

# Constantinos C. Stoumpos

Department of Materials Science and Technology, University of Crete, Voutes, GR-70013 Heraklion, Greece

• tel:+30 2810 54 5037, email: [cstoumpos@materials.uoc.gr](mailto:cstoumpos@materials.uoc.gr)

•Website: <https://www.materials.uoc.gr/el/general/personnel/cstoumpos.html>

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## EDUCATION

**University of Patras**, Patras, Greece

Bachelor of Science in Chemistry (Sep 2001 – Sep 2006)

Thesis title: Methyl-2-pyridyl ketone oxime in Mn chemistry.

Advisor: Prof. Spyros P. Perlepes

**University of Patras**, Patras, Greece

Ph. D. in Chemistry (Nov 2006 – Dec 2009)

Thesis title: In search of high-spin molecules and single-molecule magnets.

Advisor: Prof. Spyros P. Perlepes

**Northwestern University**, Evanston IL, /**Argonne National Laboratory**, Lemmont, IL, USA

Research on Halide Perovskites (Feb 2010 – Feb 2017)

Advisor: Prof. Mercurio G. Kanatzidis

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## RESEARCH EXPERIENCE

**Associate Professor** University of Crete, Department of Materials Science and Technology, Heraklion, Greece (Sep 2018-present)

**Research Assistant Professor**, Northwestern University, Department of Chemistry, (March 2017 – Aug 2018)

**Lecturer**, Northwestern University, Department of Chemistry, (Jan 2017 – Feb 2017)

**Postdoctoral Research**, Northwestern University, Department of Chemistry, (Aug 2014 – Feb 2017)

**Postdoctoral Research**, Argonne National Laboratory, Materials Science Division (Feb 2012 – Aug 2014)

**Postdoctoral Research**, Northwestern University, Department of Chemistry (Feb 2010 – Jan 2012)

**Visiting Scholar**, University of Athens, Department of Chemistry, Athens, Greece (Oct – Nov 2009)

**Visiting Scholar**, University of Crete, Department of Chemistry, Heraklion, Greece (Jun – Aug 2009)

**Visiting Scholar**, Universitat de Barcelona, Departament de Química Inorgànica, Barcelona, Spain (Feb – May 2009)

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## TEACHING EXPERIENCE

- **Teaching Assistant and Laboratory Instructor**, University of Patras, Department of Chemistry, Greece (Oct 2006 – Jan 2009)
  - **Guest Lecturer for Advanced Inorganic Chemistry Course (Solid State Chemistry)**, Northwestern University, Department of Chemistry, USA (May 2016)
  - **Guest Lecturer for Principles of Inorganic Chemistry Course (Solid State Chemistry)**, Northwestern University, Department of Chemistry, USA (Nov 2016)
  - **Lecturer and Lab Instructor for Advanced Inorganic Synthesis Undergraduate Laboratory**, Northwestern University, Department of Chemistry, USA (Jan-Feb 2017)
  - **Lab Instructor for Materials Chemistry Laboratory**, University of Crete, Department of Materials Science and Technology (Sept-Jan 2018)
  - **Lecturer for Organic Chemistry**, University of Crete, Department of Materials Science and Technology (Feb-Jun 2019)
  - **Lecturer for General Chemistry**, University of Crete, Department of Materials Science and Technology (Sep 2019 - present)
  - **Lecturer for Crystal Chemistry**, University of Crete, Department of Materials Science and Technology (Sep 2019 - present)
  - **Lecturer for Symmetry in Materials Science**, University of Crete, Department of Materials Science and Technology (Feb 2020 - present)
  - **Lecturer for Nanomaterials in Energy and Environment**, University of Crete, Department of Materials Science and Technology (Feb 2020 - present)
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## FELLOWSHIPS AND AWARDS

- **D. Theodoropoulos Award (University of Patras, 2006):** Awarded for the best experimental diploma thesis in the academic year 2005-2006.
  - **Omar Farha Award for Research Leadership (Northwestern University, 2015):** Awarded by the Department of Chemistry in recognition of stewardship, cooperation and leadership in the finest pursuit of research in chemistry.
  - **Web of Science Highly Cited Researchers Distinction (University of Crete, 2019):** Recognizing the world's most influential researchers of the past decade, demonstrated by the production of multiple highly-cited papers that rank in the top 1% by citations for Chemistry for 2019 in Web of Science.
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## SYNERGISTIC ACTIVITIES

### Referee for the journals

*Nat. Commun.; Nat. Energy; Nat. Mater; Nature; J. Am. Chem. Soc.; Chem. Mater.; Inorg. Chem.; J. Phys. Chem. Lett.; J. Phys. Chem. C; Cryst. Growth Des.; Nano Lett.; ACS Energy Lett.; ACS Photon.; Appl. Phys. Lett.; J. Appl. Phys.; J. Coord. Chem.; APL Mater.; Crystals; Magnetochemistry; Chem; Joule; Adv. Mater.; Adv. Funct. Mater.; Adv. Energy Mater.; Angew. Chem., Int. Ed.; ChemSusChem; Electrochim. Acta; Synth. Met.; Sol. State Electronics; J. Mol. Struct.; Mater. Lett.; Inorg. Chem. Commun.; J. Sol. State Chem.; Mater. Chem. Phys.; Mater. Today; J. Mater. Chem. C; Chem. Commun.; Chem. Sci., Dalton Trans., Energy Environ. Sci.*

### Symposia organizer

E-MRS, Symposium G "Halide Perovskites Low Dimensions for Devices" Nice, France May 26-31 2019

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## PRESENTATIONS IN CONFERENCES AND WORKSHOPS

1. C. C. Stoumpos "Crystal Chemistry of Halide Perovskite Semiconductors" *Online NanoGe Meetup* April 23, 2020
2. C. C. Stoumpos "Crystal Chemistry of Halide Perovskites: When Structure-Property Relations Matter" *FORTH Seminars*, Heraklion, Greece, December 11, 2019
3. C. C. Stoumpos, "Structure-Property Relations Two-Dimensional Halide Perovskites" *NanoGe Meeting*, Berlin, Germany, November 4-8, 2019
4. C. C. Stoumpos, "Chemistry and Structural Diversity of Halide Perovskites: A Story of Structure-Property Relations" *EPFL Seminar*, Lausanne, Switzerland, July 3 2019
5. C. C. Stoumpos, "Halide Perovskites: Forging the Crystal Structure of Malleable Octahedral Semiconductors" *Weizmann Workshop: Structural and Electronic Dynamics in Soft Semiconductors*, Rehovot, Israel, February 5-7 2019
6. C. C. Stoumpos, "The Structural Evolution of Halide Perovskites" *GDRHPERO Workshop: Spectroscopy Tools for Halide Perovskites*, Paris, France, November 22 2018
7. C. C. Stoumpos, "Halide Perovskites: The New Generation of Versatile, High-Performance Inorganic Semiconductors" *XXXIII Panhellenic Conference on Solid State Physics and Materials Science*, Nicosia, Cyprus, September 17-19 2018
8. C. C. Stoumpos, "Halide Perovskites: Unconventional High-Performance Semiconductors" *NanoGe Meeting*, Rennes, France, February 27-March 1, 2018
9. C. C. Stoumpos, "Recipes for Tailoring the Optoelectronic Properties of the Halide Perovskite Semiconductors" *NASSCC Meeting*, Santa Barbara, California, U.S.A., August 16-19, 2017
10. C. C. Stoumpos, "Halide Perovskites: The New Generation of High-Performance Semiconductors", *Invited Lecture*, ETH-Zürich, Zürich, Switzerland, April 3, 2017
11. C. C. Stoumpos, "Halide Perovskites: High Performance Inorganic Semiconductors", *Invited Lecture*, University of Athens, Athens, Greece, March 30, 2017
12. C. C. Stoumpos, "Halide Perovskites: Exploring the Materials Chemistry of High-Performance Semiconductors", *Invited Lecture*, University of Crete, Heraklion, Greece, March 27, 2017

13. C. C. Stoumpos, "Hybrid Halide Perovskites: Exploring the Materials Chemistry of the New Class of High-Performance Semiconductors", *Invited Lecture*, Los Alamos National Laboratory, Los Alamos, New Mexico, U.S.A. September 8, 2016
14. C. C. Stoumpos "Inorganic chemistry and solar cells of hybrid halide perovskites", *TSRC Workshop "Electronic and Structural Dynamics in Hybrid Perovskites: Theory Meets Experiment"* Telluride, Colorado, U.S.A. July 12-16 2016
15. F. Hao, C. C. Stoumpos, D. H. Cao, M. G. Kanatzidis "Inorganic Chemistry and Solar Cells of Inorganic-organic Halide Perovskites" *MRS Meeting*, Phoenix, Arizona, U.S.A. 28 March - 1 April 2016
16. C. C. Stoumpos, J. Im, A. J. Freeman, M. G. Kanatzidis "Hybrid Organic-inorganic Halide Perovskites: Property Tuning Through Preparation Method Variation", *MRS Meeting*, San Francisco, California, U.S.A. 6-10 April 2015
17. C. C. Stoumpos, C. J. Milios, E. Kefalloniti, C. P. Raptopoulou, A. Terzis, A. Escuer, G. Aromi, O. Roubeau, S. J. Teat, S. P. Perlepes, "The use of Di-2-Pyridyl Ketone in Manganese Carboxylate Chemistry: Synthesis, Characterization and Magnetic Properties of Polynuclear Complexes", *2<sup>nd</sup> NAGC Workshop*, Syros, Greece, 18-21 June 2007
18. C. C. Stoumpos, "Methyl 2-pyridyl ketone Oxime in Manganese Carboxylate Chemistry: Mononuclear, Trinuclear and Octanuclear Complexes", *1<sup>st</sup> NAGC Workshop*, Nicosia, Cyprus, May 5-6, 2005

## LIST OF PUBLICATIONS (170 publications, ~20000 citations, *h*-index 58)

Research Articles (C: Communication; FP: Full Paper; P: Conference Proceedings; R: Review; V: Viewpoint \*: cited over 100 times) Author profiles: [Google Scholar](#): *Costas Stoumpos*; [ORCID](#): 0000-0001-8396-9578; [Scopus Author ID](#): 9045003800; [ResearcherID](#): P-6677-2016)

- 1 A. Escuer, J. Mayans, C. C. Stoumpos, M. Font-Bardia. "From bowls to capsules: assembly of hexanuclear Ni<sup>II</sup> rings tailored by alkali cations" *Chem. Eur. J.* 2020 in press (10.1002/chem.202001900) FP
- 2 L. Mao, P. Guo, M. Kepenekian, I. Spanopoulos, Y. He, C. Katan, J. Even, R. D. Schaller, R. Seshadri, C. C. Stoumpos, M. G. Kanatzidis. "Organic Cation Alloying on Intralayer A and Interlayer A' sites in 2D Hybrid Dion-Jacobson Lead Bromide Perovskites (A')(A)Pb<sub>2</sub>Br<sub>7</sub>" *J. Am. Chem. Soc.* 2020, 142, 8342-8351 FP
- 3 P. Guo, Y. Xia, J. Gong, D. H. Cao, X. Li, X. Li, Q. Zhang, C. C. Stoumpos, M. S. Kirschner, H. Wen, V. B. Prakapenka, J. B. Ketterson, A. B. F. Martinson, T. Xu, M. G. Kanatzidis, M. K. Y. Chan, R. D. Schaller. "Direct Observation of Bandgap Oscillations Induced by Optical Phonons in Hybrid Lead Iodide Perovskites" *Adv. Funct. Mater.* 2020, 30, 1907982 FP
- 4 X. Li, Y. He, M. Kepenekian, P. Guo, W. Ke, J. Even, C. Katan, C. C. Stoumpos, R. D. Schaller, M. G. Kanatzidis. "Three-dimensional Lead Iodide Perovskitoid Hybrids with High X-ray Photoresponse" *J. Am. Chem. Soc.* 2020, 142, 6625-6637 FP
- 5 S. Tepavcevic, H. Zheng, D. G. Hinks, B. Key, L. Ward, Z. Lu, C. C. Stoumpos, Y. Ren, J. W. Freeland, C. Wolverton, P. Phillips, R. Klie, J. F. Mitchell, N. M. Markovic. "Fundamental Insights from a Single-Crystal Sodium Iridate Battery" *Adv. Energy Mater.* 2020, 10, 1903128 FP
- 6 J. F. Khoury, J. He, J. E. Pfluger, I. Hadar, M. Balasubramanian, C. C. Stoumpos, R. Zu, V. Gopalan, C. Wolverton, M. G. Kanatzidis. "Ir<sub>6</sub>In<sub>32</sub>S<sub>21</sub>, a polar, metal-rich semiconducting subchalcogenide" *Chem. Sci.* 2020, 11, 870-878 FP
- 7 L. Mao, S. M. L. Teicher, C. C. Stoumpos, R. M. Kennard, R. A. DeCrescent, G. Wu, J. A. Schuller, M. L. Chabinyk, A. K. Cheetham, R. Seshadri. "Chemical and Structural Diversity of Hybrid Layered Double Perovskite Halides" *J. Am. Chem. Soc.* 2019, 141, 19099-19109 FP
- 8 K. M. McCall, D. Friedrich, D. G. Chica, W. Cai, C. C. Stoumpos, G. C. B. Alexander, S. Deemyad, B. W. Wessels, M. G. Kanatzidis. "Perovskites with a Twist: Strong In<sup>1+</sup> Off-centering in the Mixed-Valent CsInX<sub>3</sub> (X = Cl, Br)" *Chem. Mater.* 2019, 31, 9554-9566 FP

- 9 W. Ke, C. C. Stoumpos, M. G. Kanatzidis. **"Unleaded" Perovskites: Status Quo and Future Prospects of Tin-Based Perovskite Solar Cells**" *Adv. Mater.* 2019, **31**, e1803230 R
- 10 E. Ruggeri, S. D. Stranks, E. Manidakis, C. C. Stoumpos, C. Katan. **"Halide Perovskites: Low Dimensions for Devices"** *ACS Energy Lett.* 2019, 2902-2904 V
- 11 L. Mao, R. M. Kennard, B. Traore, W. Ke, C. Katan, J. Even, M. L. Chabinye, C. C. Stoumpos, M. G. Kanatzidis. **"Seven-Layered 2D Hybrid Lead Iodide Perovskites"** *Chem* 2019, **5**, 2593-2604 FP
- 12 H. J. Jung, C. C. Stoumpos, M. G. Kanatzidis, V. P. Dravid. **"Self-Passivation of 2D Ruddlesden-Popper Perovskite by Polytypic Surface PbI<sub>2</sub> Encapsulation"** *Nano Lett.* 2019, **19**, 6109-6117 FP
- 13 S. B. Todd, D. B. Riley, A. Binai-Motlagh, C. Clegg, A. Ramachandran, S. A. March, J. M. Hoffman, I. G. Hill, C. C. Stoumpos, M. G. Kanatzidis, Z.-G. Yu, K. C. Hall. **"Detection of Rashba spin splitting in 2D organic-inorganic perovskite via precessional carrier spin relaxation"** *APL Mater.* 2019, **7**, 081116 C
- 14 X. Li, W. Ke, B. Traore, P. Guo, I. Hadar, M. Kepenekian, J. Even, C. Katan, C. C. Stoumpos, R. D. Schaller, M. G. Kanatzidis. **"Two-dimensional Dion-Jacobson Hybrid Lead Iodide Perovskites with Aromatic Diammonium Cations"** *J. Am. Chem. Soc.* 2019, **141**, 12880-12890 FP
- 15 X. Jiang, J. M. Hoffman, C. C. Stoumpos, M. G. Kanatzidis, E. Harel. **"Transient Sub-Bandgap States at Grain Boundaries of CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite Act as Fast Temperature Relaxation Centers"** *ACS Energy Lett.* 2019, **4**, 1741-1747. C
- 16 W. Lin, Z. Liu, C. C. Stoumpos, S. Das, Y. He, I. Hadar, J. A. Peters, K. M. McCall, Y. Xu, D. Y. Chung, B. W. Wessels, M. G. Kanatzidis. **"Purification and Improved Nuclear Radiation Detection of Tl<sub>6</sub>Si<sub>4</sub> Semiconductor"** *Cryst. Growth Des.* 2019, **19**, 4738-4744. FP
- 17 H. Xie, X. Su, X. Zhang, S. Hao, T. P. Bailey, C. C. Stoumpos, A. P. Douvalis, X. Hu, C. Wolverton, V. P. Dravid, C. Uher, X. Tang, M. G. Kanatzidis. **"Origin of intrinsically low thermal conductivity in talnakhite Cu<sub>17.6</sub>Fe<sub>17.6</sub>S<sub>32</sub> thermoelectric material: correlations between lattice dynamics and thermal transport"** *J. Am. Chem. Soc.* 2019, **141**, 10905-10914 FP
- 18 J. M. Hoffman, X. Che, S. Sidhik, X. Li, I. Hadar, J.-C. Blancon, H. Yamaguchi, M. Kepenekian, C. Katan, J. Even, C. C. Stoumpos, A. D. Mohite, M. G. Kanatzidis. **"From 2D to 1D Electronic Dimensionality in Halide Perovskites with Stepped and Flat Layers Using Propylammonium as a Spacer"** *J. Am. Chem. Soc.* 2019, **141**, 10661-10676. FP
- 19 X. Li, P. Guo, M. Kepenekian, I. Hadar, C. Katan, J. Even, C. C. Stoumpos, R. D. Schaller, M. G. Kanatzidis. **"Small Cyclic Diammonium Cation Templated (110)-oriented 2D Halide (X = I, Br, Cl) Perovskites with White-light Emission"** *Chem. Mater.* 2019, **31**, 3582-3590 FP
- 20 I. Spanopoulos, I. Hadar, W. Ke, Q. Tu, M. Chen, H. Tsai, Y. He, G. Shekhawat, V. P. Dravid, M. R. Wasielewski, A. D. Mohite, C. C. Stoumpos, M. G. Kanatzidis. **"Uniaxial Expansion of the 2D Ruddlesden-Popper Perovskite Family for Improved Environmental Stability"** *J. Am. Chem. Soc.* 2019, **141**, 5518-5534 FP
- 21 H. Chen, J. He, C. D. Malliakas, C. C. Stoumpos, A. J. E. Rettie, J.-K. Bao, D. Y. Chung, W.-K. Kwok, C. Wolverton, M. G. Kanatzidis. **"A Natural 2D Heterostructure [Pb<sub>3.1</sub>Sb<sub>0.9</sub>S<sub>4</sub>][Au<sub>x</sub>Te<sub>2-x</sub>] with Large Transverse Non-saturating Negative Magnetoresistance and High Electron Mobility"** *J. Am. Chem. Soc.* 2019, **141**, 7544-7553 FP
- 22 K. M. McCall, C. C. Stoumpos, O. Y. Kontsevoi, G. C. B. Alexander, B. W. Wessels, M. G. Kanatzidis. **"From 0D Cs<sub>3</sub>Bi<sub>2</sub>I<sub>9</sub> to 2D Cs<sub>3</sub>Bi<sub>2</sub>I<sub>6</sub>Cl<sub>3</sub>: Dimensional Expansion Induces Direct Bandgap but Enhances Electron-Phonon Coupling"** *Chem. Mater.* 2019, **31**, 2644-2650 FP
- 23 W. Ke, L. Mao, C. C. Stoumpos, J. Hoffman, I. Spanopoulos, A. D. Mohite, M. G. Kanatzidis. **"Compositional and Solvent Engineering in Dion-Jacobson 2D Perovskites Boosts Solar Cell Efficiency and Stability"** *Adv. Energy Mater.* 2019, **9**, 1803384 FP
- 24 L. Mao, C. C. Stoumpos, M. G. Kanatzidis. **"Two-dimensional Hybrid Halide Perovskites: Principles and Promises"** *J. Am. Chem. Soc.* 2019, **141**, 1171-1190 R \*
- 25 C. M. M. Soe, G. P. Nagabhushana, R. Shivaramaiah, H. Tsai, W. Nie, J.-C. Blancon, F. Melkonyan, D. H. Cao, B. Traoré, L. Pedesseau, M. Kepenekian, C. Katan, J. Even, T. J. Marks, A. Navrotsky, A. D. Mohite, C. C. Stoumpos, M. G. Kanatzidis. **"Structural and thermodynamic limits of layer thickness in 2D halide perovskites"** *Proc. Natl. Ac. Sci.* 2019, **116**, 58-66 FP
- 26 X. Su, N. Zhao, S. Hao, C. C. Stoumpos, M. Liu, H. Chen, H. Xie, Q. Zhang, C. Wolverton, X. Tang, M. G. Kanatzidis. **"High Thermoelectric Performance in the Wide Band-Gap AgGa<sub>1-x</sub>Te<sub>2</sub>**

- Compounds: Directional Negative Thermal Expansion and Intrinsically Low Thermal Conductivity"** *Adv. Funct. Mater.* 2019, 29, 1806534 FP
- 27 P. Guo, A. Mannodi-Kanakkithodi, J. Gong, Y. Xia, C. C. Stoumpos, D. H. Cao, B. T. Diroll, J. B. Ketterson, G. P. Wiederrecht, T. Xu, M. K. Y. Chan, M. G. Kanatzidis, R. D. Schaller. **"Infrared-pump electronic-probe of methylammonium lead iodide reveals electronically decoupled organic and inorganic sublattices"** *Nat. Commun.* 2019, 10, 482 C
- 28 Y. Xu, B. Jiao, T.-B. Song, C. C. Stoumpos, Y. He, I. Hadar, W. Lin, W. Jie, M. G. Kanatzidis. **"The 0D Cs<sub>2</sub>TeI<sub>6</sub> Perovskite: Solution Processed Thick Films with High X-Ray Sensitivity"** *ACS Photon.* 2019, 6, 196-203 FP
- 29 C. C. Stoumpos. **"Tin Perovskite Solar Cells Are Back in the Game"** *Joule* 2018, 2, 2517-2518 V
- 30 H. Zhang, H. Chen, C. C. Stoumpos, J. Ren, Q. Hou, X. Li, J. Li, H. He, H. Lin, J. Wang, F. Hao, M. G. Kanatzidis. **"Thiazole induced surface passivation and recrystallization of CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> films for perovskite solar cells with ultrahigh fill factors"** *ACS Appl. Mater. Interf.* 2018, 10, 42436-42443 FP
- 31 W. Ke, I. Spanopoulos, C. C. Stoumpos, M. G. Kanatzidis. **"Myths and reality of HPbI<sub>3</sub> in halide perovskite solar cells"** *Nat. Commun.* 2018, 9, 4785 C
- 32 Q. Tu, I. Spanopoulos, P. Yasaei, C. C. Stoumpos, M. G. Kanatzidis, G. S. Shekhawat, V. P. Dravid. **"Stretching and Breaking of Ultrathin 2D Hybrid Organic-Inorganic Perovskites"** *ACS Nano* 2018, 12, 10347-10354 FP
- 33 A. G. Kontos, A. Kaltzoglou, M. K. Arfanis, K. M. McCall, C. C. Stoumpos, B. W. Wessels, P. Falaras, M. G. Kanatzidis. **"Dynamic Disorder, Band Gap Widening, and Persistent Near-IR Photoluminescence up to At Least 523 K in ASnI<sub>3</sub> Perovskites (A = Cs<sup>+</sup>, CH<sub>3</sub>NH<sub>3</sub><sup>+</sup> and NH<sub>2</sub>-CH=NH<sub>2</sub><sup>+</sup>)"** *J. Phys. Chem. C* 2018, 122, 26353-26361 FP
- 34 G. Bounos, M. Karnachoriti, A. G. Kontos, C. C. Stoumpos, L. Tsetseris, A. Kaltzoglou, X. Guo, X. Lü, Y. S. Raptis, M. G. Kanatzidis, P. Falaras. **"Defect Perovskites under Pressure: Structural Evolution of Cs<sub>2</sub>SnX<sub>6</sub> (X = Cl, Br, I)"** *J. Phys. Chem. C* 2018, 122, 24004-24013 FP
- 35 Y. He, W. Ke, G. C. B. Alexander, K. M. McCall, D. G. Chica, Z. Liu, I. Hadar, C. C. Stoumpos, B. W. Wessels, M. G. Kanatzidis. **"Resolving the Energy of Gamma-ray Photons with MAPbI<sub>3</sub> Single Crystals"** *ACS Photon.* 2018, 5, 4132-4138 FP
- 36 L. Mao, P. Guo, M. Kepenekian, I. Hadar, C. Katan, J. Even, R. D. Schaller, C. C. Stoumpos, M. G. Kanatzidis. **"Structural Diversity in White-light Emitting Hybrid Lead Bromide Perovskites"** *J. Am. Chem. Soc.* 2018, 140, 3775-3783 FP\*
- 37 X. Li, J. Hoffman, W. Ke, M. Chen, H. Tsai, W. Nie, A. D. Mohite, M. Kepenekian, C. Katan, J. Even, M. R. Wasielewski, C. C. Stoumpos, M. G. Kanatzidis. **"Two-dimensional Halide Perovskites Incorporating Straight Chain Symmetric Diammonium Ions, (NH<sub>3</sub>C<sub>m</sub>H<sub>2m</sub>NH<sub>3</sub>)(CH<sub>3</sub>NH<sub>3</sub>)<sub>n</sub>-<sub>1</sub>Pb<sub>n</sub>I<sub>3n+1</sub> (m = 4 - 9; n = 1 - 4)"** *J. Am. Chem. Soc.* 2018, 140, 12226-12238 FP
- 38 P. Guo, W. Huang, C. C. Stoumpos, L. Mao, J. Gong, L. Zeng, B. T. Diroll, Y. Xia, X. Ma, D. J. Gosztola, T. Xu, J. B. Ketterson, M. J. Bedzyk, A. Facchetti, T. J. Marks, M. G. Kanatzidis, R. D. Schaller. **"Hyperbolic Dispersion Arising from Anisotropic Excitons in Two-Dimensional Perovskites"** *Phys. Rev. Lett.* 2018, 121, 127401 C
- 39 M. Kepenekian, B. Traore, J.-C. Blancon, L. Pedesseau, H. Tsai, W. Nie, C. C. Stoumpos, M. G. Kanatzidis, J. Even, A. D. Mohite, S. Tretiak, C. Katan. **"Concept of lattice mismatch and emergence of surface states in 2D hybrid perovskite quantum wells"** *Nano Lett.* 2018, 18, 5603-5609 C
- 40 J. Li, Q. Yu, Y. He, C. C. Stoumpos, G. Niu, G. Trimarchi, H. Guo, G. Dong, D. Wang, L. Wang, M. G. Kanatzidis. **"Cs<sub>2</sub>PbI<sub>2</sub>Cl<sub>2</sub>, All-Inorganic Two-Dimensional Ruddlesden-Popper Mixed Halide Perovskite with Optoelectronic Response"** *J. Am. Chem. Soc.* 2018, 140, 11085-11090 FP
- 41 H. J. Jung, C. C. Stoumpos, M. G. Kanatzidis, V. P. Dravid. **"Dynamic Surface Reconstruction of 2D Ruddlesden-Popper Halide Perovskite under e-Beam Irradiation"** *Microsc. Microanal.* 2018, 24, 1490-1491 FP
- 42 K. M. McCall, Z. Liu, G. Trimarchi, C. C. Stoumpos, W. Lin, Y. He, I. Hadar, M. G. Kanatzidis, B. W. Wessels. **" $\alpha$ -Particle Detection and Charge Transport Characteristics in the A<sub>3</sub>M<sub>2</sub>I<sub>9</sub> Defect Perovskites (A = Cs, Rb; M = Bi, Sb)"** *ACS Photon.* 2018, 5, 3748-3762 FP

- 43 G. Liu, J. Gong, L. Kong, R. D. Schaller, Q. Hu, Z. Liu, S. Yan, W. Yang, C. C. Stoumpos, M. G. Kanatzidis, H.-k. Mao, T. Xu. **"Isothermal pressure-derived metastable states in 2D hybrid perovskites showing enduring bandgap narrowing"** *Proc. Natl. Ac. Sci.* 2018, 115, 8076-8081 **FP**
- 44 P. Guo, J. Gong, S. Sadasivam, Y. Xia, T.-B. Song, B. T. Diroll, C. C. Stoumpos, J. B. Ketterson, M. G. Kanatzidis, M. K. Y. Chan, P. Darancet, T. Xu, R. D. Schaller. **"Slow thermal equilibration in methylammonium lead iodide revealed by transient mid-infrared spectroscopy"** *Nat. Commun.* 2018, 9, 2792 **C**
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