

THOMAS J. KEMPA

Department of Chemistry
 Johns Hopkins University
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PROFESSIONAL APPOINTMENTS

Johns Hopkins University

Assistant Professor, Department of Chemistry	2015 – present
Assistant Professor, Department of Materials Science and Engineering	2017 – present

Massachusetts Institute of Technology & Harvard University

Postdoctoral Fellow, Department of Chemistry	2012 – 2015
<i>Advisor: Prof. Daniel G. Nocera</i>	

EDUCATION

Harvard University

Ph. D. in Chemistry	2006 – 2012
<i>Advisor: Prof. Charles M. Lieber</i>	

Imperial College London

Post-graduate studies during Marshall Scholarship	2004 – 2006
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Boston College

B.S. in Chemistry with Highest Honors, <i>magna cum laude</i>	2000 – 2004
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AWARDS & HONORS

DARPA Young Faculty Award	2021
35 PIs under 35 Recognition for Materials Science Contributions, <i>Matter</i>	2021
Discovery Award, Johns Hopkins University	2020
Discovery Award, Johns Hopkins University	2019
Emerging Investigator Award, <i>J. Mater. Chem. A</i>	2019
NSF CAREER Award	2018
Toshiba Distinguished Young Investigator	2018
Dreyfus Foundation Fellowship in Environmental Chemistry	2015
IUPAC Young Chemist Prize for Best Ph.D. Research	2013
Dudley R. Herschbach Teaching Award, Harvard University	2011
Fieser Award Lecture, Harvard University	2011
Materials Research Society Graduate Student Award	2011
NSF Graduate Research Fellow	2006 – 2009
Marshall Scholar (Class of 2004)	2004 – 2006
Matthew Copithorne Fellowship, Boston College	2004
Phi Beta Kappa	2003
Arnold and Mabel Beckman Scholar	2002 – 2003

PUBLICATIONS

* corresponding author, † equal contribution, ^ undergraduate co-author

Independent Career

36. S. Y. Quek[†], K. S. Thygesen[†], Y. Liu[†], G. Pourtois[†], T. Choudhury[†], **T. J. Kempa[†]**, B. Schuler[†], D. Basov[†], F. de Vries[†], Z. Lin[†], M. Edmonds[†], U. Wurstbauer[†], G. Cerullo[†], B. Beschoten[†], S. P. Dash[†], N. Glavin[†], S. Wu, S. Das[†], J. A. Robinson[†], M. Terrones[†]
ACS Nanoscience Au | *In preparation* (2021) [Invited Review on status of 2D Materials]
35. **T. J. Kempa[†]** (all 35 early career PIs have not yet been officially named)
“35 challenges in materials science being tackled by PIs under 35”
Matter | *Submitted* (2021) [Invited Article Contribution]
34. E. C. Sadler, T. Chowdhury, R. Dziobek-Garrett, C. Li, T. Mueller, and **T. J. Kempa^{*}**
“Role of H₂ during substrate directed synthesis of MoSe₂ nanoribbons”
ACS Appl. Nano Mater. | *Submitted* (2021)
33. T. Chowdhury, K. Jo, S. B. Anantharaman, T. H. Brintlinger, D. Jariwala, and **T. J. Kempa^{*}**
“Anomalous room-temperature photoluminescence from nano-strained MoSe₂ monolayers”
ACS Photonics **8**, 2220–2226 (2021). [Link](#)
32. T. H. Brintlinger, T. Chowdhury, and **T. J. Kempa**
“Identification of nanoscale localized strain in 2D transition metal dichalcogenide hybrid architectures through scanning transmission electron microscopy”
Microsc. Microanal. **27**, 662–664 (2021). [Link](#)
31. E. S. Thompson, H. Gangi, J. Hwang, and **T. J. Kempa^{*}**
“Parallel synthesis of nanoscale Si superlattices through eutectic confinement for semiconductor p–n junctions”
ACS Appl. Nano Mater. **4**, 985–989 (2021). [Link](#)
30. F. J. Claire[†], M. A. Solomos[†], J. Kim, G. Wang, M. A. Siegler, M. F. Crommie, and **T. J. Kempa^{*}**
“Structural and electronic switching of a single crystal 2D metal-organic framework prepared by chemical vapor deposition”
Nature Commun. **11**, 5524 (2020). [Link](#) [Featured as *Editors' Highlight* Article]
29. T. Chowdhury[†], E. C. Sadler[†], and **T. J. Kempa^{*}**
“Progress and prospects in transition-metal dichalcogenide research beyond 2D”
Chem. Rev. **120**, 12563–12591 (2020). [Link](#)
28. M. Sliwa[†], B. O. Stephens[†], Z. Zhang, and **T. J. Kempa^{*}**
“Harnessing host-guest interactions to control structure at the nanoscale”
Pure Appl. Chem. **92**, 1895–1900 (2020). [Link](#)
27. E. C. Sadler, and **T. J. Kempa^{*}**
“Chalcogen incorporation process during high vacuum conversion of bulk Mo oxides to Mo

dichalcogenides”

ACS Appl. Electron. Mater. **2**, 1020–1025 (2020). [Link](#)

26. T. Chowdhury, J. Kim, E. C. Sadler, C. Li, S.-W. Lee, K. Jo, W. Xu, D. H. Gracias, N. V. Drichko, D. Jariwala, T. H. Brintlinger, T. Mueller, H.-G. Park, and **T. J. Kempa***
“Substrate-directed synthesis of MoS₂ nanocrystals with tunable dimensionality and optical properties”
Nature Nanotechnol. **15**, 29–34 (2020). [Link](#)
25. M. A. Solomos, F. J. Claire, and **T. J. Kempa***
“2D molecular crystal lattices: Advances in their synthesis, characterization, and application”
J. Mater. Chem. A **7**, 23537–23562 (2019). [Link](#) [Emerging Investigator Invited Issue]
24. Y. Wang, D. Sun, T. Chowdhury, J. S. Wagner, **T. J. Kempa**, and A. S. Hall*
“Rapid room-temperature synthesis of a metastable ordered intermetallic electrocatalyst”
J. Am. Chem. Soc. **141**, 2342–2347 (2019). [Link](#)
23. M. M. Li[†], F. J. Claire[†], M. A. Solomos[†], S. M. Tenney[^], S. Ivanov, M. A. Siegler, and **T. J. Kempa***
“Molecular chains of coordinated dimolybdenum isonicotinate paddlewheel clusters”
RSC Adv. **9**, 16492–16495 (2019). [Link](#)
22. F. J. Claire[†], S. M. Tenney^{†,^}, M. M. Li[†], M. A. Siegler, J. S. Wagner, A. S. Hall, and **T. J. Kempa***
“Hierarchically ordered two-dimensional coordination polymers assembled from redox-active dimolybdenum clusters”
J. Am. Chem. Soc. **140**, 10673–10676 (2018). [Link](#) [Communication]
21. A. E. Kossak^{†,^}, B. O. Stephens[†], Y. Tian, P. Liu, M. Chen, and **T. J. Kempa***
“Anisotropic and multicomponent nanostructures by controlled symmetry breaking of metal halide intermediates”
Nano Lett. **18**, 2324–2328 (2018). [Link](#)
20. N. Li[†], D. K. Bediako[†], R.-G. Hadt, D. Hayes, **T. J. Kempa**, F. Cube, D. C. Bell, L. X. Chen, and D. G. Nocera*
“Influence of iron doping on tetravalent nickel content in catalytic oxygen evolving films”
Proc. Natl. Acad. Sci. USA **114**, 1486–1491 (2017). [Link](#)
19. H. G. Park, S. K. Kim, K. D. Song, **T. J. Kempa**, and C. M. Lieber
“Multishell nanowires for next-generation photovoltaics”
Prog. Electromagn. Res. **1**, 1864 (2016). [Link](#)

Prior to Joining JHU Faculty

18. **T. J. Kempa**, D. K. Bediako, S.-K. Kim, H.-G. Park, and D. G. Nocera
“High-throughput patterning of photonic structures with tunable periodicity”
Proc. Natl. Acad. Sci. USA **112**, 5309–5313 (2015). [Link](#)
17. **T. J. Kempa**, D. K. Bediako, E. C. Jones, C. M. Lieber, and D. G. Nocera

- "Facile, rapid, and large-area periodic patterning of semiconductor substrates with sub-micron inorganic structures"
J. Am. Chem. Soc. **137**, 3739–3742 (2015). [Link](#)
16. C. M. Lemon, E. Karnas, X. Han, O. T. Bruns, **T. J. Kempa**, D. Fukumura, M. G. Bawendi, R. K. Jain, D. G. Duda, and D. G. Nocera
"Micelle-Encapsulated Quantum Dot-Porphyrin Assemblies as *in vivo* Two-Photon Oxygen Sensors"
J. Am. Chem. Soc. **137**, 9832–9842 (2015). [Link](#)
15. K.-D. Song, **T. J. Kempa**, H.-G. Park, and S.-K. Kim
"Laterally assembled nanowires for ultrathin broadband solar absorbers"
Opt. Express **22**, A992–A1000 (2014). [Link](#)
14. S.-K. Kim, K.-D. Song, **T. J. Kempa**, R. W. Day, C. M. Lieber, and H.-G. Park
"Design of nanowire optical cavities as efficient photon absorbers"
ACS Nano **8**, 3707–3714 (2014). [Link](#)
13. **T. J. Kempa** and C. M. Lieber
"Semiconductor nanowire solar cells: Synthetic advances and tunable properties"
Pure Appl. Chem. **86**, 13–26 (2014). [Link](#) [IUPAC Young Chemist Prize Invited Review]
12. **T. J. Kempa**, S.-K. Kim, H.-G. Park, R. W. Day, D. G. Nocera, and C. M. Lieber
"Facet-selective growth on nanowires yields multi-component nanostructures and photonic devices"
J. Am. Chem. Soc. **135**, 18354–18357 (2013). [Link](#)
11. **T. J. Kempa**, R. W. Day, S.-K. Kim, H.-G. Park, and C. M. Lieber
"Semiconductor nanowires: A platform for exploring limits and concepts for nano-enabled solar cells"
Energy Environ. Sci. **6**, 719–733 (2013). [Link](#) [Feature Review Article]
10. S.-K. Kim, R. W. Day, J. F. Cahoon, **T. J. Kempa**, K.-D. Song, H.-G. Park, and C. M. Lieber
"Tuning light absorption in core/shell silicon nanowire photovoltaic devices through morphological design"
Nano Lett. **12**, 4971–4976 (2012). [Link](#)
9. **T. J. Kempa**, J. F. Cahoon, S.-K. Kim, R. W. Day, D. C. Bell, H.-G. Park, and C. M. Lieber
"Coaxial multishell nanowires with high-quality electronic interfaces and tunable optical cavities for ultrathin photovoltaics"
Proc. Natl. Acad. Sci. USA **109**, 1407–1412 (2012). [Link](#)
8. B. Tian, P. Xie, **T. J. Kempa**, D.C. Bell, and C. M. Lieber
"Single crystalline kinked semiconductor nanowire superstructures"
Nature Nanotechnol. **4**, 824–829 (2009). [Link](#)

7. Y. Dong, B. Tian, **T. J. Kempa**, and C. M. Lieber
"Coaxial group III-nitride nanowire photovoltaics"
Nano Lett. **9**, 2183–2187 (2009). [Link](#)
6. B. Tian, **T. J. Kempa**, and C. M. Lieber
"Single nanowire photovoltaics"
Chem. Soc. Rev. **38**, 16–24 (2009). [Link](#)
5. **T. J. Kempa**, B. Tian, D. Kim, J. Hu, X. Zheng, and C. M. Lieber
"Single and tandem axial p-i-n nanowire photovoltaic devices"
Nano Lett. **8**, 3456–3460 (2008). [Link](#)
4. B. Tian, X. Zheng, **T. J. Kempa**, Y. Fang, N. Yu, G. Yu, J. Huang, and C. M. Lieber
"Coaxial silicon nanowires as solar cells and nanoelectronic power sources"
Nature **449**, 885–890 (2007). [Link](#)
3. **T. Kempa**, R. Farrer, M. Giersig, and J. T. Fourkas
"Photochemical synthesis and multiphoton luminescence of monodisperse silver nanocrystals"
Plasmonics **1**, 45–51 (2006). [Link](#)
2. **T. Kempa**, D. Carnahan, M. Olek, M. Correa, M. Giersig, M. Cross, G. Benham, M. Sennett, Z. F. Ren, and K. Kempa
"Dielectric media based on isolated metallic nanostructures"
J. Appl. Phys. **98**, 034310 (2005). [Link](#)
1. Y. Wang, K. Kempa, B. Kimball, J. B. Carlson, G. Benham, W. Z. Li, **T. Kempa**, J. Rybczynski, A. Herczynski, and Z. F. Ren
"Receiving and transmitting light-like radio waves: Antenna effect in arrays of aligned carbon nanotubes"
Appl. Phys. Lett. **85**, 2607–2609 (2004). [Link](#)

BOOKS

2. S-K. Kim, **T. J. Kempa**, C. M. Lieber, and H-G. Park.
"Nanowire Photonics and their Applications" in *Computational Nanophotonics: Modeling and Applications*
S. M. Musa, ed., CRC Press - Taylor and Francis Group, LLC, New York, 2013.
1. Edited and translated book chapter in *Nanoparticle Assemblies and Superstructures*
N. Kotov, ed., Marcel Dekker Inc., New York, 2003.

PATENTS

5. **Thomas J. Kempa**, Tomojit Chowdhury, Jungkil Kim, Erick C. Sadler, 62/936,112
"Substrate directed synthesis of transition-metal dichalcogenide crystals with tunable dimensionality and optical properties" Filed Nov 15, 2019

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| 4. | Thomas J. Kempa , Eric Thompson, Hiro Gangi, Jongil Hwang,
<i>"Semiconductor superlattice synthesis using a confined vapor-liquid-solid growth approach"</i> | 16/456,265
Filed June 26, 2019 |
| 3. | Daniel G. Nocera, Thomas J. Kempa , Daniel K. Bediako, Charles M. Lieber, Evan C. Jones, <i>"A method for nano- and micro-patterning using electrochemically active interfaces"</i> | WO/2016/130672A1
Issued Aug 18, 2016. |
| 2. | Charles M. Lieber, Robert Day, Max Mankin, Ruixuan Gao, Thomas J. Kempa , <i>"Controlled growth of nanoscale wires"</i> | WO/2015/171699
Issued Nov 12, 2015 |
| 1. | Charles M. Lieber, Thomas J. Kempa , Sun-Kyung Kim, Robert Day, Hong-Gyu Park, <i>"Anisotropic Deposition in Nanoscale Wires"</i> | WO/2014/123860
Issued Aug 14, 2014 |

INVITED SEMINARS & INVITED CONFERENCE PRESENTATIONS

Independent Career

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| 66. | Harvard University Department of Chemistry | TBD |
| 65. | Massachusetts Institute of Technology Department of Chemistry | TBD |
| 64. | Columbia University Department of Chemistry | TBD |
| 63. | Northwestern University Department of Chemistry & International Institute for Nanotechnology: "Frontiers in Nanotechnology" | March, 2022 |
| 62. | University of California Irvine Department of Chemistry | Feb, 2022 |
| 61. | University of California Los Angeles Department of Chemistry | Feb, 2022 |
| 60. | California Institute of Technology Department of Chemistry | Feb, 2022 |
| 59. | University of North Carolina, Chapel Hill Department of Chemistry | Jan, 2022 |
| 58. | University of Michigan Department of Chemistry | Dec, 2021 |
| 57. | University of Chicago Department of Chemistry | Nov, 2021 |
| 56. | ACS Middle Atlantic Regional Meeting Porous Materials Session | June, 2021 |
| 55. | ACS Middle Atlantic Regional Meeting Nanoparticles Session | June, 2021 |
| 54. | Stanford University Department of Chemistry | May, 2021 |
| 53. | 2021 Graphene and Beyond Workshop Hosted by Penn State Center for 2D and Layered Materials; Virtual Meeting | May, 2021 |
| 52. | MRS Spring Meeting Symposium on Manipulation and Detection of Physical Properties of 2D Quantum Materials (NM06); Virtual Meeting | Apr, 2021 |
| 51. | ACS National Meeting Symposium on 2D Materials; Virtual Meeting | Apr, 2021 |
| 50. | University of North Carolina, Greensboro Department of Chemistry | Mar, 2021 |
| 49. | University of Illinois, Urbana-Champaign Department of Chemistry | Mar, 2020 |
| 48. | Carnegie-Mellon University Department of Materials Science & Engineering | Feb, 2020 |
| 47. | George Mason University Department of Chemistry | Feb, 2020 |
| 46. | University of California Berkeley Department of Chemistry | Feb, 2020 |
| 45. | International Conference on Advanced Materials & Devices; Jeju, S. Korea | Dec, 2019 |
| 44. | MRS Fall Meeting Symposium FF01; Boston, USA | Dec, 2019 |
| 43. | ACS Southeast Regional Meeting Well-Defined Supramolecular Materials; Savannah, USA | Oct, 2019 |

- 42. Georgetown University | Department of Chemistry Sept, **2019**
- 41. ACS National Meeting | Symposium on Nanoscale and Molecular Assemblies; San Diego, USA Aug, **2019**
- 40. Gordon Research Conference | Nanoporous Materials and their Applications; Andover, NH Aug, **2019**
- 39. Nanyang Technological University | Department of Physics; Singapore July, **2019**
- 38. National University of Singapore | Department of Physics; Singapore July, **2019**
- 37. Harvard University | Symposium in honor of Charles Lieber's 60th birthday Apr, **2019**
- 36. 6th International MOF Conference; Auckland, NZ Dec, **2018**
- 35. MRS Fall Meeting | Symposium EP03; Boston, USA Nov, **2018**
- 34. ACS National Meeting | Symposium INOR & COLL; Boston, USA Aug, **2018**
- 33. NSF Center for Chemical Innovation | Solar Fuels Capstone Meeting; Ventura, USA July, **2018**
- 32. Toshiba Global R&D Center | Distinguished Young Investigator Talk; Tokyo, Japan June, **2018**
- 31. Gordon Research Conference | Two Dimensional Electronics Beyond Graphene; Andover, NH June, **2018**
- 30. International Conference on Advanced Materials & Devices; Jeju, S. Korea Dec, **2017**
- 29. OSA Asia Communications and Photonics Conference 2017 | Photonics for Energy; Guangzhou, China Nov, **2017**
- 28. The George Washington University | Department of Chemistry Oct, **2017**
- 27. ACS National Meeting | Symposium INOR & COLL; Washington DC, USA Aug, **2017**
- 26. MRS Spring Meeting | Symposium ED6; Phoenix, USA Apr, **2017**
- 25. Johns Hopkins University | OneChemistry Symposium; Baltimore, USA Mar, **2017**
- 24. University of Ulm | Institute for Electron Devices; Ulm, Germany Jan, **2017**

Prior to Joining JHU Faculty

- 23. Massachusetts Institute of Technology | Department of Chemical Engineering Feb, **2015**
- 22. California Institute of Technology | Department of Chemistry Dec, **2014**
- 21. Johns Hopkins University | Department of Chemistry Dec, **2014**
- 20. University of California Los Angeles | Department of Chemistry Nov, **2014**
- 19. Gordon Research Conference | Nanostructure Fabrication; Biddeford, ME July, **2014**
- 18. University of Illinois Urbana-Champaign | Department of Materials Science and Engineering Feb, **2014**
- 17. Massachusetts Institute of Technology | Boston Regional Inorganic Colloquium Feb, **2014**
- 16. NSF Center for Chemical Innovation | Solar Fuels Meeting; Huntington Beach, USA Jan, **2014**
- 15. University of Washington Seattle | Department of Chemistry Jan, **2014**
- 14. University of Maryland College Park | Department of Chemistry and Biochemistry Jan, **2014**
- 13. New York University | Department of Chemistry Dec, **2013**
- 12. University of Pennsylvania | Department of Chemistry Dec, **2013**

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| 11. | Gordon Research Seminar Clusters, Nanocrystals, and Nanostructures;
South Hadley, MA | Aug, 2013 |
| 10. | Photonics West Conference LASE Symposium; San Francisco, USA | Feb, 2013 |
| 9. | Korea Advanced Institute of Science and Technology Physics Department;
Daejeon, S. Korea | June, 2012 |
| 8. | Korea University Physics Department; Seoul, S. Korea | June, 2012 |
| 7. | ACS National Meeting Symposium on Sustainable Inorganic Chemistry;
San Diego, USA | Mar, 2012 |
| 6. | Harvard University Fieser Award Lecture | Sept, 2011 |
| 5. | MRS Spring Meeting Graduate Student Award Talk; San Francisco, USA | Apr, 2011 |
| 4. | Conference on 1D Nanostructures for Photovoltaics; Mallorca, Spain | Sept, 2010 |
| 3. | Optical Society of America Conference at MIT; Cambridge, USA | June, 2009 |
| 2. | IEEE – Laser and Electro-Optics Society Meeting; Newport Beach, USA | Nov, 2008 |
| 1. | European Science Foundation Meeting on Nanotechnology for Renewable
Energy; Obergurgl, Austria | June, 2008 |

EXTERNAL SERVICE & PROFESSIONAL ACTIVITIES

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| Board Member | • Member of Early Career Researcher Board of the journal
<i>Multifunctional Materials</i> | 2019 – present |
| Organizer | • Lead organizer of the 2021 Spring MRS Symposium on “2D
Materials Beyond Graphene” (NM07) | Apr. 2021 |
| Workshop | • Participant at the NSF Interdisciplinary Workshop on
Hybrids & Interfaces; SSMC-funded PI workshop | Oct. 2019 |
| Examiner | • External PhD examiner at Korea University (Jin-Sung Park)
• External PhD examiner at University of Ulm (Nico Hibst) | Dec. 2019
Jan. 2017 |
| Reviewer | • Reviewer for the following journals: <i>Journal of the
American Chemical Society, Chemical Reviews, Nano Letters,
ACS Nano, Physical Review X, Energy & Environmental
Science, Nature Communications, ACS Photonics, ACS Applied
Materials and Interfaces, Advanced Functional Materials,
Advanced Materials, Journal of Physical Chemistry Letters,
Journal of Physical Chemistry C, Journal of Applied Physics,
Nature Scientific Reports, Powder Diffraction, Science
Advances, Chemistry of Materials, Chemical Science, npj 2D
Materials and Applications, Pure and Applied Chemistry,
ChemNanoMat</i>
• Reviewer for NSF, AFOSR, DoE, NIST | 2015 – present

2016 – present |
| Outreach | • Faculty Facilitator on Visit to the <i>Office of Science and
Technology Policy</i> to discuss Diversity Improvement in
STEM fields
• Faculty Mentor, STEM Achievement in Baltimore
Elementary Schools (SABES is an NSF funded collaboration | Aug. 2016

2016 – 2018 |

- between Baltimore City Public Schools and JHU)
- Faculty Spotlight Speaker at Hopkins Fall Open House Sept. 2018
 - Volunteer for judging and grading during the Maryland Science Olympiad held at JHU Apr. 2016

UNIVERSITY SERVICE

Leader	<ul style="list-style-type: none"> • <i>Hub for Imaging and Quantum Technologies</i> A major new research center supported by the Bloomberg Distinguished Professor program. <i>Leads:</i> Prof. Thomas Kempa, Prof. Taekjip Ha, Prof. David Kaplan, Dr. Joan Hoffmann 	2021 – present
Chair	<ul style="list-style-type: none"> • Chemistry Department Graduate Admissions Committee 	2017 – 2019
Member	<ul style="list-style-type: none"> • Chemistry Department Graduate Admissions Committee • Chemistry Department BDP Search Committee • Materials Characterization & Processing Facility Committee • Homewood Faculty Facilities Council (1 of 19 members) • Departmental GBO & Thesis Committees (30 GBOs served) 	2015 – present 2020 – present 2017 – present 2018 – present 2015 – present
Interviewer	<ul style="list-style-type: none"> • Interviewer for post-graduate Fellowships (<i>e.g.</i> Marshall, Rhodes, Gates) 	2017 – present

TEACHING

CHEMISTRY 306, Physical Chemistry Instrumentation Lab II	28 students	Fall 2021
<i>Junior Faculty Leave</i> (pre-tenure teaching relief)		Spring 2021
CHEMISTRY 403, Optoelectronic Materials and Devices	10 students	Fall 2020
CHEMISTRY 306, Physical Chemistry Instrumentation Lab II	13 students	Spring 2020
CHEMISTRY 403, Optoelectronic Materials and Devices	12 students	Fall 2019
CHEMISTRY 306, Physical Chemistry Instrumentation Lab II	26 students	Spring 2019
CHEMISTRY 403, Optoelectronic Materials and Devices	18 students	Fall 2018
CHEMISTRY 306, Physical Chemistry Instrumentation Lab II	24 students	Spring 2018
CHEMISTRY 403, Optoelectronic Materials and Devices	22 students	Fall 2017
<i>Course Development</i> (developed new labs for CHEMISTRY 306)		Spring 2017
CHEMISTRY 403, Optoelectronic Materials and Devices	19 students	Fall 2016
<i>Teaching Relief</i>		Spring 2016
CHEMISTRY 403, Optoelectronic Materials and Devices	12 students	Fall 2015

MEMBERSHIPS & AFFILIATIONS

- | | |
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| Member | <ul style="list-style-type: none"> • American Chemical Society (Division of Inorganic Chemistry, Division of Colloid & Surface Chemistry, Division of Physical Chemistry) • Materials Research Society • Johns Hopkins Environment, Energy, Sustainability, and Health Institute • Johns Hopkins Ralph S. O'Connor Sustainable Energy Institute (ROSEI) |
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STUDENTS, POSTDOCS, & OTHER ADVISEES

Current Graduate Students and Postdocs (8):

Benjamin Stephens <i>Research:</i> multicomponent nanoparticles, electrocatalysis	Kempa Lab, 6 th year Ph.D. student	2016 – present
Marta Sliwa <i>Research:</i> multicomponent nanoparticles, plasmonics	Kempa Lab, 5 th year Ph.D. student	2017 – present
Dara Weiss <i>Research:</i> 2D molecular frameworks, stimuli-responsive devices NSF GRFP Fellow	Kempa Lab, 4 th year Ph.D. student	2018 – present
Reynolds Dziobek-Garrett <i>Research:</i> 2D atomic crystals, nano-optics, single-photon emission	Kempa Lab, 3 rd year Ph.D. student	2019 – present
Zhe Zhang <i>Research:</i> nanoparticle assembly and electrocatalysis	Kempa Lab, 3 rd year Ph.D. student	2019 – present
Zhenya Luo <i>Research:</i> molecular frameworks, gas storage and catalysis	Kempa Lab, 3 rd year Ph.D. student	2019 – present
Ona Ambrozaite <i>Research:</i> 2D atomic crystals, nanoribbons, heterostructures	Kempa Lab, 2 nd year Ph. D. student	2020 – present
Yifei Zhu <i>Research:</i> 2D molecular frameworks, gas-phase synthesis	Kempa Lab, 2 nd year Ph. D. student	2021 – present

Current Undergraduate Students (1):

Ms. Shreya Sriramineni	Kempa Lab, Sophomore student	2021 – present
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Former Graduate Students (4):

Dr. Tomojit Chowdhury	University of Chicago <i>Kadanoff-Rice Postdoc Fellow with Prof. Jiwoong Park</i>	in Kempa Lab 2015 – 2021
Dr. Erick Sadler	Laboratory for Physical Sciences <i>NRC Postdoc Fellow</i>	in Kempa Lab 2016 – 2021
Dr. Francis Jamie Claire		in Kempa Lab 2016 – 2021
Mr. Eric Thompson	Thermo Fisher Science <i>R&D Scientist</i>	in Kempa Lab 2016 – 2020

Former Postdocs (3):

Dr. Marina Solomos	Merck & Co Inc. – New Jersey <i>Research Scientist</i>	in Kempa Lab 2018 – 2020
Dr. Jungkil Kim	Jeju National University <i>Assistant Professor</i>	in Kempa Lab 2018 – 2019
Dr. Minyuan Miller Li	Pacific Northwest National Lab <i>Postdoc Research Associate</i>	in Kempa Lab 2015 – 2017

Former Undergraduate Students (9):

Ms. Yuzuka Karube	Columbia University <i>PhD Student</i>	in Kempa Lab 2018 – 2021
Mr. Louie Hoffenberg	Princeton University	in Kempa Lab 2018 – 2021

	<i>PhD Student</i>	
Mr. Andrew Patera	SUNY Downstate <i>MD/PhD Student</i>	in Kempa Lab 2017 – 2019
Mr. Adam Strickland	Northwestern University <i>PhD Student</i>	in Kempa Lab 2017 – 2019
Ms. Stephanie Tenney	UCLA <i>PhD Student</i>	in Kempa Lab 2017 – 2019
Mr. Alex Kossak	MIT <i>PhD Student</i>	in Kempa Lab 2015 – 2018
Mr. Guillermo Contreras	University of Pennsylvania <i>PhD Student</i>	in Kempa Lab 2015 – 2017
Ms. Irina Chirca	Cambridge University <i>PhD Student</i>	in Kempa Lab 2016 – 2017
Ms. Imogen Weatherhead	Merck Group – Geneva <i>Project Associate Director</i>	in Kempa Lab 2015 – 2016

Kempa Student PhD Theses Advised (3):

Dr. Tomojit Chowdhury		Defense:
<u>PhD Thesis:</u> <i>Rational design of low-dimensional materials with tunable optical properties</i>		April 13, 2021
Dr. Erick Sadler		Defense:
<u>PhD Thesis:</u> <i>Modulation and manipulation of transition metal dichalcogenides</i>		April 30, 2021
Dr. Francis Jamie Claire		Defense:
<u>PhD Thesis:</u> <i>Structurally and electronically responsive metal-organic frameworks assembled from a modular building unit</i>		March 17, 2021