

## SRIRAM KRISHNAMOORTHY

Assistant Professor

Electrical and Computer Engineering (Merrill Engineering Building 2132), The University of Utah

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### RESEARCH INTERESTS

Semiconductors materials/devices with focus on epitaxial growth, electronic transport, design/modeling, nanoscale fabrication, and characterization of materials and devices for energy, health and security applications. Specifically, ultra-wide band gap oxide ( $\text{Ga}_2\text{O}_3$ ) and III- nitride semiconductors-based devices for a wide range of applications such as power electronics, deep ultra-violet optoelectronics, vacuum electronics, and high temperature electronics.

### APPOINTMENTS

July 2017– Current	Assistant Professor Electrical and Computer Engineering, The University of Utah, Salt Lake City, UT
Sept 2014– June 2017	Post-doctoral Researcher (Advisor: Prof. Siddharth Rajan) Electrical and Computer Engineering, The Ohio State University, Columbus, OH
Oct 2009 – Aug 2014	Graduate Research Assistant/ Presidential Fellowship Electrical and Computer Engineering, The Ohio State University, Columbus, OH
Jun 2009 – Aug 2009	Nanosystems Initiative Munich (NIM) Student Researcher Center for NanoScience, Ludwig-Maximilian Universitat, Munich
May 2008 – July 2008	Summer Research Fellow Materials Research Center, Indian Institute of Science, Bangalore

### PROFESSIONAL PREPARATION

2009-2014	The Ohio State University, Columbus, OH Ph.D. Electrical Engineering – August 2014 Advisor: Prof. Siddharth Rajan Thesis: Gallium Nitride-Based Heterostructure Interband Tunnel Junctions Ohio State University Presidential Fellowship Award
2004-2009	Birla Institute of Technology and Science (BITS)-Pilani, India B.E. (Hons.) Electrical and Electronics Engineering -2009 M.Sc. (Hons.) Physics- 2009

### AWARDS & HONORS

The 2020 Junior Faculty Rising Star Award (ECE Department, U Utah)	2020
BITSAA (Birla Institute of Technology & Science Alumni Association) 30 under 30 Award	2019
Japanese Society of Applied Physics (JSAP) Best Paper Award <a href="https://www.jsap.or.jp/english/awards/jsap-outstanding-paper-award/recipients40">https://www.jsap.or.jp/english/awards/jsap-outstanding-paper-award/recipients40</a>	2018
Two publications in “ten most cited articles in 2018 published in 2016 and 2017”- Applied Physics Letters <a href="https://aip-info.org/1XPS-5YA4E-30C9NY3CD7/cr.aspx">https://aip-info.org/1XPS-5YA4E-30C9NY3CD7/cr.aspx</a>	2018
Outstanding Paper Award- North American MBE Conference (NAMBE 2017) – 2 <sup>nd</sup> author	2017
Best Paper Award- 11 <sup>th</sup> International Symposium on Semiconductor LEDs (ISSLED 2017)- 2 <sup>nd</sup> author	2017
Ohio State University Presidential Fellowship Award	2013
Best Student Paper Award @ SPIE Conference, San Diego- 2 <sup>nd</sup> author	2010
Nanosystems Initiative Munich (NIM) Student Research Award	2009
Best Outgoing Student of Physics, BITS Physics Society	2008
JNCASR Summer Research Fellowship	2008

## INVITED TALKS/SEMINARS

### After joining Utah

- American Vacuum Society (AVS) Webinar: Gallium Oxide Materials and Devices for Next Generation Ultra-Wide Bandgap Electronics- April 8, 2021 (Upcoming)
- American Vacuum Society 67 (AVS 67) Conference- Metalorganic Vapor-phase Epitaxy of Gallium (Aluminum) Oxide Thin Films and Heterostructures for High Power and High Frequency Electronics (Scheduled/Upcoming- AVS 67 to be held October 24-29, 2021 in Charlotte, North Carolina)
- Symposium K: "Wide Bandgap Electronic Materials" at the 11th International Conference on Materials for Advanced Technologies (ICMAT 2021), scheduled to be held from 4 – 9 July 2021 in Singapore- "MOVPE grown Ga<sub>2</sub>O<sub>3</sub> thin films and heterostructure materials and devices for high frequency/power electronics." (Postponed to 2022)
- Nick Holonyak, Jr Micro and Nanotechnology Laboratory at the University of Illinois at Urbana-Champaign, Seminar (March 2020)
- XX<sup>th</sup> International Workshop on Physics of Semiconductor Devices: IWPSD 2019; December 17-20, 2019, Kolkata, India (December 2019)
- U Minnesota- IPRIME 2019 Annual Meeting- Ultra-wide Gap Materials for High-power Electronics (EMD Electronic Materials and Devices Focus)- May 29, 2019- "Gallium Oxide Power Electronic Materials and Devices"
- Naval Research Lab, Washington DC – March 2019; Air Force Research Lab, Dayton – August 2018
- 6<sup>th</sup> IEEE Workshop on Wide Bandgap Power Devices and Applications (WiPDA 2018), Georgia Tech, Atlanta – Oct 2018 (Tutorial on Gallium Oxide Power Devices and Materials)
- Utah ECE – Fall 2017 seminar; Utah Physics- Fall 2017 seminar

### Before Joining Utah

Penn State, Utah, Oregon State, Notre Dame (Solid State Seminar Series), U South Carolina–2017  
Institute of Materials Research 2017, OSU- May 2017  
DOE Round table on Solid State Lighting, Washington DC- 2015  
Intel, Hillsboro, OR- Summer 2014  
Indian Institute of Science, India 2013  
Indian Institute of Technology Bombay, India 2013  
Solid State Physics Lab, Delhi, India- 2011

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## RESEARCH GROUP MEMBERS@ Utah (Since July 2017)

### Graduate Students (PhD)

- Praneeth Ranga (Start: Aug 2017); 2020-2021 University Graduate Research Fellowship
- Arkka Bhattacharyya (Start: Aug 2018)
- Saurav Roy (Start: July 2019)
- Carl Peterson (Start: Feb 2021)

### Graduate Students (Masters)

- Viveksamin Sattiraju, ChemE (Sept 2017 – July 2018)- First Employment: IMFlash, Lehi, UT

### Undergraduate Researchers

- Xingyue (Sophie) Wang: (Spring 2021- )
  - Joseph E. Lyman, ECE (Feb 2018- Spring 2020): Fall 2018 and Spring 2019 UROP Awardee, Barry Goldwater Fellowship
  - Kevin A. Ramirez, ChemE (Fall 2019- Spring 2020)
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## TEACHING

**ECE 3200 : (Undergraduate) Introduction to Semiconductor Physics (Devices):** Fall 2018, Fall 2019, Fall 2020

**ECE 6960/5960-11 (Graduate/Undergraduate) Compound Semiconductor Technology:** Spring 2018, Spring 2020  
New special topics class developed and taught

**ECE 6960/5960-11 (Graduate/Undergraduate) Advanced CMOS Technology:** Spring 2019, Spring 2021 (Current Semester)  
New special topics class developed and taught

## PUBLICATION STATISTICS

Total Published Refereed Journal Publications (In review/Manuscript in prep) 69 (4)  
Book Chapters 4

**Citation Metrics: Google Scholar** (<https://scholar.google.com/citations?user=msxQ2fYAAAAJ&hl=en>)  
**Citations: 2741, h-index: 30, i10-index: 50 (2/18/2020)**

## BOOK CHAPTERS

[BC1] Zhichao Yang, Digbijoy N Nath, Yuewei Zhang, **Sriram Krishnamoorthy**, Jacob Khurgin, Siddharth Rajan, "III-Nitride Tunneling Hot Electron Transfer Amplifier (THETA)", In: Fay P., Jena D., Maki P. (eds) High-Frequency GaN Electronic Devices. Springer 2020 (In press)- Online ISBN 978-3-030-20208-8

[BC2] Yuewei Zhang, **Sriram Krishnamoorthy**, Siddharth Rajan, "β-(Al<sub>x</sub>Ga<sub>1-x</sub>)<sub>2</sub>O<sub>3</sub>/Ga<sub>2</sub>O<sub>3</sub> modulation-doped field effect transistors", Gallium Oxide: Crystal Growth, Materials Properties, and Devices, Springer 2019; Editor: Masataka Higashiwaki (In press)

[BC3] Anamika Singh Pratiyush, **Sriram Krishnamoorthy**, Rangarajan Muralidharan, Siddharth Rajan, Digbijoy N Nath, "Advances in Ga<sub>2</sub>O<sub>3</sub> solar-blind UV photodetectors", In Gallium Oxide, pp. 369-399. Elsevier, 2019.

[BC4] Siddharth Rajan, **Sriram Krishnamoorthy**, Fatih Akyol, "Gallium Nitride-Based Interband Tunnel Junction Devices ", Gallium Nitride (GaN): Physics, Devices and Technology, Editor: Farid Medjdoub, CRC Press, 299-326 (October 21,2015; ISBN-13: 978- 1 482220032).

## JOURNAL PUBLICATIONS (students advised by Prof. Krishnamoorthy underlined)

### 2021

[69] Growth and characterization of metalorganic vapor-phase epitaxy-grown β-(Al<sub>x</sub>Ga<sub>1-x</sub>)<sub>2</sub>O<sub>3</sub>/β-Ga<sub>2</sub>O<sub>3</sub> heterostructure channels. Applied Physics Express **14** 025501 (2021).

Praneeth Ranga\*, Arkka Bhattacharyya\*, Adrian Chmielewski, Saurav Roy, Rujun Sun, Michael A Scarpulla, Nasim Alem, **Sriram Krishnamoorthy** (\* Equal contribution)

[68] Anil Kumar Rajapitamahuni, Laxman Raju Thoutam, Praneeth Ranga, **Sriram Krishnamoorthy**, Bharat Jalan, "Impurity Band Conduction in Si-doped β-Ga<sub>2</sub>O<sub>3</sub> Films", Applied Physics Letters **118**, 072105 (2021).

<https://doi.org/10.1063/5.0031481>

[67] Rujun Sun, Yu Kee Ooi, Praneeth Ranga, Arkka Bhattacharyya, **Sriram Krishnamoorthy**, Michael A Scarpulla, "Oxygen annealing induced changes in defects within beta-Ga<sub>2</sub>O<sub>3</sub> epitaxial films measured using photoluminescence", Accepted for publication in Journal of Physics D: Applied Physics (2021).

<https://doi.org/10.1088/1361-6463/abdefb>

### 2020

[66] *Compensation in (-201) homoepitaxial beta-Ga<sub>2</sub>O<sub>3</sub> thin layers grown by metalorganic vapor-phase epitaxy*

Brian Andrew Eisner, Praneeth Ranga, Arkka Bhattacharyya, **Sriram Krishnamoorthy**, Michael A. Scarpulla, Journal of Applied Physics **128** (19), 195703 (2020).

[65] *Defect states and their electric field-enhanced electron thermal emission in heavily Zr-doped β-Ga<sub>2</sub>O<sub>3</sub> crystals*

Rujun SUN, Yu Kee Ooi, Arkka Bhattacharyya, Muad Saleh, **Sriram Krishnamoorthy**, Kelvin G. Lynn, Michael A. Scarpulla, Applied Physics Letters **117** (21), 212104 (2020).

[64] *The anisotropic quasi-static permittivity of single-crystal beta-Ga<sub>2</sub>O<sub>3</sub> measured by terahertz spectroscopy*

Prashanth Gopalan, Sean Knight, Ashish Chanana, Megan Stokey, [Praneeth Ranga](#), Michael A. Scarpulla, **Sriram Krishnamoorthy**, Vanya Darakchieva, Zbigniew Galazka, Klaus Irmischer, Andreas Fiedler, Steve Blair, Mathias M. Schubert, Berardi Sensale-Rodriguez, Applied Physics Letters 117 (25), 252103 (2020). (**Editor's Pick**)

[63] *Delta-doped  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> films with narrow FWHM grown by metalorganic vapor-phase epitaxy*

[Praneeth Ranga](#), [Arkka Bhattacharyya](#), Adrian Chmielewski, [Saurav Roy](#), Nasim Alem and **Sriram Krishnamoorthy**, Applied Physics Letters 117, 172105 (2020)

[62] *Low Temperature Homoepitaxy Of (010)  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> By Metalorganic Vapor Phase Epitaxy : Expanding The Growth Window*

[Arkka Bhattacharyya](#), [Praneeth Ranga](#), [Saurav Roy](#), Jonathan Ogle, Luisa Whittaker-Brooks, **Sriram Krishnamoorthy**, Applied Physics Letters 117 (14), 142102 (2020).

[61] *Electro-thermal co-design of  $\beta$ -(Al<sub>x</sub>Ga<sub>1-x</sub>)<sub>2</sub>O<sub>3</sub>/Ga<sub>2</sub>O<sub>3</sub> modulation doped field effect transistors*

Bikramjit Chatterjee, Yiwen Song, James Spencer Lundh, Yuewei Zhang, Zhanbo Xia, Zahabul Islam, Jacob Leach, Craig McGray, [Praneeth Ranga](#), **Sriram Krishnamoorthy**, Aman Haque, Siddharth Rajan and Sukwon Choi, Appl. Phys. Lett. 117, 153501 (2020);

[60] *Design of  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> Schottky Barrier Diode With p-type III-Nitride Guard Ring for Enhanced Breakdown*

[Saurav Roy](#), [Arkka Bhattacharyya](#), **Sriram Krishnamoorthy**, IEEE Transactions on Electron Devices 67 (11), 4842-4848 (2020).

[59] *Highly tunable, polarization-engineered two-dimensional electron gas in  $\epsilon$ -(AlGa)<sub>2</sub>O<sub>3</sub>/ $\epsilon$ -Ga<sub>2</sub>O<sub>3</sub> heterostructures*

[Praneeth Ranga\\*](#), Sung Beom Cho\*, Rohan Mishra, **Sriram Krishnamoorthy**, Applied Physics Express 13, 061009 (2020). (\*-Equal contribution)

[58] *Delta-doped  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> thin films and  $\beta$ -(Al<sub>0.26</sub>Ga<sub>0.74</sub>)<sub>2</sub>O<sub>3</sub>/ $\beta$ -Ga<sub>2</sub>O<sub>3</sub> heterostructures grown by metalorganic vapor-phase epitaxy*

[Praneeth Ranga](#), [Arkka Bhattacharyya](#), Ashwin Rishinaramangalam, Yu Kee Ooi, Michael A Scarpulla, Daniel Feezell, **Sriram Krishnamoorthy**, Applied Physics Express 13 (4), 045501 (2020).

[57] *Synthesis and Characterization of Large-Area Nanometer-Thin  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> Films from Oxide Printing of Liquid Metal Gallium*

Jacqueline Cooke, Leila Ghadbeigi, Rujun Sun, [Arkka Bhattacharyya](#), Yunshan Wang, Michael A Scarpulla, **Sriram Krishnamoorthy**, Berardi Sensale-Rodriguez, physica status solidi (a) 217 (10), 1901007 (2020).

[56] *Electrical and Optical Properties of Degenerately Doped Hf: $\beta$ -Ga<sub>2</sub>O<sub>3</sub> Single Crystals*

Muad Saleh, Joel B. Varley, Jani Jesenovec, [Arkka Bhattacharyya](#), Santosh Swain, **Sriram Krishnamoorthy**, Kelvin Lynn, Semiconductor Science and Technology 35 (4), 04LT01 (2020).

[55] *Theoretical investigation of (Al<sub>x</sub>Ga<sub>1-x</sub>)<sub>2</sub>O<sub>3</sub>/Ga<sub>2</sub>O<sub>3</sub> intersubband transitions and quantum well infrared photodetectors*

[Joseph Lyman](#), **Sriram Krishnamoorthy**, Journal of Applied Physics 127 (17), 173102 (2020).

[54] *Schottky barrier height engineering in  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> using thin SiO<sub>2</sub> as a thin interfacial layer*

[Arkka Bhattacharyya](#), [Praneeth Ranga](#), Muad Saleh, Michael Scarpulla, Kelvin Lynn and **Sriram Krishnamoorthy**, IEEE Journal of the Electron Devices Society 8, 286-294 (2020).

[53] [Praneeth Ranga](#), Ashwin Rishinaramangalam, Joel Varley, [Arkka Bhattacharyya](#), Daniel Feezell, **Sriram Krishnamoorthy**, "Si-doped  $\beta$ -(Al<sub>0.26</sub>Ga<sub>0.74</sub>)<sub>2</sub>O<sub>3</sub> thin films and heterostructures grown by metalorganic vapor-phase epitaxy", Applied Physics Express 12 (11), 111004 (2019) (**Spotlight Article 2019**)

[52] Muad Saleh, Arkka Bhattacharyya, Joel Basile Varley, Santosh Kumar Swain, Jani Jesenovc, **Sriram Krishnamoorthy**, Kelvin Lynn, "Electrical and optical properties of Zr doped  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> single crystals", Applied Physics Express, 12 085502 (2019).

[51] Nidhin Kurian Kalarickal, Zhanbo Xia, Joe McGlone, **Sriram Krishnamoorthy**, Wyatt Moore, Mark Brenner, Aaron R Arehart, Steven A Ringel, Siddharth Rajan, "Mechanism of Si doping in plasma assisted MBE growth of  $\beta$ -Ga<sub>2</sub>O<sub>3</sub>", Applied Physics Letters 115 (15), 152106 (2019).

[50] Prashanth Gopalan, Ashish Chanana, **Sriram Krishnamoorthy**, Ajay Nahata, Michael A Scarpulla, Berardi Sensale-Rodriguez, "Ultrafast THz modulators with WSe<sub>2</sub> thin films", Optical Materials Express 9 (2), 826-836 (2019).

[49] Yunshan Wang, Peter T Dickens, Joel B Varley, Xiaojuan Ni, Emmanuel Lotubai, Samuel Sprawls, Feng Liu, Vincenzo Lordi, **Sriram Krishnamoorthy**, Steve Blair, Kelvin G Lynn, Michael Scarpulla, Berardi Sensale-Rodriguez, "Incident wavelength and polarization dependence of spectral shifts in  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> UV photoluminescence", Nature Scientific reports 8 (1), 18075 (2018).

### **Journal Publications before joining Utah (Graduate & Post-doctoral Research)**

48. Anamika Singh Pratiyush, **Sriram Krishnamoorthy**, Sandeep Kumar, Zhanbo Xia, Rangarajan Muralidharan, Siddharth Rajan, Digbijoy N Nath, "MBE grown Self-Powered  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> MSM Deep-UV Photodetector", Japanese Journal of Applied Physics 57 (6), 060313 (2018).

47. Hantian Gao, Shreyas Muralidharan, Nick Pronin, Md Rezaul Karim, Susan M. White, Thaddeus Asel, Geoffrey Foster, **Sriram Krishnamoorthy**, Siddharth Rajan, Lei R. Cao, Masataka Higashiwaki, Holger von Wenckstern, Marius Grundmann, Hongping Zhao, David C. Look, and Leonard J. Brillson, "Native Point Defect Identification and Control in Ga<sub>2</sub>O<sub>3</sub>", Applied Physics Letters 112 (24), 242102 (2018).

46. Chandan Joishi, Subrina Rafique, Zhanbo Xia, Lu Han, **Sriram Krishnamoorthy**, Yuewei Zhang, Saurabh Lodha, Hongping Zhao, Siddharth Rajan, "Low-pressure CVD-grown  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> bevel-field-plated Schottky barrier diodes", Applied Physics Express 11 (3), 031101 (2018).

45. Zhanbo Xia, Chandan Joishi, **Sriram Krishnamoorthy**, Sanyam Bajaj, Yuewei Zhang, Mark Brenner, Saurabh Lodha, Siddharth Rajan, "Delta doped  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> Field Effect Transistors with Regrown Ohmic Contacts", IEEE Electron Device Letters IEEE Electron Device Letters 39 (4), 568-571 (2018).

44. Choong Hee Lee, **Sriram Krishnamoorthy**, Pran K Paul, Dante J O'Hara, Mark R Brenner, Roland K Kawakami, Aaron R Arehart, Siddharth Rajan, "Large-area SnSe<sub>2</sub>/GaN heterojunction diodes grown by molecular beam epitaxy", Applied Physics Letters 111 (20), 202101 (2017).

43. Fatih Akyol, Yuewei Zhang, **Sriram Krishnamoorthy**, Siddharth Rajan, "Ultralow-voltage-drop GaN/InGaN/GaN tunnel junctions with 12% indium content", Applied Physics Express 10 (12), 121003 (2017).

42. **Sriram Krishnamoorthy**, Z. Xia, C. Joishi, Y. Zhang, J. McGlone, J. Johnson, M. Brenner, A. R. Arehart, J. A. Hwang, S. Lodha, S. Rajan, "Modulation-doped beta-(Al<sub>0.2</sub>Ga<sub>0.8</sub>)<sub>2</sub>O<sub>3</sub>/Ga<sub>2</sub>O<sub>3</sub> Field-Effect Transistor", Applied Physics Letters 111 (2), 023502 (2017).- **ten most cited articles in 2018 published in 2016 and 2017**

41. **Sriram Krishnamoorthy**, Zhanbo Xia, Sanyam Bajaj, Mark Brenner, and Siddharth Rajan, "Delta-doped Beta-Gallium Oxide Field Effect Transistor", Applied Physics Express 10 (5), 051102 (2017) – 2017 Spotlight Article – <http://iopscience.iop.org/journal/1882-0786/page/Spotlights>, **2018 JSAP Outstanding Paper Award**

40. Anamika Singh Pratiyush\*, **Sriram Krishnamoorthy**\*, Swanand Vishnu Solanke, Zhanbo Xia, Rangarajan Muralidharan, Siddharth Rajan, Digbijoy N. Nath, "High Responsivity in Molecular Beam Epitaxy (MBE) grown beta-Ga<sub>2</sub>O<sub>3</sub> Metal Semiconductor Metal (MSM) Solar Blind Deep-UV Photodetector", Applied Physics Letters, 110(22), 221107 (2017). (\*ASP and SK Equal contribution). **ten most cited articles in 2018 published in 2016 and 2017**

39. JM Johnson, CH Lee, **S Krishnamoorthy**, S Rajan, J Hwang, "Atomic Scale Structure and Defects in 2D GaSe Films and Van der Waals Interface", Microscopy and Microanalysis 23 (S1), 1728-1729 (2017).

38. JM Johnson, **S Krishnamoorthy**, S Rajan, J Hwang, "Point and Extended Defects in Ultra-Wide Band Gap  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> Interfaces", Microscopy and Microanalysis 23 (S1), 1454-1455 (2017).

37. Yuewei Zhang, **Sriram Krishnamoorthy**, Fatih Akyol, Sanyam Bajaj, Andrew A Allerman, Michael W Moseley, Andrew M Armstrong, Siddharth Rajan, "Tunnel-injected sub-260 nm ultraviolet light emitting diodes", Applied Physics Letters 110 (20), 201102 (2017).

36. Choong Hee Lee , **Sriram Krishnamoorthy** , Dante J. O'Hara, Jared M. Johnson, John Jamison, Roberto C. Myers, Roland K. Kawakami, Jinwoo Hwang, Siddharth Rajan, " Molecular Beam Epitaxy of 2D-layered Gallium Selenide on GaN substrates ", arXiv:1610.06265 Click here (CHL and SK Equal contribution ) , Journal of Applied Physics 121 (9), 094302 (2017). – Article covered in nanotechweb.org (<http://nanotechweb.org/cws/article/tech/68868>)
35. Choong Hee Lee, Edwin W. Lee II, William McCulloch, Zane Jamal-Eddine, **Sriram Krishnamoorthy** , Michael J Newburger, Roland K. Kawakami, Yiyang Wu and Siddharth Rajan, "A self-limiting layer-by-layer etching technique for 2H-MoS<sub>2</sub>", Applied Physics Express, Volume 10, Number 3, 035201 (2017).
34. Yuewei Zhang, **Sriram Krishnamoorthy** , Fatih Akyol , Jared M. Johnson , Andrew A. Allerman , Michael William Moseley , Andrew M. Armstrong , Jinwoo Hwang , Siddharth Rajan , "Reflective Metal/Semiconductor Tunnel Junctions for Hole Injection in AlGa<sub>N</sub> UV LEDs" – Accepted for publication in Applied Physics Letters (2017).
33. Sanyam Bajaj, Zhichao Yang, Fatih Akyol, Pil Sung Park, Yuewei Zhang, **Sriram Krishnamoorthy**, David J. Meyer, Siddharth Rajan, "Graded AlGa<sub>N</sub> Channel Transistors for Improved Current and Power Gain Linearity" – IEEE Transactions on Electron Devices 64 (8), 3114-3119 (2017).
- 32. Sriram Krishnamoorthy** , Edwin W. Lee II, Choong Hee Lee, Yuewei Zhang, William D. McCulloch, Jared M. Johnson, Jinwoo Hwang, Yiyang Wu, Siddharth Rajan" High Current Density 2D/3D MoS<sub>2</sub>/GaN Esaki Tunnel Diodes", Applied Physics Letters 109 (18), 183505 (2016) .
31. Yuewei Zhang, **Sriram Krishnamoorthy** , Fatih Akyol , Andrew A. Allerman , Michael William Moseley , Andrew M. Armstrong , Siddharth Rajan , " Design and Demonstration of Ultra-Wide Bandgap AlGa<sub>N</sub> Tunnel Junctions ", Phys. Lett. 109, 121102 (2016).
30. Yuewei Zhang, **Sriram Krishnamoorthy** , Fatih Akyol , Andrew A. Allerman , Michael William Moseley , Andrew M. Armstrong , Siddharth Rajan , " Design of P-Type Cladding Layers for Tunnel-Injected UVA Light Emitting Diodes " . Applied Physics Letters 109, 191105 (2016).
29. Fatih Akyol , **Sriram Krishnamoorthy** , Yuewei Zhang , Jared Johnson , Jinwoo Hwang , Siddharth Rajan , " Low-resistance GaN tunnel homojunctions with 150 kA/cm<sup>2</sup> current and repeatable negative differential resistance " Applied Physics Letters 108, 131103 (2016).
28. Sanyam Bajaj, Fatih Akyol, **Sriram Krishnamoorthy** , Yuewei Zhang, Siddharth Rajan , " AlGa<sub>N</sub> Channel Field Effect Transistors with Graded Heterostructure Ohmic Contacts " , Applied Physics Letters 109, 133508 (2016).
27. Zhichao Yang, Yuewei Zhang, **Sriram Krishnamoorthy** , Digbijoy Neelim Nath, Jacob B. Khurgin, Siddharth Rajan "Current Gain above 10 in sub-10 nm Base III-Nitride Tunneling Hot Electron Transistors with GaN/AlN Emitter", Applied Physics Letters 108, 192101 (2016) .
26. Yuewei Zhang, Andrew Allerman, **Sriram Krishnamoorthy** , Fatih Akyol, Michael W. Moseley, Andrew Armstrong, Siddharth Rajan , " Enhanced Light Extraction in Tunnel Junction Enabled Top Emitting UV LEDs " Applied Physics Express 9, 052102 (2016).
25. Emre Gür, Fatih Akyol, **Sriram Krishnamoorthy**, Siddharth Rajan, Steven A Ringel , " Deep level defects in N-rich and In-rich In(x)Ga(1-x)N: in composition dependence " Superlattices and Microstructures, doi:10.1016/j.spmi.2016.05.009 (2016).
24. Fatih Akyol, **Sriram Krishnamoorthy**, Yuewei Zhang, Siddharth Rajan, "GaN Based Three-junction Cascaded Light Emitting Diode with Low-resistance InGa<sub>N</sub> Tunnel Junctions", Applied Physics Express 8, 082103 (2015).
23. Yuewei Zhang, **Sriram Krishnamoorthy**, Jared M Johnson, Fatih Akyol, Andrew Allerman, Michael W Moseley, Andrew Armstrong, Jinwoo Hwang, Siddharth Rajan, " Interband Tunneling for Hole Injection in III- Nitride Ultra-violet Emitters" Applied Physics Letters 106, 141103 (2015).
22. Choong Hee Lee, William McCulloch, Lu Ma, Edwin Lee, **Sriram Krishnamoorthy**, Jinwoo Hwang, Yiyang Wu, and Siddharth Rajan, " Transferred Large Area Single Crystal MoS<sub>2</sub> Field Effect Transistors", Applied Physics Letters, 107, 193503 (2015).
21. Edwin W. Lee II, Choong Hee Lee, Pran K Paul, Lu Ma, William D McCulloch, **Sriram Krishnamoorthy**, Yiyang Wu, Aaron Arehart, Siddharth Rajan, "Layer-Transferred MoS<sub>2</sub>/GaN PN Diodes", Applied Physics Letters 107, 103505(2015).
20. Sanyam Bajaj , Omor Faruk Shoron , Pil Sung Park , **Sriram Krishnamoorthy** , Fatih Akyol , Ting-Hsiang Hung , Shahed Reza , Eduardo Chumbes , Jacob B. Khurgin , Siddharth Rajan , " Density-Dependent Electron Transport and Precise Modeling of GaN HEMTs " , Applied Physics Letters, 107, 153504 (2015).
19. Pil Sung Park, **Sriram Krishnamoorthy**, Sanyam Bajaj, Digbijoy Nath, and Siddharth Rajan, " Recess- Free Non- alloyed

Ohmic Contacts on Graded AlGa<sub>N</sub> Heterojunction FETs ", IEEE Electron Device Letters, 36, NO. 3, pp 226- 228 (2015).

18. **Sriram Krishnamoorthy**, Fatih Akyol, and Siddharth Rajan, " InGa<sub>N</sub>/Ga<sub>N</sub> Tunnel Junctions For Hole Injection in Ga<sub>N</sub> Light Emitting Diodes ", Applied Physics Letters 105, 141104 (2014).

17. Ting-Hsiang Hung, Pil Sung Park, **Sriram Krishnamoorthy**, Digbijoy Nath and Siddharth Rajan, "Interface Charge Engineering for Enhancement-Mode Ga<sub>N</sub> MISHEMTs " , IEEE Electron Device Letters 35 (3), 312-314 (2014).

16. Prashanth Ramesh, **Sriram Krishnamoorthy** , Siddharth Rajan and Gregory Washington, "Energy Band Engineering for photoelectrochemical etching of Ga<sub>N</sub>/InGa<sub>N</sub> heterostructures " , Applied Physics Letters 104, 243503 (2014).

15. **Sriram Krishnamoorthy** , Fatih Akyol, Pil Sung Park, and Siddharth Rajan, "Low Resistance Ga<sub>N</sub>/InGa<sub>N</sub>/Ga<sub>N</sub> tunnel junctions " , Applied Physics Letters 102, 113503 (2013).

14. **Sriram Krishnamoorthy** , Thomas Kent, Jing Yang, Pil Sung Park, Roberto Myers, and Siddharth Rajan, "Gd<sub>N</sub> Nanoisland-Based Ga<sub>N</sub> Tunnel Junctions " , Nano Letters 13 (6) 2570- 2575 (2013).

13. Fatih Akyol, **Sriram Krishnamoorthy**, and Siddharth Rajan, "Tunneling-based carrier regeneration in cascaded Ga<sub>N</sub> light emitting diodes to overcome efficiency droop " , Applied Physics Letters 103, 081107 (2013).

12. Jie Yang, Sharon Cui, T. P. Ma, Ting-Hsiang Hung, Digbijoy Nath, **Sriram Krishnamoorthy**, and Siddharth Rajan, "Electron Tunneling Spectroscopy Study of Electrically Active Traps in AlGa<sub>N</sub>/Ga<sub>N</sub> High Electron Mobility Transistors", Applied Physics Letters 103, 223507 (2013) .

11. Jie Yang, Sharon Cui, T. P. Ma, Ting-Hsiang Hung, Digbijoy Nath, **Sriram Krishnamoorthy**, and Siddharth Rajan, " A study of electrically active traps in AlGa<sub>N</sub>/Ga<sub>N</sub> high electron mobility transistor", Applied Physics Letters 103, 173520 (2013).

10. Masihur R. Laskar, Lu Ma, Shantha Kumar K, Pil Sung Park, **Sriram Krishnamoorthy**, Digbijoy N. Nath, Wu Lu, Yiying Wu, and Siddharth Rajan, "Large Area Single Crystal (0001) Oriented MoS<sub>2</sub> Thin Films", Applied Physics Letters, 102, 252108 (2013).

9. Ting-Hsiang Hung, **Sriram Krishnamoorthy**, Michele Esposito, Digbijoy N. Nath , Pil Sung Park and Siddharth Rajan, "Interface Charge Engineering at Atomic Layer Deposited (ALD) dielectric/III-Nitride Interfaces", Applied Physics Letters 102, 072105 (2013).

8. Prashanth Ramesh, **Sriram Krishnamoorthy**, Siddharth Rajan, and Gregory Washington, " Fabrication and characterization of piezoelectric gallium nitride switch for optical MEMS applications", Smart Materials and Structures 21, 094003 (2012).

7. Fatih Akyol, Digbijoy N. Nath, **Sriram Krishnamoorthy**, Pil Sung Park, and Siddharth Rajan, "Suppression of Electron Overflow and Efficiency Droop in N-polar Ga<sub>N</sub> Green LEDs", Applied Physics Letters 100, 111118 (2012).

6. V Di Lecce, **Sriram Krishnamoorthy**, Michele Esposito, Ting-Hsiang Hung, Alessandro Chini, and Siddharth Rajan, "Metal-oxide barrier extraction by Fowler-Nordheim tunnelling onset in Al<sub>2</sub>O<sub>3</sub>-on-Ga<sub>N</sub> MOS diodes", Electronics Letters 48, 347 (2012).

5. Pil Sung Park, Digbijoy N. Nath, **Sriram Krishnamoorthy**, and Siddharth Rajan, "Electron Gas Dimensionality Engineering in AlGa<sub>N</sub>/Ga<sub>N</sub> HEMTs using Polarization", Applied Physics Letters, 100, 063507 (2012).

4. **Sriram Krishnamoorthy**, Pil Sung Park, and Siddharth Rajan, "Demonstration of forward inter-band tunneling in Ga<sub>N</sub> by Polarization engineering", Applied Physics Letters 99, 233504 (2011).

3. Emre Gur, Zeng Zhang, **Sriram Krishnamoorthy** , Siddharth Rajan and Steve Ringel, "Detailed characterization of deep levels in InGa<sub>N</sub>", Applied Physics Letters 99, 092109 (2011).

2. Michele Esposito, **Sriram Krishnamoorthy** , Digbijoy Nath, Sanyam Bajaj, Ting-Hsiang Hung and Siddharth Rajan, "Electrical Properties of Atomic Layer Deposited Aluminum Oxide on Gallium Nitride " , Applied Physics Letters 99, 133503 (2011).

1. **Sriram Krishnamoorthy**, Digbijoy Nath, Fatih Akyol, Pil Sung Park, Michele Esposito, Siddharth Rajan "Polarization engineered Ga<sub>N</sub>/InGa<sub>N</sub>/Ga<sub>N</sub> tunnel diodes," Applied Physics Letters 97,203502 (2010).

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#### **SELECT CONFERENCE PRESENTATIONS Student authors from Krishnamoorthy Group underlined**

**2021:** To be updated

**2020:** To be updated

## 2019

**113. Praneeth Ranga, Arkka Bhattacharya, Luisa Whittaker-Brooks, Sriram Krishnamoorthy**, "Growth of Homoepitaxial  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> Films using Far Injection MOVPE Reactor", IWGO 2019 (~ 30% acceptance rate for talks)

**112. Praneeth Ranga, Ashwin Rishinaramangalam, Arkka Bhattacharya, Luisa Whittaker-Brooks, Daniel Feezell, Sriram Krishnamoorthy**, "MOVPE-GROWN SI-DOPED  $\beta$ -(Al<sub>0.25</sub>Ga<sub>0.75</sub>)<sub>2</sub>O<sub>3</sub> THIN FILMS AND HETEROJUNCTIONS", OMVPE 2019 Late News (Presented by Prof. Krishnamoorthy)

**111. Arkka Bhattacharyya, Praneeth Ranga, Muad Saleh, Santosh Swain, Michael Scarpulla, Kelvin Lynn and Sriram Krishnamoorthy**, "Schottky Barrier Height Engineering in  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> using a dielectric interlayer", IWGO 2019 (Poster)

**110. Joseph Lyman, and Sriram Krishnamoorthy**, "Theoretical Investigation of Infrared Photodetection in Gallium Oxide/Aluminum Gallium Oxide Quantum Well Structures", IWGO 2019 (~ 30% acceptance rate for talks)

109. "Electronic Properties of Zr and Hf Doped  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> Single Crystals", Saleh, M., S. Swain, J. Jesenovec, J. Varley, A. Bhattacharyya, **S. Krishnamoorthy**, K. Lynn. In *30<sup>th</sup> International Conference of Defects in Semiconductors*, Seattle, WA, 2019. (Oral Presentation).

108. "Electronic Properties and Defect Energies in Zr-doped  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> Single Crystal," Jesenovec, J., M. Saleh, S. Swain, **A. Bhattacharyya, S. Krishnamoorthy**, J. McCloy, K. Lynn. In *30<sup>th</sup> International Conference of Defects in Semiconductors*, Seattle, WA, 2019. (Poster).

107. "Electrical and Optical Properties of Zr doped  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> Single Crystals Grown by Czochralski Method," Saleh, M., S. Swain, J. Jesenovec, J. Varley, **A. Bhattacharyya, S. Krishnamoorthy**, K. Lynn. In *ICCGE-19*, Keystone, CO, 2019. (Poster). **Award**

Two awards sponsored by Elsevier and by IUCR for his poster presentation in ICCGE-19 in Keystone, CO ; Our paper on Zr doped  $\beta$ -Ga<sub>2</sub>O<sub>3</sub>, was featured in a review in the Compound Semiconductor Magazine:  
<https://www.publishing.ninja/V4/page/9707/390/6/1>

## 2018

**106. Praneeth Ranga, Berardi Sensale-Rodriguez, Michael Scarpulla, Sriram Krishnamoorthy**, "Low Pressure CVD Growth of N-Type Ga<sub>2</sub>O<sub>3</sub> Thin Films Using Solid Ge Source", 2018 Materials Research Society . Conference Paper, 11/27/2018.

**105. Praneeth Ranga, Sung Beom Cho, Rohan Mishra, Sriram Krishnamoorthy**, " Polarization Engineering of  $\epsilon$ -(AlGa)<sub>2</sub>O<sub>3</sub>/ $\epsilon$ -Ga<sub>2</sub>O<sub>3</sub> Heterostructures", Materials Research Society (MRS) Fall meeting (2018). Conference Paper, Presented, 11/26/2018.

**104. Praneeth Ranga, Sung Beom Cho, Rohan Mishra, Sriram Krishnamoorthy**, "Modeling of 2DEG Formation at Polar  $\epsilon$ -(AlGa)<sub>2</sub>O<sub>3</sub>/ $\epsilon$ -Ga<sub>2</sub>O<sub>3</sub> Heterojunctions", Annual Meeting of the American Physical Society (APS) Four Corners Section (2018). Conference Paper, Presented, 10/13/2018.

**103. Praneeth Ranga\*, Vivek Sattiraju, Jonathan Ogle, Berardi Sensale-Rodriguez, Luisa Whittaker-Brooks, Michael Scarpulla, Sriram Krishnamoorthy**, "N-type Doping in LPCVD-grown  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> Films using Solid Source Dopants", Annual Meeting of the American Physical Society (APS) Four Corners Section (2018). Conference Paper, Presented, 10/12/2018.

**102. Joseph Lyman\*, Sriram Krishnamoorthy**, "Intersubband Optical Transitions in Ultra-Wide Bandgap Quantum Well Structures", Annual Meeting of the American Physical Society (APS) Four Corners Section (2018). Conference Paper, Presented, 10/12/2018.

**101. Sriram Krishnamoorthy et.al.** Ge and Si-doped LPCVD-grown  $\beta$ - Ga<sub>2</sub>O<sub>3</sub> Thin Films; 3rd US Workshop on Gallium Oxide (GOX 2018) Presented, 08/15/2018.

**100. Gopalan P., Chanana A., Krishnamoorthy S., Nahata A., Scarpulla M. & Sensale-Rodriguez B.** (2018). Ultrafast terahertz modulator based on metamaterial-integrated WSe<sub>2</sub> thin-films. *International Conference on Infrared, Millimeter, and Terahertz Waves, IRMMW-THz*. Vol. 2018-September

**99. Yunshan Wang , Peter Dickens , Xiaojuan Ni , Emmanuel Lotubai , Samuel Sprawls , Feng Liu , Sriram Krishnamoorthy , Steve Blair, Kelvin Lynn , Michael Scarpulla and Berardi Sensale Rodriguez**, "Photoluminescence from  $\beta$ -Ga<sub>2</sub> O<sub>3</sub> Bulk Crystals—Spectral Dependences on Incident Wavelength and Polarization", *Electronic Materials Conference 2018*

**Conference presentations 1-98:** Presentations before joining Utah (Full list available upon request)

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## PRESS COVERAGE

12. "Electrical and Optical Properties of Zr doped  $\beta$ -G2O3 Single Crystals Grown by Czochralski Method," Saleh, M., S. Swain, J. Jesenovc, J. Varley, A. Bhattacharyya, **S. Krishnamoorthy**, K. Lynn. In *ICCGE-19*, Keystone, CO, 2019. (Poster). **Award**

Two awards sponsored by Elsevier and by IUCR for his poster presentation in ICCGE-19 in Keystone, CO ; Our paper on Zr doped  $\beta$ -Ga<sub>2</sub>O<sub>3</sub>, was featured in a review in the Compound Semiconductor Magazine: Lead authors from Washington State University <https://www.publishing.ninja/V4/page/9707/390/6/1>

11. Equipping MOCVD Tools With Dual Use Capability, April 2019.  
[https://compoundsemiconductor.net/article/106963/Equipping\\_MOCVD\\_Tools\\_With\\_Dual\\_Use\\_Capability](https://compoundsemiconductor.net/article/106963/Equipping_MOCVD_Tools_With_Dual_Use_Capability) May 2019 <https://www.designworldonline.com/how-to-create-a-dual-use-mocvd-platform/>

10. U Engineers Start Study on Better High-Voltage Electronics, Dec 2018.  
<https://dailyutahchronicle.com/2018/12/24/u-engineers-start-study-on-better-high-voltage-electronics/> University of Utah engineers will study better semiconductor material for high-voltage electronics, Dec 2018  
<https://phys.org/wire-news/305351013/university-of-utah-engineers-will-study-better-semiconductor-mat.html>  
<https://slenterprise.com/index.php/news/latest-news/2391-uofu-engineers-study-better-semiconductor-material-for-high-voltage-electronics>

9. Layered 2D dichalcogenides grow on 3D semiconductors May 2017 <http://nanotechweb.org/cws/article/tech/68868>

8. Quantum tunneling boosts UV LED efficiency , April 2016.  
[http://www.compoundsemiconductor.net/pdf/magazines/2016/csApril2016\\_2.pdf](http://www.compoundsemiconductor.net/pdf/magazines/2016/csApril2016_2.pdf)

7. "Band engineering for improved photo-electro-chemical etch", Semiconductor Today, 14<sup>th</sup> July 2014. [http://www.semiconductor-today.com/news\\_items/2014/JUL/OSU\\_140714.shtml](http://www.semiconductor-today.com/news_items/2014/JUL/OSU_140714.shtml)

6. "Epitaxial cascading of LEDs to tackle efficiency droop", Compound Semiconductor, 25<sup>th</sup> September 2013.  
<http://www.compoundsemiconductor.net/article/-Epitaxial-cascading-of-nitride-LEDs-overcomes-efficiency-droop.html>

5. "Tunneling to avoid efficiency droop in nitride semiconductor LEDs", Semiconductor Today, 30<sup>th</sup> August 2013. [http://www.semiconductor-today.com/news\\_items/2013/AUG/OSU\\_300813.html](http://www.semiconductor-today.com/news_items/2013/AUG/OSU_300813.html)

4. "Lowering tunneling resistance in GaN/InGaN/GaN structures", Semiconductor Today, 3<sup>rd</sup> April 2013. [http://www.semiconductor-today.com/news\\_items/2013/APR/OSU\\_030413.html](http://www.semiconductor-today.com/news_items/2013/APR/OSU_030413.html)

3. "Flattening transconductance profiles in nitride HEMTs", Semiconductor Today, 23<sup>rd</sup> February 2012. [http://www.semiconductor-today.com/news\\_items/2012/FEB/OSU\\_220212.html](http://www.semiconductor-today.com/news_items/2012/FEB/OSU_220212.html)

2. "Reversing polarization to tackle overshoot and droop", Semiconductor Today, 30<sup>th</sup> March 2012. [http://www.semiconductor-today.com/news\\_items/2012/MAR/OSU\\_290312.html](http://www.semiconductor-today.com/news_items/2012/MAR/OSU_290312.html)

1. "Ohio boosts nitride tunneling current to 118 A/cm<sup>2</sup> at -1 V", Semiconductor Today, 24<sup>th</sup> November 2010. [http://www.semiconductor-today.com/news\\_items/2010/NOV/OHIO\\_241110.htm](http://www.semiconductor-today.com/news_items/2010/NOV/OHIO_241110.htm)

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## INTERNAL SERVICE

- IEEE Student Branch @ U of Utah & HKN, Faculty Mentor/ Counselor, Jan 2019 – present
- ECE Safety Officer/ Lab safety subcommittee chair, July 2019- present
- Member, COE Safety committee, July 2019- present
- ECE Strategic and Research Development Committee (Advanced Materials/Photonics) August 2020- present
- ECE BS EE Undergraduate committee - course overhaul/course evaluations August 2020- present
- ECE Seminar and Distinguished Lecture Committee: August 2020- present
- Solid-State/Circuits/MEMS curricular sub-committee. 08/2017 - present. Department service.
- Graduate Committee, 01/2019- 09/2019
- EE Undergraduate Graduation Committee, 08/2018- 09/2019

## EXTERNAL SERVICE

### Editorial

- Guest Co-editor, Journal of Physics D: Applied Physics Special Issue on Gallium Oxide Devices and Materials (2020).

### Conferences

- Technical Program Committee: 4<sup>th</sup> International Workshop on Gallium Oxide and Related Materials (IWGO-4)- 2021
- Symposium Organizer: Electronic Materials and Applications 2021 (EMA 2021)- Emerging Semiconductor Materials and Interfaces
- Electronic Material Conference- Program Committee (2021, 2022, 2023).
- Technical Program Committee: 4<sup>th</sup> US Gallium Oxide Workshop, September 2020 (Postponed to 2021)
- Technical Program Committee: 3<sup>rd</sup> International Workshop on Gallium Oxide and Related Materials (IWGO-3)- 2019
- 60<sup>th</sup> Electronic Materials Conference (2018), 61<sup>st</sup> Electronic Materials Conference (2019), 62<sup>nd</sup> Electronics Materials Conference (2020), 63<sup>rd</sup> Electronics Materials Conference (2020) Role: EMC Invited Organizer. 10/2017 - present
- International conference on Emerging Electronics (4<sup>th</sup> ICEE)- IEEE EDS- 2018. Role: Sub-committee member (Wide Band Gap Semiconductors)
- Session chair @ conferences: EMC 2020, WOCSEMMAD 2020, IWGO 2019, EMC 2019, GOX 2018, EMC 2018, IWN 2016

### Proposal Review

- National Science Foundation, EPMD Panel; National Science Foundation, DMR Panel; DMR Ad-hoc review
- Air Force Office of Scientific Research (AFOSR) proposal review
- National Defense Science and Engineering Graduate (NDSEG) Fellowship Panel 2018-2020
- Foundation for Polish Science- Research Proposal Review
- Indian Institute of Technology Kanpur- Research Initiation Program

### Journal Peer Review

- IEEE Electron Device Letters. Golden List of Reviewers 2017, 2018, 2019; IEEE Transactions on Electron Devices. Golden List of Reviewers - 2015, 2016, 2017, 2018, 2019; IEEE Journal of Photovoltaics. 2015 Golden List of Reviewers. ; IEEE. Reviewer for IEEE Electron Device Letters (EDL), Trans. on Electron Devices (TED), J. of Photovoltaics (JPV), J. Electron Device Society (JEDS), Trans. on Nanotechnology. 01/2015 - present
- AIP. Reviewer for Applied Physics Letters (APL), Journal of Applied Physics (JAP). 01/2014 – present
- Applied Physics Express