melosh, N. A., Chu, S., Loncar, et al
2018; 18: 1360 -1365
- **Speckle-Modulation for Speckle Reduction in Optical Coherence Tomography**
Liba, O., Lew, M. D., SoRelle, E. D., Dutta, R., Sen, D., Moshfeghi, D. M., Chu, S., de la Zerda, A.
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SPIE-INT SOC OPTICAL ENGINEERING.2018
- **Atomic structure of sensitive battery materials and Interfaces revealed by cryo-electron microscopy** *SCIENCE*
Li, Y., Li, Y., Pei, A., Yan, K., Sun, Y., Wu, C., Joubert, L., Chin, R., Koh, A., Yu, Y., Perrino, J., Butz, B., Chu, et al
2017; 358 (6362): 506–10
- **STEVEN CHU** *NATURE*
Chu, S.
2017; 550 (7675): S64
- **THE REAL CLIMATE DEBATE** *NATURE*
Hodson, R., Agre, P.
2017; 550 (7675): S62
- **Speckle-modulating optical coherence tomography in living mice and humans.** *Nature communications*
Liba, O., Lew, M. D., SoRelle, E. D., Dutta, R., Sen, D., Moshfeghi, D. M., Chu, S., de la Zerda, A.
2017; 8: 15845
- **A half-wave rectified alternating current electrochemical method for uranium extraction from seawater** *NATURE ENERGY*
Liu, C., Hsu, P., Xie, J., Zhao, J., Wu, T., Wang, H., Liu, W., Zhang, J., Chu, S., Cui, Y.
2017; 2 (4)
- **Vertical-Substrate MPCVD Epitaxial Nanodiamond Growth.** *Nano letters*
Tzeng, Y., Zhang, J. L., Lu, H., Ishiwata, H., Dahl, J., Carlson, R. M., Yan, H., Schreiner, P. R., Vuckovic, J., Shen, Z., Melosh, N., Chu, S.
2017
- **The path towards sustainable energy** *NATURE MATERIALS*
Chu, S., Cui, Y., Liu, N.
2017; 16 (1): 16-22
- **Complete coherent control of silicon vacancies in diamond nanopillars containing single defect centers** *OPTICA*
Zhang, J. L., Lagoudakis, K. G., Tzeng, Y., Dory, C., Radulaski, M., Kelaita, Y., Fischer, K. A., Sun, S., Shen, Z., Melosh, N., Chu, S., Vuckovic, J.
2017; 4 (11): 1317-1321
- **Complete Coherent Control of Silicon-Vacancies in Diamond Nanopillars Containing Single Defect Centers**
Zhang, J., Lagoudakis, K. G., Tzeng, Y., Dory, C., Radulaski, M., Kelaita, Y., Fischer, K. A., Shen, Z., Melosh, N. A., Chu, S., Vuckovic, J., IEEE
IEEE.2017
- **Atomic structure of sensitive battery materials and interfaces revealed by cryo-electron microscopy** *SCIENCE*
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2017; 358: 506–510

- **Complete Coherent Control of Silicon-Vacancies in Diamond Nanopillars Containing Single Defect Centers** *OPTICA*
Zhang, J. L., Lagoudakis, K. G., Tzeng, Y., Dory, C., Radulaski, M., Kelaita, Y., Fischer, K. A., Shen, Z., Melosh, N. A., Chu, S., Vučković, J.
2017; 4: 1317-1321
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Liu, C., Hsu, P., Xie, J., Zhao, J., Wu, T., Wang, H., Liu, W., Zhang, J., Chu, S., Cui, Y.
2017; 2: 17007
- **Speckle-modulating optical coherence tomography in living mice and humans** *NATURE COMMUNICATIONS*
Liba, O., Lew, M. D., SoRelle, E. D., Dutta, R., Sen, D., Moshfeghi, D. M., Chu, S., de la Zerda, A.
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Chu, S., Cui, Y., Liu, N.
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- **High-Performance Lithium Metal Negative Electrode with a Soft and Flowable Polymer Coating** *ACS ENERGY LETTERS*
Zheng, G., Wang, C., Pei, A., Lopez, J., Shi, F., Chen, Z., Sendek, A. D., Lee, H., Lu, Z., Schneider, H., Safont-Sempere, M. M., Chu, S., Bao, et al
2016; 1 (6): 1247-1255
- **Sr Betavoltaic Power Source.** *Scientific reports*
Dixon, J., Rajan, A., Bohlemann, S., Coso, D., Upadhyaya, A. D., Rohatgi, A., Chu, S., Majumdar, A., Yee, S.
2016; 6: 38182-?
- **Evaluation of a Silicon Sr-90 Betavoltaic Power Source** *SCIENTIFIC REPORTS*
Dixon, J., Rajan, A., Bohlemann, S., Coso, D., Upadhyaya, A. D., Rohatgi, A., Chu, S., Majumdar, A., Yee, S.
2016; 6
- **Super-resolution molecular imaging with photostable nanoprobe**
Prigozhin, M., Maurer, P., Courtis, A., Zheng, X., Liu, N., Collins, J., Aloni, S., Ogletree, F., Macfarlane, R., Cui, Y., Rao, J., Alivisatos, P., Chu, et al
AMER CHEMICAL SOC.2016
- **Wafer-Size and Single-Crystal MoSe₂ Atomically Thin Films Grown on GaN Substrate for Light Emission and Harvesting** *ACS APPLIED MATERIALS & INTERFACES*
Chen, Z., Liu, H., Chen, X., Chu, G., Chu, S., Zhang, H.
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