Stanford



Hemamala Karunadasa

J.G. Jackson and C.J. Wood Professor of Chemistry and Senior Fellow at the Precourt Institute for Energy and Professor, by courtesy, of Materials Science and Engineering

Curriculum Vitae available Online

CONTACT INFORMATION

- **Administrative Contact**

  Sippy Baniya Roberson - Administrative Associate

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Bio

BIO

Professor Hema Karunadasa works with colleagues in materials science, earth science, and applied physics to drive the discovery of new materials with applications in clean energy. Using the tools of synthetic chemistry, her group designs materials that couple the structural tunability of organic molecules with the diverse electronic and optical properties of extended inorganic solids. This research targets materials such as sorbents for capturing environmental pollutants, phosphors for solid-state lighting, and absorbers for solar cells.

Hemamala Karunadasa studied chemistry and materials science at Princeton University (A.B. with high honors 2003; Certificate in Materials Science and Engineering 2003), where her undergraduate thesis project with Professor Robert J. Cava examined geometric magnetic frustration in metal oxides. She moved from solid-state chemistry to solution-state chemistry for her doctoral studies in inorganic chemistry at the University of California, Berkeley (Ph.D. 2009) with Professor Jeffrey R. Long. Her thesis focused on heavy atom building units for magnetic molecules and molecular catalysts for generating hydrogen from water. She continued to study molecular electrocatalysts for water splitting during postdoctoral research with Berkeley Professors Christopher J. Chang and Jeffrey R. Long at the Lawrence Berkeley National Lab. She further explored molecular catalysts for hydrocarbon oxidation as a postdoc at the California Institute of Technology with Professor Harry B. Gray. She joined the Stanford Chemistry Department faculty in September 2012. Her research explores solution-state routes to new solid-state materials.

Professor Karunadasa's lab at Stanford takes a molecular approach to extended solids. Lab members gain expertise in solution- and solid-state synthetic techniques and structure determination through powder- and single-crystal x-ray diffraction. Lab tools also include a host of spectroscopic and electrochemical probes, imaging methods, and film deposition techniques. Group members further characterize their materials under extreme environments and in operating devices to tune new materials for diverse applications in renewable energy.

Please visit the lab website for more details and recent news.

ACADEMIC APPOINTMENTS

- Professor, Chemistry

- Senior Fellow, Precourt Institute for Energy
- Professor (By courtesy), Materials Science and Engineering
- Member, Bio-X
- Principal Investigator, Stanford Institute for Materials and Energy Sciences

HONORS AND AWARDS

- Brown Science Foundation Investigator Award, Brown Science Foundation (2022)
- Inorganic Chemistry Lectureship award, American Chemical Society (2022)
- Chambers Faculty Fellowship, Stanford University (2021-2024)
- Harry Gray Award for Creative Work in Inorganic Chemistry by a Young Investigator, American Chemical Society (2020)
- Terman Faculty Fellowship, Stanford University (2015-2018)
- Sloan Fellowship, Alfred P. Sloan Foundation (2015)
- CAREER Award, National Science Foundation (2014)
- ICCC41 Rising Star Award, 41st International Conference on Coordination Chemistry (2014)
- Thieme Chemistry Journal Award, Thieme Chemistry Journal (2013)
- Gabilan Junior Faculty Fellow, Stanford University (2012-2015)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Associate Editor, Chemical Science (Royal Society of Chemistry) (2021 - present)
- International Advisory Board Member, Angewandte Chemie (German Chemical Society) (2021 - present)
- Editorial Advisory Board Member, Chemistry of Materials (American Chemical Society)) (2019 - present)
- Editorial Advisory Board Member, Inorganic Chemistry (American Chemical Society) (2016 - 2019)

PROFESSIONAL EDUCATION

- Postdoc, California Institute of Technology , Molecular catalysts for activating hydrocarbons (2011)
- Postdoc, University of California, Berkeley and Lawrence Berkeley National Lab , Molecular catalysts for generating hydrogen from water (2010)
- PhD, University of California, Berkeley , Inorganic Chemistry (2009)
- AB, Princeton University , Chemistry (2003)
- Certificate, Princeton University , Materials Science and Engineering (2003)

PATENTS

- J.R. Long, C.J. Chang, H.I. Karunadasa, M. Majda. "United States Patent US2012217169-A1 Molecular metal-disulfide catalysts for generating hydrogen from water", Univ. California
- J.R. Long, C.J. Chang, H.I. Karunadasa. "United States Patent US2012228152-A1 Molecular metal-oxo catalysts for generating hydrogen from water", Univ. California
- H. I. Karunadasa, A. H. Slavney. "United States Patent 62273651 Bismuth-halide perovskite solar-cell absorbers having long carrier lifetimes", Leland Stanford Junior University, Jan 19, 2016
- H. I. Karunadasa, D. Solis-Ibarra. "United States Patent PCT/US2014/054363 Reversible and irreversible chemisorption in nonporous, crystalline hybrid structures", Leland Stanford Junior University, Sep 5, 2014
- H. I. Karunadasa, I. C. Smith, and M. D. McGehee. "United States Patent 20150357591 Solar cells comprising 2D perovskites", Leland Stanford Junior University, Jun 6, 2014
- H. I. Karunadasa, E. R. Dohner. "United States Patent US2014/061946 Composition comprising a layered perovskite phosphor and method of formation", Leland Stanford Junior University, Oct 23, 2013

LINKS

- Karunadasa Group: https://web.stanford.edu/group/karunadasalab/

Teaching

COURSES

2026-27

- Advanced Inorganic Chemistry: CHEM 251 (Aut)
- Inorganic Chemistry Seminar: CHEM 359 (Win)
- The Chemistry of Extended Solids: CHEM 153 (Spr)

2025-26

- Advanced Inorganic Chemistry: CHEM 251 (Win)
- Inorganic Chemistry II: CHEM 153 (Spr)
- Inorganic Chemistry Seminar: CHEM 359 (Win)

2024-25

- Advanced Inorganic Chemistry: CHEM 253 (Spr)
- Inorganic Chemistry II: CHEM 153 (Spr)
- Inorganic Chemistry Seminar: CHEM 359 (Aut, Win, Spr)

2023-24

- Advanced Inorganic Chemistry: CHEM 253 (Spr)
- Chemical Principles: From Molecules to Solids: CHEM 31M (Aut)
- Inorganic Chemistry II: CHEM 153 (Spr)
- Inorganic Chemistry Seminar: CHEM 359 (Aut, Win, Spr)

Publications

PUBLICATIONS

- **Two-Step Photon Absorption in an Expanded Perovskite Analog with a Molecular Intermediate Band** *ACS CENTRAL SCIENCE*
  Jiang, Z., Fykouras, K., Boeije, Y., Frohna, K., Flick, A. C., LeCroy, G., Joy, S., Qu, Z., Carbone, A., Vigil, J. A., Rao, A., Salleo, A., Dauskardt, et al
  2026
- **Pyridinium Cations Act as Charge Reservoirs in Expanded Halide Perovskite Analogs at High Pressure.** *Angewandte Chemie (International ed. in English)*
  Deschene, C. R., Ke, F., Fykouras, K., Su, A. C., Lin, Y., Leppert, L., Karunadasa, H. I., Matheu, R.
  2026: e2495859
- **Pressure-Induced Metal-like Transport and Magnetoresistance in a Au2+-Au3+ Halide Perovskite.** *ACS central science*
  Deschene, C. R., Eghdami, A., Yu, Y., Smith, A., Liu, Z., Marlton, F. P., Mao, W. L., Hwang, H. Y., Neaton, J. B., Karunadasa, H. I.
  2026; 12 (8): 1132-1145
- **A Mosaic Layered Halide-Perovskite Spin Glass: Mechanochemical Alloying of a Ferromagnet and a Paramagnet.** *ACS central science*
  Vigil, J. A., Skolnick, M., Zwanziger, C., Li, J., Dayton, D., Toney, M. F., Torquato, S., Karunadasa, H. I.
  2026; 12 (7): 981-995
- **Twisted Tin-Chloride Perovskite Single-Crystal Heterostructures.** *Angewandte Chemie (International ed. in English)*
  Cleron, J. L., Chen, C. Y., Pan, F., Saha, S., Marlton, F. P., Stolz, R. M., Li, J., Dionne, J. A., Liu, F., Filip, M. R., Karunadasa, H. I.
  2025: e20140
- **Tuning the Quantum-Well Structure of Single-Crystal Layered Perovskite Heterostructures.** *Journal of the American Chemical Society*
  Deshmukh, A. P., Chen, Y., Cleron, J. L., Tie, M., Wen, J., Heinz, T. F., Filip, M. R., Karunadasa, H. I.
  2025

- **Mixed-valence halide perovskites#** *COORDINATION CHEMISTRY REVIEWS*
  Deschene, C. R., Zwanziger, C., Matheu, R., Karunadasa, H. I.
  2025; 539
- **Total X-ray scattering and big-box modeling of pressure-induced local disorder and partial amorphization in CsPbBr3.** *Nature communications*
  Celeste, A., Girdzis, S. P., Cladek, B. R., Deschene, C. R., Wolf, N. R., Chapman, K. W., Karunadasa, H. I., Tucker, M. G., Mao, W. L., Lin, Y.
  2025; 16 (1): 7631
- **Isolation of Diamond Spin Chains in a Layered Halide Perovskite Heterostructure.** *Journal of the American Chemical Society*
  Caniglia, C. D., Li, Y., Wen, J., Brueggemeyer, M. T., Lee, Y. S., Solomon, E. I., Fisher, I. R., Karunadasa, H. I.
  2025
- **Phase segregation dynamics in mixed-halide perovskites revealed by plunge-freeze cryo-electron microscopy** *CELL REPORTS PHYSICAL SCIENCE*
  Fan, Q., Cui, Y., Li, Y., Vigil, J. A., Jiang, Z., Nandi, P., Colby, R., Zhang, C., Cui, Y., Karunadasa, H. I., Lindenberg, A. M.
  2025; 6 (6)
- **Suppressing Phase Transitions and High-Pressure Amorphization through Tethered Organic Cations in Organochalcogenide-Halide Perovskites.** *Journal of the American Chemical Society*
  Li, J., Hofmann, J., Stolz, R. M., Wen, J., Deschene, C. R., Bartels, H., Liu, Z., Salleo, A., Lin, Y., Chapman, K. W., Karunadasa, H. I.
  2025
- **Evidence for I2 loss from the perovskite-gas interface upon light-induced halide segregation.** *Chemical science*
  Lee, M., Vigil, J. A., Jiang, Z., Karunadasa, H. I.
  2025
- **3D Lead-Organoselenide-Halide Perovskites and their Mixed-Chalcogenide and Mixed-Halide Alloys.** *Angewandte Chemie (International ed. in English)*
  Karunadasa, H., Li, J., Wang, Y., Saha, S., Chen, Z., Hofmann, J., Misleh, J., Chapman, K. W., Reimer, J. A., Filip, M. R.
  2024: e202408443
- **Halide Perovskites Breathe Too: The Iodide-Iodine Equilibrium and Self-Doping in Cs2SnI6.** *ACS central science*
  Vigil, J. A., Wolf, N. R., Slavney, A. H., Matheu, R., Saldivar Valdes, A., Breidenbach, A., Lee, Y. S., Karunadasa, H. I.
  2024; 10 (4): 907-919
- **Local structure, bonding, and asymmetry of ((NH2)2CH)PbBr3, CsPbBr3, and (CH3NH3)PbBr3** *PHYSICAL REVIEW B*
  Bridges, F., Gruzdas, J., MacKeen, C., Mayford, K., Weadock, N. J., Baltazar, V., Rakita, Y., Waquier, L., Vigil, J. A., Karunadasa, H. I., Toney, M. F.
  2023; 108 (21)
- **Understanding the evolution of double perovskite band structure upon dimensional reduction.** *Chemical science*
  Connor, B. A., Su, A. C., Slavney, A. H., Leppert, L., Karunadasa, H. I.
  2023; 14 (42): 11858-11871
- **Stabilizing Au2+ in a mixed-valence 3D halide perovskite** *NATURE CHEMISTRY*
  Lindquist, K. P., Eghdami, A., Deschene, C. R., Heyer, A. J., Wen, J., Smith, A. G., Solomon, E. I., Lee, Y. S., Neaton, J. B., Ryan, D. H., Karunadasa, H. I.
  2023
- **Structural Dynamics of a Novel Pseudohalide Perovskite Cs2Pb(SeCN)(2)Br-2 Investigated with Nonlinear Infrared Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Xing, X., Li, J., Breen, J. P., Karunadasa, H. I., Fayer, M. D.
  2023
- **The nature of dynamic local order in CH3NH3PbI3 and CH3NH3PbBr3** *JOULE*
  Weadock, N. J., Hemamala, T. C., Vigil, J. A., Gold-Parker, A., Smith, I. C., Ahammed, B., Krogstad, M. J., Ye, F., Voneshen, D., Gehring, P. M., Rappe, A. M., Steinrueck, H., Ertekin, et al
  2023; 7 (5)
- **Mosaic CuI-CuII-InIII 2D Perovskites: Pressure-Dependence of the Intervalence Charge Transfer and a Mechanochemical Alloying Method.** *Angewandte Chemie (International ed. in English)*

Li, J., Matheu, R., Ke, F., Liu, Z., Lin, Y., Karunadasa, H.
2023: e202300957

- **Quasi-One-Dimensional Metallicity in Compressed CsSnI3.** *Journal of the American Chemical Society*
  Ke, F., Yan, J., Matheu, R., Niu, S., Wolf, N. R., Yang, H., Yin, K., Wen, J., Lee, Y. S., Karunadasa, H. I., Mao, W. L., Lin, Y.
  2022
- **Zwitterions in 3D Perovskites: Organosulfide-Halide Perovskites.** *Journal of the American Chemical Society*
  Li, J., Chen, Z., Saha, S., Utterback, J. K., Aubrey, M. L., Yuan, R., Weaver, H. L., Ginsberg, N. S., Chapman, K. W., Filip, M. R., Karunadasa, H. I.
  2022
- **Cesium-mediated electron redistribution and electron-electron interaction in high-pressure metallic CsPbI3.** *Nature communications*
  Ke, F., Yan, J., Niu, S., Wen, J., Yin, K., Yang, H., Wolf, N. R., Tzeng, Y., Karunadasa, H. I., Lee, Y. S., Mao, W. L., Lin, Y.
  2022; 13 (1): 7067
- **Tuning Defects in a Halide Double Perovskite with Pressure.** *Journal of the American Chemical Society*
  Wolf, N. R., Jaffe, A., Slavney, A. H., Mao, W. L., Leppert, L., Karunadasa, H. I.
  2022
- **Reliably obtaining white light from layered halide perovskites at room temperature.** *Chemical science*
  Crace, E. J., Su, A. C., Karunadasa, H. I.
  2022; 13 (34): 9973-9979
- **Probing Lattice Dynamics in Two-Dimensional InorganicPseudohalide Perovskites with Ultrafast Infrared Spectroscopy br** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Xing, X., Li, J., Breen, J. P., Nishida, J., Karunadasa, H., Fayer, M. D.
  2022; 126 (24): 10145-10158
- **Charge Reservoirs in an Expanded Halide Perovskite Analog: Enhancing High-Pressure Conductivity through Redox-Active Molecules.** *Angewandte Chemie (International ed. in English)*
  Matheu, R., Ke, F., Breidenbach, A., Wolf, N., Lee, Y., Liu, Z., Leppert, L., Lin, Y., Karunadasa, H.
  2022
- **The halogen chemistry of halide perovskites** *TRENDS IN CHEMISTRY*
  Matheu, R., Vigil, J. A., Crace, E. J., Karunadasa, H. I.
  2022; 4 (3): 206-219
- **Directed assembly of layered perovskite heterostructures as single crystals.** *Nature*
  Aubrey, M. L., Saldivar Valdes, A., Filip, M. R., Connor, B. A., Lindquist, K. P., Neaton, J. B., Karunadasa, H. I.
  2021; 597 (7876): 355-359
- **Alloying a single and a double perovskite: a Cu+/2+ mixed-valence layered halide perovskite with strong optical absorption.** *Chemical science*
  Connor, B. A., Smaha, R. W., Li, J., Gold-Parker, A., Heyer, A. J., Toney, M. F., Lee, Y. S., Karunadasa, H. I.
  2021; 12 (25): 8689-8697
- **Doubling the Stakes: The Promise of Halide Double Perovskites.** *Angewandte Chemie (International ed. in English)*
  Wolf, N. R., Connor, B. A., Slavney, A. H., Karunadasa, H.
  2021
- **Visualization of dynamic polaronic strain fields in hybrid lead halide perovskites.** *Nature materials*
  Guzelturk, B., Winkler, T., Van de Goor, T. W., Smith, M. D., Bourelle, S. A., Feldmann, S., Trigo, M., Teitelbaum, S. W., Steinruck, H., de la Pena, G. A., Alonso-Mori, R., Zhu, D., Sato, et al
  2021
- **Preserving a robust CsPbI3 perovskite phase via pressure-directed octahedral tilt.** *Nature communications*
  Ke, F. n., Wang, C. n., Jia, C. n., Wolf, N. R., Yan, J. n., Niu, S. n., Devereaux, T. P., Karunadasa, H. I., Mao, W. L., Lin, Y. n.
  2021; 12 (1): 461
- **Gold-Cage Perovskites: A Three-Dimensional AuIII-X Framework Encasing Isolated MX63- Octahedra (MIII = In, Sb, Bi; X = Cl-, Br-, I-).** *Journal of the American Chemical Society*

Lindquist, K. P., Boles, M. A., Mack, S. A., Neaton, J. B., Karunadasa, H. I.
2021

- **Revealing Local Disorder in a Silver-Bismuth Halide Perovskite upon Compression.** *The journal of physical chemistry letters*
  Girdzis, S. P., Lin, Y., Leppert, L., Slavney, A. H., Park, S., Chapman, K. W., Karunadasa, H. I., Mao, W. L.
  2020: 532–36
- **Test of the Dynamic-Domain and Critical Scattering Hypotheses in Cubic Methylammonium Lead Triiodide** *PHYSICAL REVIEW LETTERS*
  Weadock, N. J., Gehring, P. M., Gold-Parker, A., Smith, I. C., Karunadasa, H., Toney, M. F.
  2020; 125 (7)
- **Dimensional reduction of the small-bandgap double perovskite Cs2AgTlBr6** *CHEMICAL SCIENCE*
  Connor, B. A., Biega, R., Leppert, L., Karunadasa, H.
  2020; 11 (29): 7708–15
- **Origins of the Pressure-Induced Phase Transition and Metallization in the Halide Perovskite (CH3NH3)PbI3** *ACS ENERGY LETTERS*
  Lee, J., Jaffe, A., Lin, Y., Karunadasa, H., Neaton, J. B.
  2020; 5 (7): 2174–81
- **Carrier Diffusion Lengths Exceeding 1 mu m Despite Trap-Limited Transport in Halide Double Perovskites** *ACS ENERGY LETTERS*
  Delor, M., Slavney, A. H., Wolf, N. R., Filip, M. R., Neaton, J. B., Karunadasa, H., Ginsberg, N. S.
  2020; 5 (5): 1337–45
- **Expanded Analogs of Three-Dimensional Lead-Halide Hybrid Perovskites.** *Angewandte Chemie (International ed. in English)*
  Umeyama, D. n., Leppert, L. n., Connor, B. n., Manumpil, M. A., Neaton, J. n., Karunadasa, H. n.
  2020
- **Single Ensemble Non-exponential Photoluminescent Population Decays from a Broadband White-Light-Emitting Perovskite.** *Journal of the American Chemical Society*
  Thomaz, J. E., Lindquist, K. P., Karunadasa, H. I., Fayer, M. D.
  2020
- **A pencil-and-paper method for elucidating halide double perovskite band structures.** *Chemical science*
  Slavney, A. H., Connor, B. A., Leppert, L., Karunadasa, H. I.
  2019; 10 (48): 11041-11053
- **A pencil-and-paper method for elucidating halide double perovskite band structures** *CHEMICAL SCIENCE*
  Slavney, A. H., Connor, B. A., Leppert, L., Karunadasa, H.
  2019; 10 (48): 11041–53
- **Tuning the bandgap of Cs2AgBiBr6 through dilute tin alloying** *CHEMICAL SCIENCE*
  Lindquist, K. P., Mack, S. A., Slavney, A. H., Leppert, L., Gold-Parker, A., Stebbins, J. F., Salleo, A., Toney, M. F., Neaton, J. B., Karunadasa, H. I.
  2019; 10 (45): 10620–28
- **Halide perovskites under pressure**
  Jaffe, A., Lin, Y., Mao, W., Karunadasa, H.
  AMER CHEMICAL SOC.2019
- **Halide perovskites and the halogens**
  Slavney, A., Wolf, N., Valdes, A., Karunadasa, H.
  AMER CHEMICAL SOC.2019
- **Tuning the bandgaps of halide double perovskites**
  Slayney, A., Connor, B., Leppert, L., Neaton, J. B., Karunadasa, H.
  AMER CHEMICAL SOC.2019
- **Dimensional reduction of halide double perovskites**
  Connor, B., Leppert, L., Smith, M., Neaton, J. B., Karunadasa, H.
  AMER CHEMICAL SOC.2019

- **Understanding and controlling white-light emission from halide perovskites**
  Smith, M., Connor, B., Crace, E., Lindquist, K., Karunadasa, H.
  AMER CHEMICAL SOC.2019
- **Molecule-like trap states in halide perovskites: From solar-cell absorbers to white-light emitters**
  Smith, M., Jaffe, A., Lindenberg, A., Karunadasa, H.
  AMER CHEMICAL SOC.2019
- **Teaching halide double perovskites to absorb sunlight**
  Slavney, A., Connor, B., Leppert, L., Neaton, J. B., Karunadasa, H.
  AMER CHEMICAL SOC.2019
- **Between the sheets: Post-synthetic transformations in halide perovskites**
  Smith, M., Smith, I., Slavney, A., Valdes, A., Karunadasa, H.
  AMER CHEMICAL SOC.2019
- **Tuning the Luminescence of Layered Halide Perovskites.** *Chemical reviews*
  Smith, M. D., Connor, B. A., Karunadasa, H. I.
  2019
- **Reactivity of NO2 with Porous and Conductive Copper Azobispyridine Metallopolymers.** *Inorganic chemistry*
  Clayman, N. E., Manumpil, M. A., Matson, B. D., Wang, S. n., Slavney, A. H., Sarangi, R. n., Karunadasa, H. I., Waymouth, R. M.
  2019
- **High Compression-Induced Conductivity in a Layered Cu-Br Perovskite.** *Angewandte Chemie (International ed. in English)*
  Jaffe, A. n., Mack, S. A., Lin, Y. n., Mao, W. n., Neaton, J. B., Karunadasa, H. n.
  2019
- **Acoustic phonon lifetimes limit thermal transport in methylammonium lead iodide.** *Proceedings of the National Academy of Sciences of the United States of America*
  Gold-Parker, A., Gehring, P. M., Skelton, J. M., Smith, I. C., Parshall, D., Frost, J. M., Karunadasa, H. I., Walsh, A., Toney, M. F.
  2018
- **Carving Out Pores in Redox-Active One-Dimensional Coordination Polymers** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
  Clayman, N. E., Manumpil, M., Umeyama, D., Rudenko, A. E., Karunadasa, H. I., Waymouth, R. M.
  2018; 57 (44): 14585–88
- **Carving Out Pores in Redox-Active One-Dimensional Coordination Polymers.** *Angewandte Chemie (International ed. in English)*
  Clayman, N. E., Manumpil, M. A., Umeyama, D., Rudenko, A. E., Karunadasa, H. I., Waymouth, R. M.
  2018
- **Structural and electronic correlations in halide perovskites under pressure**
  Jaffe, A., Lin, Y., Mao, W., Karunadasa, H.
  AMER CHEMICAL SOC.2018
- **Small-Bandgap Halide Double Perovskites.** *Angewandte Chemie (International ed. in English)*
  Slavney, A. H., Leppert, L., Saldivar Valdes, A., Bartesaghi, D., Savenije, T. J., Neaton, J. B., Karunadasa, H.
  2018
- **Dynamically Disordered Lattice in a Layered Pb-I-SCN Perovskite Thin Film Probed by Two-Dimensional Infrared Spectroscopy.** *Journal of the American Chemical Society*
  Nishida, J., Breen, J. P., Lindquist, K. P., Umeyama, D., Karunadasa, H. I., Fayer, M. D.
  2018
- **Layered Halide Double Perovskites: Dimensional Reduction of Cs2AgBiBr6** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Connor, B. A., Leppert, L., Smith, M. D., Neaton, J. B., Karunadasa, H. I.
  2018; 140 (15): 5235–40
- **Terahertz Emission from Hybrid Perovskites Driven by Ultrafast Charge Separation and Strong Electron-Phonon Coupling** *ADVANCED MATERIALS*

Guzelturk, B., Belisle, R. A., Smith, M. D., Bruening, K., Prasanna, R., Yuan, Y., Gopalan, V., Tassone, C. J., Karunadasa, H. I., McGehee, M. D., Lindenberg, A. M.
2018; 30 (11)

- **Charge Carrier Dynamics in Cs2AgBiBr6 Double Perovskite** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Bartesaghi, D., Slavney, A. H., Gelvez-Rueda, M. C., Connor, B. A., Grozema, F. C., Karunadasa, H. I., Savenije, T. J.
  2018; 122 (9): 4809–16
- **White-Light Emission from Layered Halide Perovskites** *ACCOUNTS OF CHEMICAL RESEARCH*
  Smith, M. D., Karunadasa, H. I.
  2018; 51 (3): 619–27
- **The Diversity of Layered Halide Perovskites** *ANNUAL REVIEW OF MATERIALS RESEARCH, VOL 48*
  Smith, M. D., Crace, E. J., Jaffe, A., Karunadasa, H. I.
  edited by Clarke, D. R.
  2018; 48: 111–36
- **Electronic Conductivity in a Porous Vanadyl Prussian Blue Analogue upon Air Exposure** *INORGANIC CHEMISTRY*
  Manumpil, M., Leal-Cervantes, C., Hudson, M. R., Brown, C. M., Karunadasa, H. I.
  2017; 56 (21): 12682–86
- **Broadband Emission with a Massive Stokes Shift from Sulfonium Pb-Br Hybrids** *CHEMISTRY OF MATERIALS*
  Smith, M. D., Watson, B. L., Dauskardt, R. H., Karunadasa, H. I.
  2017; 29 (17): 7083–87
- **Structural origins of broadband emission from layered Pb-Br hybrid perovskites.** *Chemical science*
  Smith, M. D., Jaffe, A., Dohner, E. R., Lindenberg, A. M., Karunadasa, H. I.
  2017; 8 (6): 4497-4504
- **Pressure-Induced Metallization of the Halide Perovskite (CH3NH3)PbI3** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Jaffe, A., Lin, Y., Mao, W. L., Karunadasa, H. I.
  2017; 139 (12): 4330-4333
- **Between the Sheets: Postsynthetic Transformations in Hybrid Perovskites** *CHEMISTRY OF MATERIALS*
  Smith, I. C., Smith, M. D., Jaffe, A., Lin, Y., Karunadasa, H. I.
  2017; 29 (5): 1868-1884
- **Chemical Approaches to Addressing the Instability and Toxicity of Lead-Halide Perovskite Absorbers** *INORGANIC CHEMISTRY*
  Slayney, A. H., Smaha, R. W., Smith, I. C., Jaffe, A., Umeyama, D., Karunadasa, H. I.
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PRESENTATIONS

- Stanford Energy Seminar: Chemical Approaches to Addressing the Toxicity and Instability of Lead Perovskite Absorbers - Stanford Precourt Institute for Energy (May 23, 2016)
- GCEP Symposium talk: Hybrid Perovskite Solar-Cell Absorbers - GCEP Symposium, Stanford Precourt Institute for Energy (October 15, 2014)
- GCEP Q&A with Assistant Professor Karunadasa - Stanford Global Climate & Energy Project (2014)
- Research news: Stanford scientists improve perovskite solar-cell absorbers by giving them a squeeze - Stanford News Service (April 6, 2016)