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RESEARCH INTERESTS

Developing novel solid-state hetero- and nano-structures for integrated (opto)electronic devices and sensors

CITIZENSHIP

United States of America

EDUCATION

Stanford University (9/00 – 4/06)
Doctor of Philosophy in Electrical Engineering, 4/6/06
Thesis: *High-Performance 1.55-μm GaAs-Based Dilute-Nitride Lasers*
Master of Science in Electrical Engineering, 7/03

University of Illinois at Urbana-Champaign (8/95 – 8/00)
Bachelor of Science in Electrical Engineering, 8/99
Coursework Pursuant to Master of Science in Electrical Engineering

EXPERIENCE

The University of Texas, Austin, TX
Cockrell Family Endowed Chair in Engineering #21 (9/23 – Present)
Cullen Trust for Higher Education Endowed Professorship in Engineering #6 (9/19 – 8/23)
Dads' Association Centennial Teaching Fellowship #1 (1/22 – 5/22)
Temple Foundation Faculty Fellowship No. 5 (9/12 – 8/19)
Professor – Department of Electrical and Computer Engineering (9/18 – Present)
Associate Professor – Department of Electrical and Computer Engineering (9/12 – 8/18)
Assistant Professor – Department of Electrical and Computer Engineering (1/07 – 9/12)

- Device applications and synthesis of solid-state hetero- and nano-structures
  - Low noise III-V avalanche detectors
    - First realization of staircase avalanche photodiode
    - First demonstration of low multiplication noise from AlInAsSb materials
    - First low-noise III-V avalanche photodiode operating at 1.55 and 2 μm
    - Longest wavelength single photon counting with III-V materials
    - First digital alloy avalanche photodiode grown on silicon
    - Highest gain low noise InAs avalanche photodiodes
  - Nonlinear optical materials
    - First enhancement in interband $\chi^{(2)}$ with multi-quantum well structures
    - First theoretical prediction of enhancement in interband $\chi^{(2)}$ with multi-quantum wells
  - Epitaxial regrowth
    - First demonstration of lateral epitaxial overgrowth with planarization with MBE
    - First planar encapsulation of patterned metals with MBE
    - Dark current reduction in epitaxially-regrown detectors
    - Demonstration of novel resonances coupling regrowth with plasmonic n-InAs
  - Band-anticrossed semiconductors (e.g. dilute-nitride mid-IR lasers and detectors)
    - First bulk long-wave IR with photoresponse beyond InSb (InSbBi nBn & MSM)
    - Longest wavelength GaSb-based diode laser with GaSb barriers
    - Demonstrations of high-quality, droplet-free GaInAsSbBi alloys
  - Epitaxial plasmonic materials and designer metals
    - Record III-V active Si doping of InAs, shifting plasmon resonance into mid-IR
    - First demonstration of compositional tuning of plasmonic properties (e.g. LaLuGdAs)
    - First demonstration of plasmonic response from rare earth monopnictides (e.g. ErAs)
  - High-efficiency tunnel junctions employing semimetallic nanostructures
    - Enhanced tunneling currents by >225x over previous state-of-the-art
    - Successfully transferred technology to Solar Junction Corp.

        - First application to semiconductor lasers
    - Semiconductor/metal nanocomposites (e.g. THz generation/sensing and thermoelectrics)
- Built state-of-the-art molecular beam epitaxial (MBE) growth facility largely through extramural funding and equipment donations
- Teaching:
    - Introduction to Electrical and Computer Engineering (undergrad) – F'2011, 2012, 2014-2020
        - Revised lecture and (twice) lab components (w/Ed Yu)
        - Introduced Honors section of course beginning in Fall 2018
        - Received Gordon T. Lepley IV Endowed Memorial Teaching Award for this work
        - Received Dads' Association Centennial Teaching Fellowship to enhance Intro to EE
    - Semiconductor Optoelectronic Devices (graduate) – Sp'2007-2013, 2015, 2017, 2019, 2021, 2022, 2023
    - Lasers and Optical Engineering (undergrad/grad) – F'2007, 2008, 2009, 2010, Sp'2016, 2018, 2020, F'2021, 2022.
- Co-founder and Co-director (w/Deji Akinwande), ECE NEXT undergrad research program (2020 – 2023)
    - Industry-funded undergraduate summer research and mentoring program spanning ECE topics
        - Participants paired with research project, as well as faculty and graduate mentors
        - Numerous workshops and activities
    - Support from companies including Google, Meta, Cirrus Logic, Si Labs, Emerson, Qualcomm, National Instruments, Sandia National Laboratories (various years)

University of California, Santa Barbara, CA (2/06 – 12/06)
Postdoctoral Scholar – Departments of Materials and Electrical and Computer Engineering
- Supervisors – **Professors Arthur Gossard and Mark Rodwell**
- MBE growth and application of semiconductor/metal nanocomposites
    - Semimetallic nanoparticles (e.g. ErAs) embedded in semiconductors
    - Applications to HBTs, tunnel junctions, and THz generation/detection
    - Electrically injected erbium-oxygen light emitters on silicon
- MBE growth of high-mobility channel materials for SRC Center on Si-based III-V MOSFETs
- Teaching:
    - Characterization of Electronic Materials – Co-developed and taught new graduate course

Stanford University, Stanford, CA (9/00 – 1/06)
Graduate Research Assistant – Solid State and Photonics Laboratory
Advisor – **Professor James Harris**
- MBE growth and fabrication of GaAs-based lasers from 1.3 to 1.55 μm
    - Demonstrated first continuous-wave (cw) 1.45–1.55 μm lasers grown on GaAs
        - Holds all GaAs-based laser performance records emitting >1.4 μm
    - Improved MBE growth of GaInNAs and GaInNAsSb films on GaAs
        - Co-enhanced luminescence efficiency ~10 fold and reduced linewidth >25%
        - Contributed to understanding of basic physical properties and growth kinetics
        - Developed new metric for evaluating laser active regions
    - Investigated physics governing temperature stability of lasers
    - Growth of GaInNAsSb on InP for sensing applications >2.0 μm
    - Growth of 1.55 μm absorption samples with strong and well-defined excitonic features
- External collaborations on novel GaAs-based device structures
    - First GaAs-based distributed feedback laser at 1.5 μm (w/Forchel at Würzburg)
    - GaInNAs-based avalanche photodiodes (w/Campbell at UT-Austin)
    - Modelocked lasers at 1.55 μm (w/Lester at U-New Mexico)
    - Hybrid MBE/MOCVD buried heterostructure lasers at 1.55 μm (w/Sumitomo)
- Preparation of AlGaAs/GaAs quantum wells for spin injection experiments (w/Parkin at IBM)
- Investigated luminescence mechanisms of boron implanted silicon (w/Patel at SLAC)

University of Illinois, Urbana, IL (6/00 – 8/00)
Teaching Assistant – ECE 344 Silicon IC Fabrication Laboratory
- Fabrication of MOSFETs and BJTs in silicon
- Taught one lab section, graded papers, wrote quizzes, maintained lab
- Students in section received seven of the nine A's awarded over three sections (~30 students total)

University of Illinois, Urbana, IL (5/99 – 8/00)
Graduate Research Assistant – Semiconductor Research Group
Advisors – **Professors Gregory Stillman and Kuang-Chien Hsieh**
- Fabrication and testing of dc and microwave InGaP/GaAs and InGaAs/InP HBTs
- Characterization of PIN photodetectors integrated into standard HBT process for smart pixel arrays

HONORS AND AWARDS

- Fellow, Optica (formerly OSA, 2023)
- Fellow, IEEE (2022)
- Dads' Association Centennial Teaching Fellowship at UT-Austin (2021-2022)
- Gordon T. Lepley IV Endowed Memorial Teaching Award at UT-Austin (2019-2020)
- A "top reviewer" of Applied Physics Letters for 2017
- High Gain Award from the ECE Department at UT-Austin (2010)
- Kavli Fellow (2010)
- ONR Young Investigator Program (YIP) (2010)
- NSF Faculty Early Career Development (CAREER) Program (2010)
- AFOSR Young Investigator Program (YIP) (2009)
- Presidential Early Career Award for Scientists and Engineers (PECASE) (2009)
- Young Scientist Award from the International Conf. on Compound Semiconductors (ISCS) (2009)
- ARO Young Investigator Program (YIP) (2008) – *superseded by PECASE*
- Young Investigator Award from North American Conf. on Molecular Beam Epitaxy (NAMBE) (2008)
- DARPA Young Faculty Award (YFA) (2008)
- The Rank Prize Funds Dilute-Nitride Mini-Symposium – Best Contributed Paper Award (2006)
- North American Conference on Molecular Beam Epitaxy (NAMBE) Student Paper Award (2005)
- Ross N. Tucker Award – Contributions to electronic materials (Stanford/UC-Berkeley, 2005)
- Electronic Materials Conference (EMC) Student Paper Award (2004)
- Gerald L. Pearson Graduate Fellowship – Fellowship in solid-state electronics (Stanford, 2000)
- John Bardeen Scholarship – Achievement and research potential in physical electronics (UIUC, 1999)
- Tau Beta Pi Member (UIUC, 1998)
- Eta Kappa Nu Member (UIUC, 1997)

MENTEE HONORS AND AWARDS

- (Supervisor) Electronic Materials Conference (EMC) Student Paper Award (2024)
- (Supervisor) North American MBE (NAMBE) Conference Best Student Presentation Award (2023)
- (Supervisor) Electronic Materials Conference (EMC) Student Paper Award (2022)
- (Supervisor) North American MBE (NAMBE) Conference Best Student Presentation Award (2022)
- (Supervisor) Ben Streetman Research Prize (2021)
- (Supervisor) Electronic Materials Conference (EMC) Student Paper Award (2018)
- (Supervisor) Electronic Materials Conference (EMC) Student Paper Award (2016)
- (Supervisor) Electronic Materials Conference (EMC) Student Paper Award (2014)
- (Supervisor) Device Research Conference (DRC) Student Paper Award (2013)
- (Supervisor) Ben Streetman Research Prize (2013)
- (Supervisor) Electronic Materials Conference (EMC) Student Paper Award (2012)
- (Supervisor) Ben Streetman Research Prize (2012)

PROFESSIONAL SOCIETIES AND ACTIVITIES

- General Chair:
  - 2016 IEEE Device Research Conference (DRC) – General Chair
  - 2016 IEEE/OSA Conference on Lasers and Electro Optics (CLEO) – S&I General Co-chair
- Program Chair:
  - 2015 IEEE Device Research Conference (DRC) – Program Chair
  - 2014 IEEE/OSA Conference on Lasers and Electro Optics (CLEO) – S&I Program Co-chair
  - 2010 North American Conference on MBE (NAMBE) – Program Chair
- Vice-Chair and related:
  - 2014 IEEE Device Research Conference (DRC) – Technical Vice-Chair
- Subcommittee Chair:
  - 2013 IEEE/OSA Conference on Lasers and Electro Optics (CLEO) – Semiconductor Lasers
  - 2013 IEEE Photonics Annual Meeting (IPC2013) – Photonic Materials and Metamaterials (PMM)
  - 2012 IEEE/OSA Conference on Lasers and Electro Optics (CLEO) – Semiconductor Lasers
  - 2012 IEEE Photonics Annual Meeting (IPC2012) – Photonic Materials Science and Technology (PMST) (Vice Chair)
  - 2011 International Conference on Indium Phosphide and Related Materials (IPRM) – Bulk Materials and Epitaxy
- Program Committees:
  - International Conference on MBE (ICMBE) (2026)
  - Midwest Infrared Semiconductor Technology (MIST) Workshop (2025)
  - IEEE Photonics Society Annual Meeting (IEEE IPC) – Detection, Sensing, and Energy (2023)
  - Compound Semiconductor Week – Narrow bandgap materials (2022)
  - IEEE International Electron Devices Meeting (IEDM) (2015, 2016)
  - North American Conference on MBE (NAMBE) (2012, 2016, 2023)
  - Device Research Conference (DRC) (2011, 2012, 2013)
  - Electronic Materials Conference (EMC) (2009 – Present)
    - Elected Organizer (2026 – 2029)
  - IEEE/OSA Conference on Lasers and Electro Optics (CLEO) – Semiconductor Lasers (2009, 2010, 2011, 2012, 2013)
  - IEEE Photonics Society Annual Meeting (IEEE IPC) – Photonic Materials and Metamaterials (PMM) (2008, 2009, 2010, 2011, 2012, 2014, 2015, 2016, 2017)
    - Formerly Lasers and Electro-Optics Society (LEOS)
  - Photonics Asia – Optoelectronic Devices and Integration (2010)
- Special Symposia:
  - Co-organizer of 50th Anniversary of the Semiconductor Laser Symposium, CLEO 2012
  - Co-organizer of Joint Symposium on Hybrid Quantum Nanoplasmonic Systems, CLEO 2011
- Other Conference Organization Duties:
  - DRC Board of Directors (2016-2025)
  - CLEO Steering Committee (IEEE Representative) (2016-2019)
  - EMC Recording Secretary (2015, 2016)
  - NAMBE Fundraising Chair (2010, 2011, 2012, 2013) – coordinated AFOSR/ONR support
  - DRC Fundraising (2014, 2015) – coordinated (w/MRS) NSF/MRS/IBM/Teledyne support
  - DRC Rump Session Co-Organizer – Next 50 Years: What's After the Transistor? (2013)
  - DRC Rump Session Co-Organizer – III-V Compound semiconductors on Si: "A happy marriage" or "Keep your filthy materials out of my fab"? (2012)
- Recent Workshops/Summits:
  - Northrop Grumman New Semiconductors and Devices Workshop (2014, 2017)
  - 4th International Workshop on Bismuth Containing Semiconductors (July 2013)
  - Stanford University Photonics Research (SUPR) Career panel participant (April 2012)
  - Army Research Office Electronics Strategy Meeting (Nov. 2011)
  - National Academy of Sciences (NAS) "22nd Annual Kavli Frontiers of Science" (Nov. 2010)
  - National Academy of Engineering (NAE) "2010 US Frontiers in Engineering Symposium" (Sept. 2010)
- Professional Society Committees:
  - Ford Foundation Fellowship Evaluator (2022 – 2023)

  - Official Nominator for the "Japan Prize" (2017 – Present)
  - IEEE Representative to CLEO Steering Committee (2016 – 2019)
  - IEEE Photonics Society representative to IEEE Nanotechnology Council (2014 – 2018)
  - IEEE Photonics Society Technical Affairs Council (2013 – 2016)
- Journal Reviewer: Applied Physics Letters, J. of Applied Physics, Nano Letters, Optics Letters, Optics Express, IEEE Photonics Technology Letters, IEEE Journal of Quantum Electronics, Electronics Letters, J. of Lightwave Technology, J. of Crystal Growth, Semiconductor Science and Technology, Physical Review Letters, Scientific Reports, Nature Photonics, AAAS Science Advances
  - Named one of Applied Physics Letters' top reviewers for 2017
- Panels: ~1-2 NSF panels/year since 2020, NSF EPMD Panel (2019), NSF EPMD Panel (2017), NSF DMR Panel (2017), NSF DMR Panel (2016), NSF SBIR (2016), NSF CAREER Panel (2015), NSF SBIR Panel (2015), NSF EPMD Panel (2014), NSF DMR Panel (2013), NSF EPMD Panel (2012), NSF DMR Review Panel (2012), NSF CAREER Review Panel (2011), NSF EPMD Panel (2010), NSF EPMD Panel (2009), NSF EPMD Panel (2008), NSF Graduate Research Fellowship Review (2008)
- Proposal Reviewer: Air Force Office of Scientific Research (AFOSR), Army Research Office (ARO), Department of Energy (DOE), National Science Foundation (NSF)
- Member: Fellow of IEEE (F'22, SM'11, M'06, S'95), Senior (Life) Member Optica, MRS, Eta Kappa Nu, Tau Beta Pi
- Outreach: Eta Kappa Nu: Fireside host (2007, 2008, 2010, 2011), Smoker (2008, 2009, 2010), Tech Area Night (2007, 2010, 2011, 2012, 2014x2), Women in Engineering Lunch with an Engineer (2008, 2009), Women in Engineering Dinner with an Engineer (2008), IGERT Summer Nanoscience Academy (2011), Austin Children's Museum: Tours of the Microelectronics Research Center (2010, 2011, 2012, 2013), Science Thursday's at Bullock History Museum (2015), NSF/SPIE/OSA Int'l Year of Light Family Science Fun Event (2015), NSF/ECCS Broader Impacts Workshop (2016).

ADMINISTRATIVE SERVICE

- ECE Awards Committee (Fall 2023 – Present)
- University Laser Safety Committee (2018 – Present)
- Founder and Co-Director of ECE NEXT undergraduate research program (Fall 2020 – 2023)
- Co-Chair ECE Committee for Diversity, Equity, and Inclusion (Fall 2020 – Fall 2022)
- ECE Student Mentoring Committee (2020 – 2021)
- Ad Hoc CSE Committee for Lab/Performance Space (2020)
- University Graduate Assembly (2020 – 2021)
- University Admissions & Enrollment Committee (Spring 2020 – 2021)
- Tau Beta Pi Chapter Faculty Advisor (Fall 2019 – Present)
- University Laboratory Safety Committee (2018 – 2022)
- ECE Senior (FII) Hiring Committee (2017 – 2020)
  - Co-Chair 2018 – 2019 & 2019 – 2020
- ECE Curriculum Reform Committee (2015 *ad hoc;* 2016 formal)
- ECE Faculty Recruiting Committee (2014 – 2016)
- (Chair) ECE Future Directions Subcommittee (2014)
- ECE Nanofabrication Facility Planning Committee (2013 – 2016)
- ECE Joint Bsc/Msc Degree and Honors Track Committee (2013 – 2014)
- Faculty Council (2011 – 2013)
- Faculty Expectations Committee (2011 – 2013)
- Parking and Traffic Appeals Panel (2011 – 2013)
- ECE Committee for EERC Building (2010 – 2013)
- ECE Major Sequence Appeals Committee (2010 – Present)
- Solid-State Electronics Faculty Search Committee (2007, 2008, 2009)
  - Successfully hired two chaired and one junior faculty
- Undergraduate Curriculum Reform Committee (2008)
- Unified Qualifying Procedure Committee (2008)

CONSULTING

- Advantech Corporation, Beijing, China (10/18)
  - Technical evaluation of photonics startup
- Solar Junction Corporation, San Jose, CA (7/07 – 5/13; 8/18 – 9/19)

  - Informal Technical Advisor (7/07 – 5/13)
  - Consulting expert with respect to ongoing litigation (8/18 – 9/19)
- VecturaLux, Austin, TX (6/11 – 10/11)
  - Co-founder
  - Member of Scientific Advisory Board (6/11 – 10/11)
- ExxonMobil, Houston, TX (9/09 – Present)
  - Development of pressure gradient sensor
- TT electronics / OPTEK Technology, Carrollton, TX (10/07 – 8/08)
  - LED consulting
- EpiWorks, Champaign, IL (8/00 – 9/00)
  - Tech transfer

PUBLICATION LIST (>600 TOTAL, >9000 CITATIONS, HIRSCH INDEX = 50)[1]

PEER-REVIEWED PUBLICATIONS

1. Q. Lin, H. Karimi, K. Fang, K. Circir, J. Bai, E. Y. Wang, **S. R. Bank**, and J. C. Campbell, "Photon trapping with amorphous-Ge gratings for high-efficiency eSWIR AlInAsSb avalanche photodiodes," *APL Photonics*, vol. 11, Aug. 2026.
2. L. Gelczuk, Q. Meng, R. H. El-Jaroudi, J. Kopaczek, A. A. Dadey, R. C. White, A. McArthur, J. C. Campbell, M. A. Wistey, **S. R. Bank**, and R. Kudrawiec, "Experimental and theoretical studies on deep-level defects in n- and p-type BGaAs alloys," *APL Materials*, vol. 14, Jul. 2026.
3. A. Ware, J. LaMountain, C. White, **S. R. Bank**, E. Narimanov, D. Wasserman, and V. A. Podolskly, "Intrinsically nonlocal metamaterials," *Nature Communications*, vol. 17, no. 7952, Jun. 2026.
4. R. C. White, M. K. Bergthold, F. A. Estévez, A. F. Ricks, D. Wasserman, and **S. R. Bank**, "Extended wavelength dilute-bismide infrared nBn photodetectors on InSb," *APL*, vol. 128, Feb. 2026.
5. K. Circir, E. Y. Wang, A. McArthur, D. Herrera, **S. R. Bank**, and J. C. Campbell, "Extended short-wavelength infrared AlInAsSb nBn photodetectors," *Journal of Quantum Electronics*, Dec. 2025.
6. H. Karimi, Q. Lin, E. Simmons, B. D. Aguilar, J. A. McArthur, A. Talanov, K. Circir, A. A. Dadey, E. Y. Wang, D. Chen, V. Fisher, T. Pearson, K. Dorsey, **S. R. Bank**, and J. C. Campbell, "Thin absorber AlInAsSb SACM APDs with photon-trapping gratings for eSWIR applications," *Optica*, vol. 12, no. 12, Dec. 2025.
7. A. M. Garcia, W. J. Doyle, Y. Wang, M. L. Lee, D. Wasserman, and **S. R. Bank**, "High-quality GaP planar coalescence over embedded dielectric microstructures," *Crystal Growth & Design*, Oct. 2025.
8. D. J. Herrera, K. Circir, J. A. McArthur, E. Y. Wang, T. Fatema, A. Beling, **S. R. Bank**, and J. C. Campbell, "Edge-coupled digital alloy AlInAsSb SPAD with high avalanche breakdown probability," *Applied Physics Letters*, vol. 127, no. 15, p. 153 302, Oct. 2025.
9. Q. Meng, R. H. El-Jaroudi, A. A. Dadey, C. White, J. C. Campbell, A. H. Jones, M. A. Wistey, and **S. R. Bank**, "Extended wavelength photodiodes in the B-III-V material system," *Applied Physics Letters*, vol. 127, no. 15, p. 152 103, Oct. 2025.
10. K. J. Underwood, A. F. Briggs, S. D. Sifferman, V. B. Verma, N. S. Sirica, R. P. Prasankumar, S. W. Nam, K. L. Silverman, **S. R. Bank**, and J. T. Gopinath, "Erratum: "Strain dependence of Auger recombination in 3 μm GaInAsSb/GaSb type-I active regions" [Appl. Phys. Lett. 116, 262103 (2020)]," *Applied Physics Letters*, vol. 127, no. 9, p. 099 901, Sep. 2025.
11. E. Y. Wang, H. Karimi, F. Guzman, M. Waqar, A. W. K. Liu, J. Fastenau, X. Pan, J. C. Campbell, and **S. R. Bank**, "Ternary-containing $Al_{0.7}$ InAsSb digital alloys on InP and InP-on-Si," *Optical Materials Express*, vol. 15, no. 10, pp. 2568–2575, Sep. 2025.
12. C. White, F. A. Estévez, M. K. Bergthold, A. F. Ricks, H. Hijazi, L. C. Feldman, D. Wasserman, A. J. Muhowski, and **S. R. Bank**, "Decoupling the Effects of Surface Morphology and Bulk Substitutionality on Dilute-Bismide Optical Quality," *Crystal Growth & Design*, vol. 25, no. 20, Sep. 2025.
13. Q. Lin, H. Karimi, D. J. Herrera, E. Y. Wang, **S. R. Bank**, and J. C. Campbell, "A passivation study for AlInAsSb avalanche photodiodes," *Applied Physics Letters*, vol. 127, no. 2, p. 023 302, Jul. 2025.
14. J. A. McArthur, A. A. Dadey, K. Circir, H. Karimi, D. Wei, E. Y. Wang, J. C. Campbell, and **S. R. Bank**, "Thin absorber AlInAsSb 2-um SACM APDs with very low and tunable dark currents at room-temperature," *Applied Physics Letters*, vol. 126, no. 26, p. 261 102, Jul. 2025.
15. H. Wu, Y. Ju, L. Brown, M. Waqar, X. Yan, R. Ramesh, A. F. Ricks, **S. R. Bank**, and X. Pan, "Interfacial structure in GaAs/$Al_{0.55}$ $Ga_{0.45}$ As asymmetric coupled quantum wells revealed by advanced scanning transmission electron microscopy," *Microscopy and Microanalysis*, vol. 31, no. 7, pp. 2270–2272, Jul. 2025.
16. H. Wu, Y. Ju, L. Brown, M. Waqar, X. Yan, R. Ramesh, A. F. Ricks, **S. R. Bank**, and X. Pan, "Interfacial structure in GaAs/AlGaAs asymmetric coupled quantum wells revealed by advanced scanning transmission electron microscopy," *Microscopy and Microanalysis*, vol. 31, no. 7, pp. 2270–2272, Jul. 2025.

[1]Data from full publication list (https://lase.ece.utexas.edu/publications) and Google Scholar profile (https://scholar.google.com/citations?user=Ey4P2ywAAAAJ) from 7/15/2026.

17. A. F. Ricks, R. C. White, Q. Meng, H. Hijazi, L. C. Feldman, M. A. Wistey, and **S. R. Bank**, "Interplay of Al and Bi Incorporation in AlInSbBi," *Crystal Growth & Design*, vol. 25, no. 13, pp. 4843–4849, Jun. 2025.
18. Z. Ye, T. D. Frazer, H. Cui, X. Jia, F. He, T. Ma, S. D. March, **S. R. Bank**, K. J. Harmon, Z. Zhang, J. Ravnik, M. Sander, Y. Deng, R. Mankowsky, H. Lemke, H. Wen, S. O. Hruszkewycz, S. Gerber, Y. Wang, Y. Wang, and Y. Cao, "Coherent phonon flatband generated in GaAs/AlAs superlattices via layer-selective optical pumping," *Nature Communications*, vol. 16, no. 1, p. 8436, Mar. 2025.
19. H. Karimi, D. J. Herrera, A. A. Dadey, D. Wei, J. A. McArthur, **S. R. Bank**, and J. C. Campbell, "Analysis of the effect of different scattering mechanisms on the excess noise behavior of Sb-based avalanche photodiodes," *Optics Express*, vol. 33, no. 4, pp. 7337–7344, Feb. 2025.
20. T. Kim, A. M. Skipper, **S. R. Bank**, and E. T. Yu, "Nanoscale electrical conductance and leakage currents in etched and selective-area regrown GaAs pn junctions," *Journal of Applied Physics*, vol. 137, no. 7, p. 075 702, Feb. 2025.
21. K. N. Dickson, L. Simmons, A. F. Ricks, A. M. Skipper, A. F. Briggs, A. J. Muhowski, **S. R. Bank**, and J. T. Gopinath, "Impact of mechanically applied strain on Auger recombination in InGaAs multiple quantum wells," *Applied Physics Letters*, vol. 126, no. 3, p. 032 105, Jan. 2025.
22. A. M. Garcia, A. M. Skipper, D. J. Ironside, and **S. R. Bank**, "Experimentally calibrated modeling of periodic supply epitaxy for selective area growth by molecular beam epitaxy," *Crystal Growth & Design*, vol. 25, no. 4, pp. 963–969, Jan. 2025.
23. M. S. Reza, T. Dey, A. W. Arbogast, Q. Meng, **S. R. Bank**, and M. A. Wistey, "Confinement and threshold modeling for high temperature GeSn and GeC/GeCSn lasers," *IEEE J. Sel. Topics Quantum Electron.*, vol. 31, no. 1, p. 1 503 011, Jan. 2025.
24. J. K. Saha, S. A. A. Taqy, P. K. Sarkar, I. Rahaman, A. W. Arbogast, T. Dey, A. Dolocan, M. R. R. Munna, K. Alam, D. Wasserman, **S. R. Bank**, and M. A. Wistey, "Observation of low-resistance Al and Ni p-type ohmic contacts to dilute GeC and GeCSn alloys," *J. Vac. Sci. Technol. B*, vol. 42, no. 6, p. 062 211, Nov. 2024.
25. R. C. White, M. Bergthold, A. Muhowski, L. Nordin, I. Okoro, H. Hijazi, L. Feldman, D. Wasserman, and **S. R. Bank**, "Molecular beam epitaxy of InAsSbBi lattice-matched to InSb toward long-wave infrared sensing," *Crystal Growth & Design*, vol. 24, no. 21, pp. 8727–8735, Oct. 2024.
26. D. Wei, B. Gao, A. A. Dadey, J. A. McArthur, J. Bai, **S. R. Bank**, and J. C. Campbell, "Broadband Quantum Efficiency Enhancement of AlInAsSb p–i–n Photodiodes with All-Dielectric Amorphous Germanium Metasurfaces," *Adv. Phot. Res.*, Jun. 2024.
27. K. Yao, J. Fang, T. Jiang, A. F. Briggs, A. M. Skipper, Y. Kim, M. A. Belkin, B. A. Korgel, **S. R. Bank**, and Y. Zheng, "Tuning Multipolar Mie Scattering of Particles on a Dielectric-Covered Mirror," *ACS Nano*, vol. 18, pp. 16 545–16 555, Jun. 2024.
28. D. Herrera, A. Dadey, S. March, **S. R. Bank**, and J. Campbell, "AlInAsSb Geiger-mode SWIR and eSWIR SPADs with high avalanche probability," *Optics Express*, vol. 32, no. 2, pp. 2106–2113, Mar. 2024.
29. J. A. McArthur, A. A. Dadey, K. Circir, S. D. March, X. Xue, D. Chen, A. H. Jones, A. Dolocan, J. C. Campbell, and **S. R. Bank**, "Source impurity contributions and polarity inverting in the unintentional doping of AlInAsSb digital alloys grown via molecular beam epitaxy," *Crystal Growth & Design*, vol. 25, no. 2, pp. 392–399, Mar. 2024.
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