

**Shadi A. Dayeh**

Integrated Electronics and Biointerfaces Laboratory  
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**Education & Academic Training**

- 3/2010 – 10/2012 Distinguished J. R. Oppenheimer Postdoctoral Fellow, Los Alamos National Laboratory. Advisor: S. Tom Picraux.
- 9/2008 – 3/2010 Director Postdoctoral Fellow, Los Alamos National Laboratory.
- 9/2003 – 9/2008 PhD in Electrical and Computer Engineering/Electronic Materials and Devices, University of California San Diego. Advisors: Edward T. Yu and Deli Wang.
- 8/2001 – 8/2003 MS in Electrical Engineering/Circuits and Devices, Southern Methodist University. Advisor: Donald P. Butler.
- 9/1997 - 7/2001 Maitrise-en-Sciences in Physics and Electronics, Lebanese University, Beirut, Lebanon.

**Professional Experience**

- 7/2019 – current Professor, Department of Electrical and Computer Engineering, UC San Diego
- 7/2016 – 7/2019 Associate Professor, Department of Electrical and Computer Engineering, University of California, San Diego (Also affiliate of Department of NanoEngineering and the Materials Science and Engineering Program)
- 11/2012 – 7/2016 Assistant Professor, Department of Electrical and Computer Engineering, University of California, San Diego.

**Academic and Professional Recognitions**

- 2021 Technologist of the Year, LebNet Bireme Awards
- 2019 NIH Director's New Innovator Award
- 2018 International Symposium on Compound Semiconductors (ISCS) Young Scientist Award (for overcoming the critical thickness limitation in heteroepitaxy)
- 2015 Jacobs School of Engineering Teacher of the Year Award in Electrical and Computer Engineering.
- 2014 NSF Early CAREER Award.
- 2011 Distinguished Postdoctoral Performance Award for FY2010, LANL (for "Innovative research on semiconductive nanowires and their devices").
- 2010 Distinguished J. Robert Oppenheimer Postdoctoral Fellowship, LANL (one of 2 appointments per year, open to all nationalities).
- 2009, 2010 & 2011 Los Alamos National Laboratory Achievement Award.
- 2008 Director Postdoctoral Fellowship, LANL.
- 2008 Advanced Substrates and Next Generation Semiconductors Workshop, Winner of Student Paper Competition.
- 2007 Spring MRS Meeting Best Poster Award.
- 2007 Spring MRS Meeting Graduate Student Award.
- 2007 34<sup>th</sup> Conference on Physics and Chemistry of Semiconductor Surfaces and Interfaces (PCSI-34) Young Scientist Award.
- 2007 Summer Teaching Fellow for ECE department, UCSD: Fundamentals of Devices and Materials.
- 2006 Electronic Materials Conference (EMC) Outstanding Oral Presentation.
- 2006 W. S. C. Chang's Fellowship, ECE department, UCSD.
- 2005 Outstanding Teaching Assistant Award, ECE department, UCSD.

**Selected Honors for Supervised Students and Postdocs**

2022 Karen Tonsfeldt, NIH K99 Pathway to Independence Award  
2020 Woojin Choi, Harry Wieder Electronic Materials Excellence Award  
2019 Daniel Cleary, NIH NRSA Postdoctoral Fellowship  
2019 Andrew Bourhis, NSF Graduate Student Fellowship  
2018 Renjie Chen, Materials Research Society Spring Meeting Graduate Student Award  
2018 Atsunori Tanaka, Materials Research Society Spring Meeting Graduate Student Award  
2018 Atsunori Tanaka, Best Paper Award at the 2018 Compound Semiconductor Week  
2018 Nasim Vahidi, Rita L. Atkinson Graduate Fellowship  
2017 Renjie Chen, IEEE Electron Device Society PhD Student Fellowship Award (1 award in the US per year)  
2017 Mehran Ganji, Institute for Engineering in Medicine (IEM) Fellowship  
2017 Nasim Vahidi, Rita L. Atkinson Graduate Fellowship, UC San Diego  
2017 Atsunori Tanaka, Best paper award at session B2 of the 2017 International Union for Materials Research Society International Symposium in Kyoto, Japan  
2016 Valeria Gonzalez (undergraduate student), NACME Scholarship, UCSD STARS Fellow, SACNAS.  
2016 Ren Liu, UC-National Lab in Residence Graduate Student Fellowship (1 of 4 at UC per 2 years)  
2016 Lorraine Hossain, NSF Graduate Student Fellowship  
2016 Oscar Guerrero (undergraduate student), Stars Award, NACME Scholarship, ABRCMS Travel grant, GaSGC UROP Award, GEM Fellowship  
2013 Cory Heath (undergraduate student), Frieda Daum Urey Academic Fellowship, QU Undergraduate Research Scholar  
2011 Binh-Minh Nguyen, Director Fellowship, Los Alamos National Laboratory

**Group Members*****Current PhD Students***

1. Joel Roger Martin (thesis advisor, FA17-present)
2. Andrew Bourhis (thesis advisor, SU18-present)
3. Po Chun Chen (thesis advisor, SU18-present)
4. Jihwan Lee (thesis advisor, FA18-present)
5. Samantha Russman (thesis advisor, FA18-present)
6. Ritwik Vatsyayan (thesis advisor, FA18-present)
7. Tianhai Wu (thesis advisor, FA19-present)
8. Jing Gu (thesis advisor, FA21-present)

***Current Postdoctoral Fellows***

1. Keundong Lee (research advisor, 9/2020-current)

**Current Staff Scientists**

1. Youngbin Tchoe (Project Scientist, 05/2022-present following Postdoctoral Fello position 06/2018 – 05/2022)
2. Karen Tonsfeldt (Project Scientist 09/2019-present)

***Former PhD students:***

1. Xing Dai (PhD research co-advisor with Prof. Cesare Soci, 2011 – 2014, now at Almae Technology, France).
2. Wei Tang (PhD research co-advisor with Prof. King-Ning Tu, 2010-2014, now at Amazon)
3. Namseok Park (thesis advisor) PhD FA15
4. Siarhei Vishniakou (thesis advisor) PhD SP16

5. Supanee Sukrittanon, (thesis co-adviser with Prof. Charles Tu) PhD FA15
6. Yun Goo Ro (thesis advisor) PhD SP20
7. Renjie Chen (thesis advisor) PhD SP18
8. Atsunori Tanaka (thesis advisor) PhD SP19
9. Ren Liu (thesis advisor) PhD FA19
10. Sang Heon Lee (thesis advisor) PhD WI21
11. Mehran Ganji (thesis advisor) PhD SP19
12. Lorraine Hossain (thesis advisor, co-advised with Tim Gentner) PhD FA20
13. Woojin Choi (thesis advisor) PhD FA20
14. Nasim Vahidi (thesis co-advisor with Tim Gentner) PhD SP19
16. Ahmed Taha Elthakeb Youssef (thesis co-advisor, Primary advisor Ismaili) PhD FA20

#### ***Former Postdoctoral Fellows and Research Associates***

1. Hongseok Oh (research advisor, 8/2018-02/2021) currently Prof. at Soongsil University
2. Daniel Cleary (research co-advisor with Eric Halgren, 7/2018-current)
3. Yoon Tae Hwang (research advisor, FA11- FA13,) currently at Samsung Electronics
4. Bin-Minh Nguyen (research advisor, WI12-SP14): Bandgap engineered devices in Ge/Si heterostructures. currently at Hughes Research Laboratory
5. Jinkyong Yoo (postdoc research advisor, Nov. 2010 – May 2013): Top down processing and epitaxial regrowth of radial Si solar cells. Co-advised with S. Tom Picraux. Currently a staff scientist at LANL.
6. Yang Liu (postdoc research advisor, SP12-FA14): Electrochemical reactions in nanoscale Li ion battery anodes. Currently staff member at North Carolina State University
7. Shixiong Zhang (postdoc research advisor, Nov. 2010 – Nov. 2012): Spin valve devices in Si nanowires. Co-advised with S. Tom Picraux. Currently assistant professor at Indiana University.
8. Massoud L. Khraiche (Staff Research Associate, FA13-FA15): Currently Assistant Professor at the American University of Beirut.
9. Philip Mages (Staff Research Associate, FA14-FA16), deceased.
10. Arthur Clawson (Staff Research Associate, FA12), deceased.

#### ***Former MS Students***

Farid Azzazi, Fall 2014, currently Staff Member at Qualcomm.

#### ***Visitors***

1. Keundong Lee (Visiting PhD Scholar from Seoul National University, WI16 – SP17)
2. Massoud Khraiche (Visiting Scholar, 2016-2017, 2020)
3. Hongseok Oh (Visiting PhD Scholar from Seoul National University, WI17 – SU 18)
4. Howard Dabbous (Visiting MD student from American University of Beirut, SU17)
5. Chennupati Jagadish (Visiting Scholar, 2018)
6. Gyu-Chul Yi (Visiting Scholar, 2016 – Winter 2020)

#### ***Former Undergraduate Students***

1. Cory Heath, FA12-SU13, Undergraduate student, Frieda Daum Urey Academic Fellowship, QI Undergraduate Research Scholar, currently with NASA.
2. Suneun (Gloria) Kim, SU13, visitor from Kumoh National Institute of Technology.
3. Michael Mullins-Jensen, SU13-SP14, Undergraduate student, currently at AT&T.
4. Oscar Guerrero, SP16-SU16, Undergraduate student, Stars Award, NACME Scholarship, ABRCMS Travel grant, GaSGC UROP Award, GEM Fellowship, currently at Maxar Technologies.
5. Valeria Gonzalez, SU16-WI17, Undergraduate student, NACME Scholarship, UCSD STARS Fellow, SACNAS, currently a graduate student at UCSD.
6. Adrian Luna, SP16-SU16, Undergraduate student, currently at SPAWAR.

7. Martin Magno, SP16-FA16, Undergraduate student, McNair Fellow, currently Graduate student at UCSD.
8. Timothy Searcy, SP16-FA16, Undergraduate student, currently at SPAWAR.
9. Yenjung (Michelle) Lai, SU17, summer research student (ISRP) FROM National Tsing Hua University, currently graduate student at the University of Michigan.
10. Allen Yasin, FA20-SP21, Bioengineering undergraduate student with Academic Community for Engineering Success (ACES).
11. Sonia Singh, FA20-SP21, Bioengineering undergraduate student with Academic Community for Engineering Success (ACES).
12. Alexandra Mikhael, SU21, EE visiting undergraduate student from American University of Beirut.

### Professional Leadership and Services

2020	Lead organizer for the NSF-funded “Midscale Research Infrastructure Workshop for Clinical Translation of Implantable Devices.”
2018	Organizer for the Electrochemical Society AIMES meeting, session “Semiconductors, Dielectrics, and Metals for Nanoelectronics”
2017	Elected member, Electronic Materials Conference
2016	Editor, MRS Advances
2015 – 2017	Associate Editor, Nanoscale Research Letters
2015	Co-Editor for the Elsevier book series “Semiconductor Nanowires I: Growth and Theory” and lead Co-Editor for “Semiconductor Nanowires II: Properties and Devices”
2014	Co-Editor, ECS Proceedings
2012 – 2016	Editor, Journal of Nanomaterials
2014-2018	Optoelectronic Devices Committee, IEEE Electron Device Society (EDS).
2009-2014	Compound Semiconductor Devices and Circuits Committee, IEEE
2012-2016	Member of the Board of Governors for the IEEE Council on Electronic Design Automation (CEDA).
2010- 2014	Compound Semiconductor Devices and Circuits Committee, IEEE Electron Device Society (EDS).
2012-2014	IEEE Council on Electronic Design Automation (CEDA) as an Electron Devices Society (EDS) representative.
2010 May-Nov	President of the Los Alamos Postdoc Association (>400 postdocs)
2009-2010	IEEE EDS Student/GOLD Ambassador/Lecturer for North America West Region.
2007-2008	Chapter Leader, International Microelectronics and Packaging Society (iMAPS).
2010-2012	Member of Graduate of the Last Decade (GOLD) Committee, IEEE EDS. Member of Career Assistance Committee, IEEE EDS.
2006-2015	Member of Material Research Society (2006-current), Lebanese Syndicate of Engineering

### UC San Diego Committee Service

Spring 2020	Panelist, campus-wide NIH New Innovator Award
Fall 2020 – current	ACES (Academic Community for Engineering Success) Faculty Mentor, UCSD IDEA Center
Fall 2019 – 2020	Co-Chair, joint ECE-Neurosciences faculty search committee
Fall 2019 – current	Member, JSOE’s Dean Executive Committee

Fall 2019 – current	Graduate Advisor, Electronic Devices and Materials (EDM) and Nanoscale Devices and Systems (NDS)
Fall 2019 – current	Member, Selection committee for Summer Graduate Teaching Fellows
Fall 2019 – current	Member, UCSD Graduate Council
Summer 2019	Lead EDM Faculty, drafted report and presented at the faculty retreat about EDM needs for the next 5 years
Fall 2018 – 2019	Chair of Organizing Committee for Prof. Harry Wieder’s Symposium
Fall 2018	Selection Committee for the IDEA Center Director of Strategic Initiatives and Assessment
Fall 2018	Member of the ECE-Neurosciences Faculty Search Committee
Spring 2018	Panelist, UCSD Summer Engineering Institute; Panelist, UCSD IDEA Center Overnight Program
Fall 2017 – Spring 2018	Graduate Advisor, Medical Devices and Systems (MDS) track
Fall 2017	Chair of faculty search ad-hoc committee in Electronic Materials and Devices
Fall 2017	Curriculum Advisor, Medical Devices and Systems
Fall 2017	JSOE Faculty Representative for the IDEA Center Board
Fall 2014 – 2015	Chair of faculty search ad-hoc committee in Electronic Materials and Devices
Fall 2015 – 2017	ECE Alumni Board
Fall 2015 – 2016	Undergraduate Education Initiative Committee
Fall 2014 – 2015	Faculty Affair Committee
Fall 2014 – current	UCSD Chemical Safety and Surveillance Committee
Fall 2012 – 2013	Alumni Council, ECE Department
Fall 2012 – 2014	Depth advisor for the Electronic Materials and Devices.
Fall 2012 – 2014	Admissions committee
Fall 2014	Co-chair of ad-hoc committee for the Electronic Materials and Devices faculty-hire focus group
Summer 2014	Ad-hoc committee, co-chair of EDM faculty-hire focus group
Fall 2012–2014	Electronic Devices and Materials Graduate and Undergraduate Depth Advisor, ECE Department
Fall 2014 – 2015	Course director, ECE103/107
Fall 2014 – current	Faculty Affairs Committee
Fall 2014 – current	Undergraduate Education Initiative Committee
Fall 2012 – 2013	Alumni Council, Electrical and Computer Engineering Department

#### Academic Services as a Student at UCSD

07-08/2007	Instructor for ECE103, UCSD: Fundamentals of Devices and Materials. <i>CAPE (Course and Professor Evaluation) Rating:</i> Recommend professor (91%); Recommend course (86%).
9/2003-12/2005	Teaching Assistant, ECE, UCSD for: (1) Fundamentals of Devices and Materials (ECE103: Summer04, Fall04, Winter05, Summer05), (2) Microelectronics Laboratory (ECE136L: Fall05), (3) Introduction to Electrical Engineering I (ECE20A: Spring04, Fall04). (4) Fundamentals of Electrical Engineering. (ECE53A&B: Fall03, Winter04, Spring05).
04/2005-12/2006	Lead teaching assistant consultant (TAC) for Sciences and Engineering, Center of Teaching and Development, UCSD.
05/31/2006	Guest speaker for ECE87 (Micro/Nano Electronics Seminar) “Graduate school, things to consider”.
02/21/2007	Guest speaker for ECE87 (Micro/Nano Electronics Seminar) “Graduate school, things to consider”.
09/2007-07/2008	Organizer of the IMAPS San Diego Chapter monthly meetings

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09/2006-08/2008	Head Teaching Assistant for ECE, UCSD.
09/2006-08/2008	Member of the Academic Dishonesty Hearing Board, UCSD: Representative of the Jacobs School of Engineering and Graduate Student Association.
03/15/2008	Keynote graduate student speaker in <i>ECE</i> graduate student recruitment dinner.

**Session Chair**

- 2019 US-South Korea Nanotechnology Forum, chair of two sessions, and report drafter.
- AIMES 2018 Electrochemical Society Meeting, session “Semiconductors, Dielectrics, and Metals for Nanoelectronics”
- 60<sup>th</sup> Electronic Materials Conference, 2018 session “Electronic Materials for Biological Applications”.
- 232<sup>nd</sup> 2017 ECS Meeting, session D1, “Semiconductors, Dielectrics, and Metals for Nanoelectronics 15: In Memory of Samares Kar”.
- The 15<sup>th</sup> International Conference on Advanced Materials, 2017 Symposium C7, “Advances in Semiconductor Nanowires: Growth, Theory, Characterisation, Processing and Devices”.
- 59<sup>th</sup> Electronic Materials Conference, 2018 session “Electronic Materials for Biological Applications”.
- 58<sup>th</sup> Electronic Materials Conference, 2017 session “Contacts for Semiconductor Devices”.
- 57<sup>th</sup> Electronics Materials Conference, 2015: Symposium on “Contacts for Semiconductor Devices”.
- 226<sup>th</sup> Electrochemical Society Meeting, 2014: Symposium on “Semiconductors, Dielectrics, and Metals for Nanoelectronics”.
- 56<sup>th</sup> Electronic Materials Conference, 2014: “Contacts to Semiconductor Growth on Si Substrates and Si-Based Heterojunctions”.
- 224<sup>th</sup> Electrochemical Society Meeting, 2013: Symposium on “Semiconductors, Dielectrics, and Metals for Nanoelectronics”.
- 222<sup>nd</sup> ECS Meeting, 2012: Symposium on “Low-Dimensional Nanoscale Electronic and Photonic Devices”.
- 9<sup>th</sup> International Workshop on Epitaxial Semiconductors and Novel Index Surfaces 2012: Transport symposium.
- TMS 2012: Symposium on “Mechanical properties related to interface physics”.
- SPIE 2010: “Nanoepitaxy/Nanoheteroepitaxy: Novel characterization of materials and growth properties”.
- 218<sup>th</sup> ECS Meeting, 2010: Symposium on “SiGe, Ge, and related compounds: materials, processing, and devices”.
- SPIE 2009: “Toward single photon and single electron nanodevices”.

**Program Committee Member**

- Program committee member, 2018 ECS symposium on “Semiconductors, Dielectrics, and metals for Nanoelectronics”.
- Committee member of the Electronics Materials Conference, 2017 – 2020.
- Program committee member, 228<sup>th</sup> ECS symposium on “Semiconductors, Dielectrics, and metals for Nanoelectronics”.
- Invited Organizer, 57<sup>th</sup> Electronics Materials Conference, 2015; symposium “Contacts for Semiconductor Devices”.
- Organizer: Fall 2015 MRS meeting; symposium “Synthesis and Applications of Nanowires and Hybrid 1D-0D/2D/3D Semiconductor Nanostructures”.
- Program committee member: SPIE 2010-2015: “Nano Epitaxy symposium”.

**Reviewer**

Advanced Materials, Advanced Energy Materials, Advanced Functional Materials, Advanced Technology Materials, Applied Physics Letters, Applied Surface Science, European Physics Letters, IEEE Electron Device Letters, IEEE Transactions on Electron Devices, IEEE Transactions on Nanotechnology, IET Circuits Devices & Systems, Journal of American Chemical Society, Journal of Applied Physics, Journal of Electronic Materials, Journal of Materials Research, Journal of Physical Chemistry, Journal of Vacuum Science and Technology, Langmuir, Materials Chemistry and Physics, Materials Research Letters, Materials Science and Engineering B, Microporous and Mesoporous Materials, Nano Letters, Nanoscale, Nature Communications, Nature Nanotechnology, Photonics Technology Letters, Small, Science and Technology of Advanced Materials, Scientific Reports.

**Grant And Facility User Proposal Reviewer**

National Institute of Health, multiple programs  
National Science Foundation, multiple divisions and directorates  
Department of Energy, Basic Energy Sciences program.  
NASA EPSCoR Program  
NASA Postdoctoral Fellowship program.  
Kuwait-MIT Center for Natural Resources and the Environment  
Center for Integrated Nanotechnologies, Los Alamos and Sandia National Laboratories

**Patents:**

1. Nanowire Photodetector and Image Sensor with Internal Gain, United States Patent, 9,024,295 B2, D. Wang, C. Soci, Y.-H. Lo, A. Zhang, D. Aplin, L. Wang, S. Dayeh, and X.Y. Bao, March 11, 2013.
2. Monolithic thin film elements and performance electronics, solar powered systems and fabrication, United States Patent Application 15/556,542, S. A. Dayeh, United States Provisional Patent, S. A. Dayeh, J. Buckwalter, N. Park, S. Vishniakou, A. Tanaka, and C. Levi.
3. Flexible Penetrating Cortical Multielectrode Array and Manufacturing Methods Thereof, International Patent Application # US Patent 10,856,764, S. A. Dayeh and F. Azzazy.
4. Addressable High-Density 3D Neural Probe Array and Fabrication Methods, United States Provisional Patent, S. A. Dayeh, R. Chen, R. Liu, S. H. Lee, Y. G. Ro, A. Tanaka, and Y. Hwang.
5. Solid-State Wafer Bonding of Functional Materials on Substrates and Self-Aligned Contacts, International Patent Application WO2016073460, S. A. Dayeh, and R. Chen.
6. Sharp, Vertically Aligned Nanowire Electrode Arrays, High-Yield Fabrication and Intracellular Recording, United States Patent Application, S. A. Dayeh and R. Liu.
7. Porous Platinum Nanorod Electrode Array Flexible Sensor Devices and Fabrication, S. A. Dayeh and M. Ganji, WO2020097305A1.
8. Scalable, thin, and stylet-guided high density depth probe for intracranial recording and stimulation, United States Patent Application, S. A. Dayeh and Y. G. Roo.
9. Intrinsically tunable and ultra-linear multi-Fin MOS HEMT Devices, United States Patent Application, S. A. Dayeh, W. Choi, and R. Chen. WO 2019/089727 A1, allowed as of 9/3/2021.
10. Multi-thousand Channel Electrode Electrophysiological Array And Fabrication, S. A. Dayeh, Y. Tchoe, and A. M. Bourhis. OIC 2021-314.
11. Tactile Sensor Array on Flexible Substrate with Piezoelectric TFT, S. A. Dayeh and H. Oh. OIC 2022-020.
12. Method for displaying cortical activity directly on the cortical surface, S. A. Dayeh, Y. Tchoe, J. Yang, A. Paulk, and S. Cash OIC 2022-146.
13. Microelectrode Grid with a Circular Flap for Continuous Intraoperative Neuromonitoring, S. A. Dayeh, Y. Tchoe, and A. Raslan OIC 2022-119.

**Selected press highlights**

1. 2007, Electrical Engineering Graduate Student Racks Up Awards, <https://jacobsschool.ucsd.edu/news/release/658> [also at IEEE The Institute newsletter, July 6, 2007; Photonics Today, May 21, 2007: [Grad Student Recognized for Nanowire Work](#); Eurekalert, May 14, 2007: [UC San Diego Electrical Engineering Grad Student Racks up Awards](#)].
2. 2010, Los Alamos National Laboratory, [Lab selects Distinguished Postdoctoral Fellows](#).
3. 2011, Los Alamos National Laboratory PADSTE Science Highlights, Mar. 23, 2011: [Shadi Dayeh and Cristiano Nisoli receive Postdoctoral Distinguished Performance Awards](#).
4. 2013, [Improving Lithium-Ion Batteries with Nanoscale Research Between UC San Diego and the National Labs](#). [also IEEE Spectrum, [Band-Gap Engineering of Nanowires Could Boost Batteries](#); New Energy and Fuel, [Nano Scale Electrode Architectures for Lithium Ion Batteries](#)].
5. 2017, ‘Neuron-reading’ Nanowires Could Accelerate Development of Drugs to Treat Neurological Diseases, [https://ucsdnews.ucsd.edu/pressrelease/neuron\\_reading\\_nanowires\\_could\\_accelerate\\_drug\\_development\\_to\\_treat\\_disease](https://ucsdnews.ucsd.edu/pressrelease/neuron_reading_nanowires_could_accelerate_drug_development_to_treat_disease)
6. 2017, Transistor Contacts in the Making: Live Atomic Scale Dynamics, <https://jacobsschool.ucsd.edu/news/release?id=2237>; video highlight <https://www.youtube.com/watch?v=EUegQrZuKMI>
7. 2017, New Brain Mapping Tool Produces Higher Resolution Data During Brain Surgery, [https://ucsdnews.ucsd.edu/pressrelease/new\\_brain\\_mapping\\_tool\\_produces\\_higher\\_resolution\\_data\\_during\\_brain\\_surgery](https://ucsdnews.ucsd.edu/pressrelease/new_brain_mapping_tool_produces_higher_resolution_data_during_brain_surgery) [also GE Reports, 5 Coolest Things on Earth This Week: “It’s A Brain Wrap” <http://www.gereports.com/5-coolest-things-earth-week-10/>; Innovator’s Magazine: “Giving brain surgeons a helping hand” <https://www.innovatorsmag.com/giving-brain-surgeons-a-helping-hand/>; Science and Enterprise: “High-Resolution Surgical Brain Monitor Demonstrated” <http://sciencebusiness.technewslit.com/?p=30937>
8. 2018, GaN ‘Tangos’ With Silicon To Overcome Material Limitations, <https://bit.ly/387Urgd>
9. 2018, Researchers Develop New Thin Transparent and Lightweight Touchscreen Pressure Sensor Arrays, <https://bit.ly/3FtvGY7>
10. 2018, UC San Diego electrical engineering professor Shadi Dayeh honored for compound semiconductor research [http://jacobsschool.ucsd.edu/news/news\\_releases/release.sfe?id=2549](http://jacobsschool.ucsd.edu/news/news_releases/release.sfe?id=2549)
11. 2019, Three UC San Diego Researchers Receive Top Honors with NIH Director’s Awards <https://ucsdnews.ucsd.edu/pressrelease/three-uc-san-diego-researchers-receive-top-honors-with-nih-directors-awards>
12. 2021, Based on Customized Brain Maps Improve Cancer Surgeries and Epilepsy Treatments <https://ucsdnews.ucsd.edu/feature/customized-brain-maps-improve-cancer-surgeries-and-epilepsy-treatments>
13. 2021, UC San Diego Leads a \$12.25 Million Grant to Improve Epilepsy Treatment <https://ucsdnews.ucsd.edu/pressrelease/uc-san-diego-leads-a-12.25-million-grant-to-improve-epilepsy-treatment>
14. 2022, New sensor grids record human brain signals in record-breaking resolution, <https://jacobsschool.ucsd.edu/news/release/3393>
15. 2022, A new brain-computer interface with flexible backing, <https://jacobsschool.ucsd.edu/news/release/3417>

## Research Grants

Title	Granting agency	Amount of total award (include indirect costs)	Time period of contract/grant	Role (e.g. PI, co-investigator, project leader, etc.) List co-PIs/corresponding share of total award (total must = 100%)
Electron Spin	LANL	\$1.025M	09/01/2009 – 09/01/2012	Co-investigator (10%). Wrote



Injection, Transport, and Detection in Semiconductor Nanowires				proposal and co-led project with S. T. Picraux
One dimensional nanomaterials for enhanced solar conversion	LANL	\$1.025M	09/01/2009 – 09/01/2012	Co-investigator (10%). Co-wrote proposal and led project with S. T. Picraux.
Assessment of Silicon Nanowire Architecture for PV Application	DOE	\$1.049M	11/01/2009 – 03/06/2012	Co-investigator (10%). Proposed research idea that was the foundation for the project. Co-led project with S. T. Picraux
High Density Neural Recording Using Nanowire Capacitor Sensors	LANL	\$1.074M	09/01/2010 – 09/01/2013	PI (100 %). Project Leader
Minority carrier devices based on concentric nanowires: Theory and Experiment	LANL	\$300K	02/01/2012 – 02/01/2014	PI (100 %). Project Leader
3-D Nanowire Heterostructures from Earth Abundant Materials by Low-cost Fabrication Process for High-efficiency Photoelectrochemical Hydrogen Generation	NSF-CMMI	\$297.6K	08/01/2012 – 07/31/2015	PI (100%). Took project leadership and responsibility on 7/1/2014 after Prof. Deli Wang, who conceived, wrote submitted, and was awarded this grant, separated from UCSD.
Multi-Contact MultiModality 3D Micropillar Arrays	CBAM-UCSD	\$30K	12/1/2013 – 11/30/2014	PI (100 %). Project Leader
Bio-Compatible Electro-Fluidic Neural Interfaces for Mapping the Brain ( <b>Continued</b> )	NSF-ECCS	\$400 K	01/01/2014 – 12/31/2018	PI (100 %). Project Leader
Active Biocompatible Multifunctional and Implantable Neural Probes	CBAM-UCSD	\$30K	07/01/2014 – 6/30/2015	PI (100 %). Project Leader
Neural Interface Realization Through In-Vivo Validation ( <b>previously omitted</b> )	CBAM-UCSD	\$30K	07/01/2014 – 6/30/2015	Co-PI 25% with PI Gilja (50%) and Khraiche (25%)
High density, low	CBAM-UCSD	\$21.5K	07/01/2014 – 06/30/2016	Co-PI (50%) with Co-PI Gilja

impedance PEDOT:PSS electrodes on clinical platforms for animal and human neuronal recording and stimulation (CHBAM Pilot) <b>(previously omitted)</b>				(50%) and Halgren (0%)
High Density, Flexible, and Bio-compatible 3D Optogenetic Neural Interfaces	Calit2 CSRO	\$50K	07/16/2014 – 07/05/2015	PI (100%). Project Leader
Correlated In-Situ TEM Studies on Metal-alloy/III-V Nanoscale Contact Interactions and Properties	NSF-DMR	\$390K	09/15/2015 – 08/31/2018	PI (100%). Project Leader
NNCI: San Diego Nanotechnology Infrastructure (SDNI) <b>(previously omitted)</b>	NSF-ECCS	\$5.5M	09/15/2015 – 08/31/2021	Co-I (% share unknown; Dayeh contributed Figure and text for bio-interfaces section in the grant)
Dimensional touch – pressure-sensitive touchscreens for mobile applications	NSF-i-Corps	\$50K	09/15/2015 – 03/14/2016	PI (100%). Project Leader
Microdevice mediated functional brain imaging with high temporal and spatial resolution	NIH-NEI (brain initiative)	\$465K	09/30/2016 – 07/31/18	Co-PI (45%). Device integration for implantation
Multi-modal Nanoscale Cellular Probes	UC Lab Fees Research Program	\$135K	01/01/2017 – 12/31/2018	PI (100%) Project Leader
Exploiting superior electrochemical characteristics of scaled PEDOT:PSS microelectrode arrays for high fidelity electrocorticography	NSF-ECCS	\$100K	07/01/2017 – 06/30/2018	PI (100%). Project Leader

Monolithically integrated high-power GaN devices and Si CMOS circuits for high frequency and high power conversion	NSF-ECCS	\$360K	08/01/2017 – 07/31/2020	PI (100%). Project Leader
SNM: Scalable Nanomanufacturing of Fab Compatible High-Density Nanowire Arrays for High-Throughput Drug Screening	NSF-CMMI	\$1.5M	09/01/2017 – 08/30/2021	PI (50%) Project Leader; Co-PI Cauwenberghs (20%), Co-PI Lo (5%), Co-PI Frazer (25%)
Micro-topography of Human Cortical Functional Organization for Language	UCSD-CBAM	\$50K	01/01/2018 – 12/31/2019	Co-PI (50%) with Halgren (50%)
Admin Supplement; Microscopic foundation of multimodal human imaging (Continued)	National Institute of Health	\$71.4K	4/10/2018 – 9/30/2019	Co-I Dayeh (100%) portion on 3R01MH111359 - 02W1 PIs Anna Devor and Andres Dale
Radio Frequency RF Tuning Element	Air Force	\$50K	06/01/2018 – 12/31/2018	Joint SBIR with MaXentric Co-PI (84%), with Asbeck (16%), and Yu (0%)
Galvanizing Engineering in Medicine: Next-Generation Spinal Cord Neuro-Electronic Interface Implant for the Potential Treatment of Paralysis	UCSD CTRI & IEM	\$60K	07/01/2018 – 12/31/2019	PI (80%) with Co-PI Marsala (15%), Co-PI Gilja (5%), Co-PI Ciacci (0%) and Co-PI Halgren (0%)
Dissecting the neural control of fine movements: Novel high density arrays for spinal recording and behavioral quantification	Kavli Innovative Research Grant (IRG)	\$50K	07/01/2018 – 09/30/2019	Co-PI (50%) with Azim (50%)

Radio Frequency RF Tuning Element (SBIR Ph II) (NEW)	Air Force	\$430K	09/01/2019 – 08/31/2021	Joint SBIR with MaXentric. PI (100%), with Asbeck as Co-I.
P-Type GaN Doping by Controlled Magnesium Diffusion (NEW)	ARPA-E	\$65K	05/01/2019 – 04/29/2020	PI (100%)
Monolithically Integrated High-Power GaN Devices .../Supplement (NEW)	NSF-ECCS	\$27K	05/23/2019 – 07/30/2020	PI (100%)
Bringing Light to Functional Mapping in Resective Neurosurgery (NEW)	NIH	\$2.37M	09/15/2019 – 01/30/2024	PI (100%)
SNM: Scalable Manufacturing of Fab.../Supplement (NEW)	NSF-CMMI	\$63K	02/23/2020 – 06/30/2021	PI (100%)
IUCRC Phase I University of California San Diego: Center for Power Management Integration (PMIC) (NEW)	NSF	\$375k	06/01/2021 – 05/31/2026	Co-PI (5%), PI Mercier, Co-PI Le, Co-PI, Co-PI Tajana Rosing
MsRI-EW: Workshop for Clinical Translation of Implantable Devices. To be Held Virtually, August 10-12, 2020. (NEW)	NSF	\$49.981k	07/01/2020-06/20/2021	PI (100%), Co-PI Halgren, Co-PI Khalessi, Co-PI Kalichman
Thin, High-Density, High-Performance, Depth and Surface Microelectrodes for Diagnosis and Treatemnt of Epilepsy (NEW)	NIH	\$12.25M	06/09/2021-8/31/2026	PI (60%), multiple co-I, site PI Raslan at OHSU, site PI Cash at MGH

Integration of High Definition Display Technologies with Platinum Nanorod Microelectrodes for Large Scale in-vivo Recording and Stimulation (NEW)	NIH	\$2.012M	06/10/2021-8/31/2024	PI (64%), with co-I Galton and co-I Devor of Boston University
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## Academic Services at UCSD:

### Classes taught at UCSD

Course # and Title	Quarter	#Enrolled	% Recommend	Instructor
ECE135B: Electronic Devices	SP17	11	100%	
ECE136L: Microelectronics Laboratory	WI17	33	92.9%	
ECE135B: Electronic Devices	SP16	18	100%	
ECE136L: Microelectronics Laboratory	WI16	20	100%	
ECE236A: III-V Compound Semiconductor Materials FA15		12	93.3%	
ECE135B: Electronic Devices	SP15	27	100%	
ECE136L: Microelectronics Laboratory	WI15	22	86%	
ECE103: Fundamentals of Devices and Materials	WI15	85	100%	
ECE236A: III-V Compound Semiconductor Materials FA14		16	84%	
ECE135B: Electronic Devices	SP14	11	83%	
ECE136L: Microelectronics Laboratory	WI14	8	n/a	
ECE103: Fundamentals of Devices and Materials	FA13	91	76%	
ECE135B: Electronic Devices	SP13	7	100%	

ECE135B: Electronic Devices. *In depth treatment of basic semiconductor devices including solar cells, MOS CAP, MISFETs and BJTs.*

ECE103: Fundamentals of Devices and Materials. *Introduction to electronic materials, current transport, and basic semiconductor device operation.*

ECE136L: Microelectronics Laboratory. *Principles of semiconductor device processing, the fabrication and characterization of Si-based diodes, MOSFETs, MOS Caps, and III-V LEDs.*

ECE236A: Semiconductor Heterostructure Materials. *Graduate level course on heterostructures bandoffsets and measurements, epitaxy techniques and mechanisms, strain and strain relaxation in heterostructure materials, influence of strain on band-structure, quantum wells and their band structures, two-dimensional electron gas, nN and pN heterostructures, tunnel and quantum transport, nitrides.*

## Publications

**Journal Papers:** 107 refereed journal papers, h-index=45, # of citations > 10,730 (Google Scholar)

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2. X. Zhou, S. A. Dayeh, D. Aplin, D. Wang, and E. T. Yu, "Direct Observation of Ballistic and Drift Carrier Transport in InAs Nanowires," *Applied Physics Letters*, Vol. 89, No. 5, (July 2006), pp. 053113-3.
3. X. Zhou(\*), S. A. Dayeh(\*) , D. Aplin, D. Wang, and E. T. Yu, "Scanned Electrical Probe Characterization of carrier transport behavior in InAs Nanowires," *Journal of Vacuum Science and Technology B*, Vol. 24, (July 2006), pp. 2036-2036-5. (\*) Equal contribution
4. B. Xiang, P. Wang, X. Zhang, S. A. Dayeh, D. P. R. Aplin, C. Soci, D. Yu, and D. Wang, "Rational Synthesis of P-type ZnO Nanowire Arrays using Simple Chemical Vapor Deposition," *Nano Letters*, Vol. 7, No. 2, (January 2007), pp. 323-328.
5. S. A. Dayeh, D. Aplin, X. Zhou, P. K. L. Yu, E. T. Yu, and D. Wang, "High Electron Mobility Indium Arsenide Nanowire Field Effect Transistors," *Small*, Vol. 3, No. 2, (February 2007), pp. 326-332.
6. S. A. Dayeh, C. Soci, P. K. L. Yu, E. T. Yu, and D. Wang, "Influence of Surface States on the Extraction of Transport Parameters from InAs Nanowire Field Effect Transistors," *Applied Physics Letters*, Vol. 90, No. 16, (April 2007), pp. 162112-162112-3
7. C. Soci, A. Zhang, B. Xiang, S. A. Dayeh, D. Aplin, J. Park, X. Bao, Y.-H. Lo, and D. Wang, "ZnO Nanowire UV Photodetectors with High Internal Gain," *Nano Letters*, Vol. 7, No. 4, (April 2007), pp. 1003-1009.
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9. X. Zhou, S. A. Dayeh, D. Wang, and E. T. Yu, "Analysis of local carrier modulation in InAs semiconductor nanowire transistors," *Journal of Vacuum Science and Technology B*, Vol. 25, (July 2007), pp. 1427-1427-5.
10. S. A. Dayeh, E. T. Yu, and D. Wang, "III-V Nanowire Growth Mechanism: V/III Ratio and Temperature Effects," *Nano Letters*, Vol. 7, No. 8, (July 2007), pp. 2486-2490.
11. S. A. Dayeh, C. Soci, E. T. Yu, and Deli Wang, "Transport Properties of InAs Nanowire Field Effect Transistors: Effects of Surface States," *Journal of Vacuum Science and Technology B*, Vol. 25, No. 4, (August 2007), pp. 1432-1432-5.
12. S. A. Dayeh, E. T. Yu, and D. Wang, "Growth of InAs Nanowire on SiO<sub>2</sub> substrates: Nucleation, Evolution, and Role of Au Nanoparticles," *Journal of Physical Chemistry C*, Vol. 111, No. 36, (August 2007), pp. 13331-13336.
13. S. A. Dayeh, E. T. Yu, and Deli Wang, "Excess Indium and Substrate Effects on the Growth of InAs Nanowires," *Small*, Vol. 3, No. 10, (September 2007), pp. 1683-1687.
14. X. Bao, C. Soci, D. Susac, J. Bratvold, D. P. R. Aplin, W. Wei, C.-Y. Chen, S. A. Dayeh, K. L. Kavanagh, and D. Wang, "Heteroepitaxial Growth of Vertical GaAs Nanowires on Si(111) Substrates by Metal Organic Chemical Vapor Deposition," *Nano Letters*, Vol. 8, No. 11, (October 2008), pp. 3755-3760.

15. S. A. Dayeh, D. Susac, K. L. Kavanagh, E. T. Yu, and D. Wang, "Field Dependent Transport Properties in InAs Nanowire Field Effect Transistors," *Nano Letters*, Vol. 8, No. 10, (September 2008), pp. 3114-3119.
16. S. A. Dayeh, P. Chen, Y. Jing, E. T. Yu, D. Wang, and S. S. Lau, "Integration of Vertical InAs Nanowire Arrays on Insulator-on-Si for Electrical Isolation," *Applied Physics Letters*, Vol. 93, No. 20, (November 2008), pp. 203109-203109-3.
17. S. A. Dayeh, E. T. Yu, and D. Wang, "Transport Coefficients of InAs Nanowires as a Function of Diameter," *Small*, Vol. 5, No. 1, (November 2008), pp. 77-81.
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19. S. A. Dayeh, E. T. Yu, and D. Wang, "Surface Diffusion and Substrate – Nanowire Adatom Exchange in InAs Nanowire Growth," *Nano Letters*, Vol. 9, No. 5, (April 2009), pp. 1967-1972.
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21. S. A. Dayeh, D. Susac, K. L. Kavanagh, E. T. Yu, and D. Wang, "Structural and Electrical Properties of Zinc Blende and Wurtzite InAs Nanowires," *Advanced Functional Materials*, Vol. 19, No. 13, (May 2009), pp. 2102-2018.
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26. S. T. Le, P. Jannaty, A. Zaslavsky, S. A. Dayeh, and S. T. Picraux, "Growth, Electrical Rectification, and Gate Control in axial In Situ doped p-n Junction Germanium Nanowires," *Applied Physics Letters*, Vol. 96, No. 26, (June 2010), pp. 262102-262102-3.
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33. S. A. Dayeh, J. Wang, N. Li, J. Y. Huang, A. V. Gin, and S. T. Picraux, "Growth, Defect Formation and Morphology Control of Germanium-Silicon Semiconductor Nanowire Heterostructures," *Nano Letters*, Vol. 11, No. 10, (August 2011), pp. 4200-4206.
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37. M.-A. Seo, S. A. Dayeh, P. Upadhyaya, J. Martinez, B. S. Swartzentruber, S. T. Picraux, A. J. Taylor, and R. P. Prasankumar, "Understanding Ultrafast Carrier Dynamics in Single Quasi-one-Dimensional Si Nanowires," *Applied Physics Letters*, Vol. 100, No. 7, (February 2012), pp. 071104-071104-5.
38. A. Mohite, D. E. Perea, S. Singh, S. A. Dayeh, I. H. Campbell, S. T. Picraux, and H. Htoon, "Highly Efficient Charge Separation and Collection Across in-situ Doped Axial VLS-grown Si Nanowire p-n Junctions," *Nano Letters*, Vol. 12, No. 4, (March 2012), pp. 1965-1971.
39. W. Tang, S. A. Dayeh, S. T. Picraux, J. Y. Huang, and K.-N. Tu, "Ultrashort Channel Silicon Nanowire Transistor with Nickel Silicide Source/Drain Contacts," *Nano Letters*, Vol. 12, No. 8, (June 2012), pp. 3979-3985.
40. S. A. Dayeh, X. Liu, X. Dai, J. Y. Huang, S. T. Picraux, and C. Soci, "Rocking Chair Defect Generation in Nanowire Growth," *Applied Physics Letters*, Vol. 101, No. 5, (August 2012), pp. 053121-1 - 053121-3.



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43. M.-A. Seo, J. Yoo, S. A. Dayeh, S. T. Picraux, A. J. Taylor, and R. P. Prasankumar, "Mapping Carrier Diffusion in Single Silicon Core-shell Nanowires with Ultrafast Optical Microscopy," *Nano Letters*, Vol. 12, No. 12, (November 2012), pp. 6334-6338.
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45. S. Zhang, S. A. Dayeh, Y. Li, S. A. Crooker, D. L. Smith, and S. T. Picraux, "Electrical Spin Injection and Detection in Silicon Nanowires Through Oxide Tunnel Barriers," *Nano Letters*, Vol. 13, No. 2, (January 2013), pp. 430-435.
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51. W. Tang, S. T. Picraux, J. Y. Huang, X. Liu, K.-N. Tu, and S. A. Dayeh, "Gold Catalyzed Nickel Disilicide Formation: A New Solid-Liquid-Solid Phase Growth Mechanism," *Nano Letters*, Vol. 13, No. 12, (Nov. 2013), pp. 6009-6015.
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55. P. Zhang, S. T. Le, X. Hou, A. Zaslavsky, D. E. Perea, S. A. Dayeh, and S. T. Picraux, "Strong Room Temperature Negative Transconductance in an Axial Si/Ge Hetero-Nanowire Tunneling Field-Effect Transistor," *Appl. Phys. Lett.*, Vol. 105, (2014), pp. 062106-1 - 4.
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62. R. Chen and S. A. Dayeh, "Size and Orientation Effects on the Kinetics and Structure of Nickelide Contacts to InGaAs Fin Structures," *Nano Lett.*, Vol. 15, (2015), pp. 3770-3779.
63. B.-M. Nguyen, B. S. Swartzentruber, Y. Goo Ro, and S.A. Dayeh, "Facet-selective Nucleation and Conformal Epitaxy of Ge Shell on Si Nanowires," *Nano Letters*, Vol. 15, (2015), pp. 7258 – 7264.
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69. Y. Shen, R. Chen, X. Yu, Q. Wang, K. L. Jungjohann, S. A. Dayeh, T. Woo "Gibbs-Thomson Effect in Planar Nanowires: Orientation and Doping Modulated Growth," *Nano Letters* 16, 7 (June 2016) pp. 4518-5165.
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### Review and Invited Articles

1. S.A. Dayeh, "One Dimensional Semiconductor Heterostructures: Challenges and Opportunities," *ECS Transactions* 50, Honolulu, Hawaii, October 9, 2012, pp. 55-60. **invited paper.**
2. B.M. Nguyen, Y. Liu, W. Tang, S.T. Picraux, and S.A. Dayeh, "Ultra-short Channel Field Effect Transistors Based on Ge/Si Core/Shell Nanowires," *Proceedings of SPIE*, 8631, Evanston, Illinois, February 4, 2013, pp. 863118-1-863118-10. **invited paper.**
3. A. Zaslavsky, J. Wan, S.T. Le, P. Jannaty, S. Cristoloveanu, C.L. Royer, D.E. Perea, S.A. Dayeh, and S.T. Picraux, "Sharp Switching High-Current Tunneling Devices," *ECS Transactions*, 53, Toronto, Canada, May 13, 2013, pp. 63-74. **invited paper.**
4. S. A. Dayeh, W. Tang, B.-M. Nguyen, X. Ding, Y. Liu, Y. Hwang, X. Liu, and R. Chen, "Nanoscale Heterogeneous Reactions and Interfaces in Ge/Si and for III-V on Si Integrated Devices," *ECS Transactions*, Vol. 58, No. 7, 2013, pp. 115-125. **invited paper.**
5. J. Yoo, B.-M. Nguyen, S. A. Dayeh, P. Schuele, D. Evans, and S. T. Picraux, "Silicon Epitaxy in Nanoscale for Photovoltaic Applications," *SPIE Proceedings*, 9174, (2014), pp. 917407-1 – 917407-4. **invited paper.**

6. Shadi A. Dayeh, Atsunori Tanaka, Woojin Choi, and Renjie Chen, "Strain Engineered Crack-Free GaN on Si for Integrated Vertical High Power GaN Devices with Si CMOS," ECS Transactions, Vol. 75, No. 8, pp. 711 – 723, 2016. **invited paper.**
7. R. Chen, X. Dai, K. L. Jungjohann, W. M. Mook, J. Nogan, C. Soci, and S. A. Dayeh, "The Dynamics of Nickelidation for Self-Aligned Contacts to InGaAs Channels," ECE Transactions, Vol. 80, 2017, pp. 53 – 69. **invited paper.**

### **Books and Book Chapters**

1. S.T. Picraux, J. Yoo, I.H. Campbell, S.A. Dayeh, and D.E. Perea, "Semiconductor Nanowires for Solar Cells," in **Semiconductor Nanostructures for Optoelectronic Devices**, Gyu-Chul Yi, Ed., Berlin-Heidelberg: Springer, 2012, pp. 297-326.
2. S. Dayeh and S.T. Picraux, "Growth of Germanium, Silicon, and Ge/Si Heterostructure Nanowires," in **Processing, Properties, and Applications of Nanowires of Silicon and Silicides**, Pan Sanford, 2013, pp. 23-58 Book Cover.
3. B.-M. Nguyen, J. Yoo, S. A. Dayeh, P. Schuele, D. Evans, and S. T. Picraux, "Design of Radial p-i-n Si Nanowires for High Performance Solar Cells," in **The Wonder of Nanotechnology: Present and future for Optoelectronics Quantum Devices and their Applications for Environment**, M. Razeghi, L. Esaki, and K. von Klitzing, Eds., Washington: Bellingham, 2013, pp. 823-842.
4. J. Wan, J. Wan, S. Cristoloveanu, S. T. Le, A. Zaslavsky, C. L. Royer, S. A. Dayeh, D. E. Perea, and S. T. Picraux, "Sharp-Switching CMOS-Compatible Devices with High Current Drive," in **Future Trends in Microelectronics: Frontiers and Innovations**, Serge Luryi, Jimmy Xu, and Alexander Zaslavsky, Eds., Hoboken, New Jersey: John Wiley and Sons, 2013, pp. 81-92.
5. X. Dai, A. Olivier, C. Wilhelm, S. A. Dayeh, and C. Soci, "Advanced Group III-V Nanowire Growth Toward Large-Scale Integration," in **Semiconductor Nanowires: Materials, Synthesis, Characterization and Applications**, Jordi-Arbiol and Qihua Xiong, Eds., Cambridge: Elsevier, 2013, pp. 71-124.
6. Editor for ECS Transactions, vol. 64, No. 8, 2014, "Semiconductors, Dielectrics, and Metals for Nanoelectronics 12," Editors S. Kar, M. Houssa, S. Van Elshocht, D. Misra, K. Kita, D. Landheer, S. Dayeh, and H. Jagannathan.
7. A. F. i Morral, S. A. Dayeh, and C. Jagadish, Editors for the book "**Semiconductor Nanowires I: Growth and Theory (Semiconductors and Semimetals)**," Academic Press, Elsevier, 2015.
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9. R. Chen and S. A. Dayeh, "Metal-Semiconductor Compound Contacts to Nanowire Transistors," in **Nanowire Electronics**, Springer-Singapore, 2019, pp. 111-158.
10. Editor for ECS Transactions, vol. 86, no.2, 2018, "**Semiconductors, Dielectrics, and Metals for Nanoelectronics 16**," D. Misra, S. De Gendt, S. Dayeh, K. Kita.
11. Editor for ECS Transactions, vol. 92, no.2, 2019, "**Semiconductors, Dielectrics, and Metals for Nanoelectronics 17**," D. Misra, S. De Gendt, S. H. Kilgore, K. Kita, S. Dayeh, K. Kakushima

**Refereed Conference Proceedings**

1. A. Mahmood, S.A. Dayeh, D.P. Butler, and Z. Çelik-Butler, "Micromachined infrared sensor arrays on flexible polyimide substrates Sensors," *Proc. of the 2<sup>nd</sup> IEEE Int. Conf. on Sensors*, Toronto, Canada, October 22 – October 24, 2003, pp. 777-782.
  2. S.A. Dayeh, D.P. Butler, Z. Celik-Butler, and P. Wisian-Neilson, "Uncooled micromachined bolometer arrays on flexible substrates," *Proceedings of SPIE-Infrared Technology and Applications XXIX*, San Diego, CA, September 30, 2003, pp. 537-547.
  3. J. Law, S.A. Dayeh, D. Wang, and E.T. Yu, "Scanning Capacitance Characterization of Potential Screening in InAs Nanowire Devices," *Proceedings of the 8<sup>th</sup> IEEE Conference on Nanotechnology*, Arlington, TX, August 18 - 21, 2008, pp. 569-572.
  4. S.A. Dayeh, D. Susac, P. Chen, Y. Jing, K.L. Kavanagh, S.S. Lau, E.T. Yu, and D. Wang, "Optimal Control over the InAs Nanowire Growth for System Integration and their Structural and Transport Properties," *Proceedings of the 8<sup>th</sup> IEEE Conference on Nanotechnology*, Arlington, TX, August 18 - 21, 2008, pp. 576-579.
  5. S.A. Dayeh, J.Y. Huang, A.V. Gin, and S.T. Picraux, "Synthesis, Fabrication, and Characterization of Ge/Si Axial Nanowire Heterostructure Tunnel FETs," *Proceedings of the 10<sup>th</sup> IEEE Conference on Nanotechnology*, Seoul, Republic of South Korea, August 17 - 20, 2010, pp. 238-241.
  6. S.A. Dayeh and S.T. Picraux, "Axial Ge/Si Nanowire Heterostructure Tunnel FETs," *ECS Transactions*, 33, Las Vegas, NV, October 10 - 15, 2010, pp. 373-378.
  7. S.A. Dayeh and S.T. Picraux, "Ge/Si Core/Multi-shell Heterostructure FETs," *ECS Transactions*, 33, Las Vegas, NV, October 10 - 15, 2010, pp. 681-686.
  8. M.A. Seo, S.A. Dayeh, P. Upadhyaya, J. Martinez, B.S. Swartzentruber, S.T. Picraux, A.J. Taylor, and R.P. Prasankumar, "Polarization Anisotropy of Transient Carrier Dynamics in Single Si Nanowires," *2011 Conference on Lasers and Electro-Optics*, Baltimore, MD, May 3 - 5, 2011, pp. 1-2.
  9. M.A. Seo, J. Yoo, S.A. Dayeh, S.T. Picraux, A.J. Taylor, and R.P. Prasankumar, "Tracking Charge Carriers Through Space and Time in Single Silicon Core-Shell Nanowires," *2012 Conference on Lasers and Electro-Optics*, San Jose, CA, May 6 - 11, 2012, pp. 1-2.
  10. M.A. Seo, J. Yoo, D.E. Perea, S.A. Dayeh, S.T. Picraux, A.J. Taylor, and R.P. Prasankumar, "Tracking Ultrafast Carrier Dynamics in Single Semiconductor Nanowire Heterostructures," *XVIIIth International Conference on Ultrafast Phenomena*, Lausanne, Switzerland, July 8-13, 2012, EPJ Web of Conferences 41, pp. 04030-1-04030-3.
  11. W. Tang, S. T. Picraux, A. M. Gusak, K. N. Tu, and S. A. Dayeh, "Dynamical Imaging of Nickel Disilicide Nucleation and Step Flow Propagation in Defect-Engineered Si Nanowires," *226th ECS Meeting*, Oct. 5-9, 2014, Cancun, Mexico, pp. 101-108.
  12. W. Tang, S. T. Picraux, X. Liu, K. N. Tu, and S. A. Dayeh, "In-situ TEM Study on Au Mediated Growth of NiSi<sub>2</sub> in Si Nanowire: A Vapor-Liquid-Solid Analogy," *226th ECS Meeting*, Oct. 5-9, 2014, Cancun, Mexico, pp 85-90.
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13. J. Hermiz, Nick Rogers, Erik Kastner, Mehran Ganji, Daniel Cleary, Joseph Snider, David Barba, Shadi A. Dayeh, Eric Halgren, and Vikash Gilja, "A Clinic Compatible Open Source Electrophysiology System," 2016 38<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Orlando, Florida, Aug. 16 – 20, 2016.
14. W. Choi, V. Balasubramanian, P. M. Asbeck, and S. A. Dayeh, "Linearity by Synthesis: An Intrinsically Linear AlGaIn/GaN-on-Si Transistor with OIP3/(F-1)PDC of 10.1 at 30GHz," 2020 Device Research Conference (DRC), Jun. 21-24, Columbus, Ohio, 978-1-7281-7047-3/20.
15. D. Cleary, E. Halgren, S. H. Kee, A. Bourhis, Y. Tchoe, D. Siler, I. Yaylali, S. Cash, S. Han, A. Raslan, S. Ben-Haim, and S. Dayeh, "Ultra High-Density Microgrid Recordings during Awake Craniotomy Reveal Submillimeter Structure of Human Language Processing," *Journal of Neurosurgery*, (2020) Vol. 4, pp. 72.
16. J. Yang, A. Paulk, D. Cleary, B. Bahed, P. Jones, D. Cahill, E. Halgren, G. R. Cosgrove, S. Dayeh, and E. Halgren, "Novel Microelectrode Technologies Reveal Unique Electrophysiologic Dynamics in Epilepsy," *Journal of Neurosurgery*, (2020), Vol. 4, pp. 118
17. Shelley Fried, Sang Baek Ryu, Angelique C Paulk, Jimmy Yang, Mehran Ganji, Shadi Dayeh, Sydney S Cash, Seung Woo Lee, "Micro-coils confine activation to single cortical columns in V1," *Investigative Ophthalmology & Visual Science*, (2020) Vol. 60, pp. 4988

### Invited Talks

1. S.A Dayeh, "Controlling the Growth and Transport Properties of III-V Semiconductor Nanowires," *International Microelectronics and Packaging Society Monthly Meeting*, San Diego Chapter, San Diego, April 24, 2007.
2. S.A Dayeh, "Synthesis and Fabrication of III-V Semiconductor Nanowires for Electronic Applications," *Los Alamos National Laboratory*, Los Alamos, New Mexico, April 7, 2008.
3. S.A Dayeh, "Synthesis, Characterization, and Transport Properties of III-V and Si/Ge Heterostructure Nanowires: A Tutorial," *Graduate Seminar, Lebanese University, Faculty of Sciences-I*, Beirut, Lebanon, June 1, 2009.
4. S.A Dayeh, "Synthesis, Characterization, and Transport Properties of III-V and Si/Ge Heterostructure Nanowires," *Center for High Technology Materials, University of New Mexico*, Albuquerque, New Mexico, December 7, 2012.
5. S.A Dayeh, "Synthesis, Characterization, and Transport Properties of III-V and Si/Ge Heterostructure Nanowires," *Applied Materials and Technology*, San Jose, CA, November 4, 2009.
6. S.A Dayeh, "Synthesis, Characterization, and Transport Properties of III-V and Si/Ge Heterostructure Nanowires," *Stanford University*, EE Department, Stanford, California, November 4, 2009.
7. S.A Dayeh, "Advances in the Growth and Characterization of InAs Nanowires," *SPIE 2009 Meeting*, San Diego Convention Center, San Diego, CA, Aug. 4<sup>th</sup>, 2009.

8. S.A Dayeh, "IEEE, the Institute and its Electron Device Society," *Center for High Technology Materials*, University of New Mexico, Albuquerque, New Mexico, December 7, 2012. [IEEE EDS Ambassador Lecture]
9. S.A Dayeh, "Advances in the Growth and Characterization of InAs Nanowires," *ELEN 200, Graduate Engineering Seminar Series, Santa Clara University*, Santa Clara, California, November 11, 2009. [IEEE EDS Ambassador Lecture]
10. S.A Dayeh, "Fundamentals of Nanoepitaxy in groups IV and III-V Semiconductors," *SPIE 2010 Meeting*, San Diego Convention Center, San Diego, CA, August 2, 2010. [Conference Tutorial]
11. S.A Dayeh, "Synthesis and Bandgap Engineering in Ge/Si Nanowire Heterostructures," *Physics Department, Seoul National University*, Seoul, South Korea, August 16, 2010.
12. S.A Dayeh, "Synthesis and Bandgap Engineering in Ge/Si Nanowire Heterostructures," *SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University*, Suwon, Republic of South Korea, August 23, 2010.
13. S.A Dayeh, "Defect, Interface and Bandgap Engineering in Ge/Si Axial Nanowire Heterostructures," *38th Conference on the Physics and Chemistry of Semiconductor Surfaces and Interfaces (PCSI-38)*, San Diego, California, January 16, 2011.
14. S.A Dayeh, "Axial and Radial Semiconductor Heterostructure Nanowires: Fault Nucleation, Coherency Limits and Bandgap Engineered Devices," *School of Physical and Mathematical Sciences, Nanyang Technological University*, Singapore, August 15, 2012.
15. S.A Dayeh, "Axial and Radial Semiconductor Heterostructure Nanowires: Fault Nucleation, Coherency Limits and Bandgap Engineered Devices," *ECE Department, National University of Singapore*, Singapore, August 18, 2012.
16. S.A Dayeh, "Synthesis and Defect Control in Bandgap Engineered Ge/Si Nanowire Devices," *Materials Science and Engineering, Stanford University*, October 24, 2011.
17. S.A Dayeh, "Synthesis and Defect Control in Bandgap Engineered Ge/Si Nanowire Devices," *Molecular Foundry, Lawrence Berkeley National Laboratory*, October 31, 2011.
18. S.A Dayeh, "Understanding Fault Nucleation and Propagation in Axial and Radial Heterostructure Nanowires," *International Symposium on Plasticity and Its Current Applications*, San Juan, Porto Rico, January 3-8, 2012.
19. S.A Dayeh, "Defect, Interface Engineering, and Structure-Transport Correlation in InAs and Ge/Si Semiconductor Nanowires," *2012 TMS Annual Meeting & Exhibition*, Orlando, Florida, March 12, 2012.
20. S.A Dayeh, "Axial and Radial Semiconductor Nanowire Heterostructures: Fault Nucleation, Coherency Limits and Bandgap Engineered Devices," *9th International Workshop on Epitaxial Semiconductors on Patterned Substrates and Novel Index Surfaces (ESPS-NIS) 2012*, Eindhoven Technical University, Netherlands, May 8, 2012.

21. S.A Dayeh, "Defects and Charge Transport in Nanowire Heterostructures," *6<sup>th</sup> Nanowire Growth Workshop*, St. Petersburg, Russia, June 4, 2012.
22. S.A Dayeh, "One Dimensional Semiconductor Heterostructures: Challenges and Opportunities," *Electrochemical Society Meeting*, Honolulu, Hawaii, October 9 2012.
23. S.A Dayeh "One Dimensional Semiconductor Heterostructures: Challenges and Opportunities," *Qualcomm*, San Diego, CA, August 14, 2012.
24. S.A Dayeh, "One Dimensional Semiconductor Heterostructures for Electronics and Biosensors," *8th Annual IEEE SF Bay Nanotechnology Council Fall Symposium, Nanovation: From Science to Startups*, UC Berkeley, October 27, 2012.
25. S.A Dayeh, "Engineered Substrates for Electronics and Bio-Interfaces," *ECE 296 Seminar*, UC San Diego, November 16, 2012.
26. S.A Dayeh, "Nanoscale Heterogeneous Reactions and Interfaces in Ge/Si and for III-V on Si Integrated Devices," *224<sup>th</sup> ECS Meeting*, San Francisco, CA, October 28, 2013.
27. S.A Dayeh, "Nanoscale Heterogeneous Reactions and Interfaces in Ge/Si and for III-V on Si Integrated Devices," *IBM Watson Research Center*, December 16, 2013.
28. S.A Dayeh, "Material Heterointegration at Multiple Scales for Energy Applications," *Engineers for a Sustainable World Annual Meeting*, San Diego, CA, April 9, 2014.
29. S.A Dayeh, "Bio- and CMOS-compatible 3D Platforms for Neural Interfaces," *CMOS Emerging Technologies Research*, Grenoble, France, July 8, 2014.
30. S.A Dayeh, "Compound and Alloyed Contacts to Ge/Si and InGaAs Nanowires and FinFETs," *SPIE Meeting*, San Diego, CA, Aug. 17-21, 2014.
31. S.A Dayeh, "Nickel Compound and Alloy Contacts to Nanoscale Si, Ge, and InGaAs Channels," *Solid State Devices and Materials (SSDM2014)*, Tsukuba, Japan, Sept. 8-11, 2014.
32. S.A Dayeh, "Heterointegration Technologies for Advanced 3D Neural Interfaces," *226th Electrochemical Society Meeting*, Cancun, Mexico, Oct. 5-10, 2014.
33. S.A Dayeh, "3D Penetrating Neuronal Probes on Insulating and Flexible Substrates for Brain Mapping," *Functional Nanomaterials Workshop*, King Abdullah University of Science and Technology, Jeddah, Saudi Arabia, Mar. 14-17, 2015.
34. S.A Dayeh, "Scalable Nanowire Technologies for Physiological Interfaces," *Seminar at the Solid State Physics Department*, Lund University, Sweden, June 3, 2015.
35. S.A Dayeh, "Nanoscale Solid State Devices for Physiological Interfaces," *Seminar at SABIC*, Pittsfield, Massachusetts, June 20, 2015.

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36. S.A Dayeh, "Nanoscale Electronic Materials for Neurophysiological Interfaces," *IEEE Nanotechnology Materials and Devices Conference*, Anchorage, Alaska, Sept. 15, 2015.
37. S.A Dayeh, "Probing Greater Details in Brain Activity with Smaller Nanowire Probes," *Neurotechnology Research in San Diego*, Sanford Burnham Consortium, San Diego, California, Sept. 19, 2015.
38. S.A Dayeh, "Scalable Nanowire Technologies for Physiological Interfaces," *Applied Physics Colloquium at Harvard John A. Paulson School of Engineering*, Harvard University, MA, Nov. 13, 2015.
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39. S.A Dayeh, "Nanowire Arrays Probe Inner Potentials of Human Stem cell Derived Neurons", Korea University, South Korea, Feb. 1, 2016.
40. S.A Dayeh, "Flexible Conformal and Minimally Invasive 1D Electrodes", UCSD Center for Multiscale Imaging of Brain Function Mini-Symposium, Mar. 24, 2016.
41. S.A Dayeh, "Compact High-Performance Wearable Electronics with Integrated Energy Harvesting," Center for Wearable Sensors Summit, UCSD, May 14, 2016.
42. S.A Dayeh, "Integrated Flexible Technologies for Wearable and Cortical Implants," Institute for Materials Science, Los Alamos National Laboratory, Aug. 11, 2016.
43. S.A Dayeh, "Strain Engineered Crack-Free GaN on Si for Integrated Vertical High Power GaN Devices with Si CMOS", Electrochemical Society Prime 2016 Meeting, Hawai'i Convention Center, Hawai'i, Oct. 4, 2016.
44. S.A Dayeh, "High Density Individually Addressable Nanowire Arrays for Intracellular Mapping of Neuronal Activity" Electrochemical Society Prime 2016 Meeting, Hawai'i Convention Center, Hawai'i, Oct. 4, 2016.
45. S.A Dayeh, "1D Probes in Neurophysiology: From Cell Culture to Mapping Intact Brains", 2016 Fall Materials Research Society Meeting, Hynes Convention Center, Boston, MA, 2016.
46. S.A Dayeh, "Integrated Flexible Technologies for Wearables and Cortical Implants", Department of Chemistry and Biochemistry, Cal State Long Beach, 2017.
47. S.A. Dayeh, "The Dynamics of Nickelidation for Self-Aligned Contacts to InGaAs Channels," 232<sup>nd</sup> Electrochemical Society Meeting, National Harbor, Maryland, 2017.
48. S.A. Dayeh, "Engineering Devices for Clinical Neurophysiology," 2018 Spring Materials Research Society Meeting, Phoenix, AZ, 2018.
49. S.A. Dayeh, "Nanowires for Clinical Translation for Brain Mapping and Drug Screening Applications," 2018 Nanowire Week, Hamilton, Ontario, Canada, June 11-15, 2018.
50. S. A. Dayeh, "Scalable and Minimally Invasive Technologies for Recording Surface Units and Intracellular Potentials at Depth in Intact Brains," Caltech Human Single Neuron Conference, Caltech, Pasadena, Nov. 1-2, 2018.

51. S. A. Dayeh, "Development and Clinical Implications of Minimally Invasive Neurotechnologies," 2018 Center for Wearable Sensors Research Summit, UC San Diego, Nov. 7, 2018.
52. S. A. Dayeh, "New Electrode Materials for Thin and Minimally Invasive Clinical Neural Interfaces," Blackrock Microsystems, Salt Lake City, Utah, Nov. 29, 2019.
53. S. A. Dayeh, "Microelectrodes for Large-Scale Clinical Mapping: Considerations and some Solutions," IEEE EMBS Neural Engineering Research Conference, San Francisco, March 22, 2019.
54. S. A. Dayeh, "Microelectrode Arrays for Large Scale Clinical Mapping: Electrochemical and Density Considerations, IEEE Nanotechnology Conference, Macao, June 26, 2019.
55. S. A. Dayeh, "Bioelectronic Interfaces with the Human Nervous System," The Vi Technical Club, San Diego, CA, Aug. 1, 2019.
56. S. A. Dayeh, "Microelectrode Arrays for Large Scale Clinical Mapping: Electrochemical and Density," IEEE International Flexible Electronics Technology Conference, Vancouver, Canada, Aug. 13, 2019.
57. S. A. Dayeh, "Microelectrode Arrays for Clinical Mapping: Considerations and Brain Recordings with 1024 Channels," The 16<sup>th</sup> U.S.-Korea Forum on Nanotechnology: Nanomedicine Focusing on Single Cell Level and Sensors Related to Human Cognition and Brain Research," San Diego, CA, Sept. 23-34, 2019.
58. S. A. Dayeh, "Leveraging CINT Facilities to Demonstrate Record Performing Devices in Telecom and Health Sciences," Center for Integrated Nanotechnologies Tri-Annual Review, Los Alamos, NM, May 14-16, 2019.
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60. S. A. Dayeh, "Clinical Translation of Platinum Nanorod Microelectrode Arrays for Cortical Mapping," IEEE Nano, Macau, July 22, 2019.
61. S. A. Dayeh, "Development and Electrophysiological Recordings from the Human Brain and Spinal Cord with 1024 Channel Grids," ENABLE Center Annual Meeting, National Chung Hsing University, Taichung, Taiwan, Nov. 25, 2019.
62. S. A. Dayeh, "Development and Electrophysiological Recordings from the Human Brain and Spinal Cord with 1024 Channel Grids," Johns Hopkins University, Maryland, Nov. 7, 2019.
63. S. A. Dayeh, "1,024-Channel Microelectrode Arrays Reveal New Insights into Functional Organization in the Human Brain," IEEE EMBS Symposium on Brain and Mind, San Diego, CA, Dec. 19, 2019

64. S. A. Dayeh “UCSD’s Multi-Thousand Channel Electrophysiology Devices for Neuromonitoring and Neuromodulation,” UCSD Neurosurgery Grand Rounds, San Diego, CA, April 10, 2020.
65. S. A. Dayeh, “Mapping the Human Brain with High Spatiotemporal Resolution,” University of Cambridge, Dec. 9, 2020.
66. S. A. Dayeh, “Mapping the Human Brain with High Spatiotemporal Resolution,” Northern Arizona University, Feb. 4, 2021.
67. S. A. Dayeh, “Neuromodulation: Diagnosis and Therapy for Brain and Spinal Cord Disorders,” UCSd Center for Ethics, Mar. 4, 2021.
68. S. A. Dayeh, “Brain waves and Functional Domains: New Technologies for Brain & Spine Mapping and Therapy,” San Diego Town & Gown, May 11, 2021

### **Other Conference Presentations**

1. Shadi Dayeh, Donald P. Butler, Zeynep Çelik-Butler, and Ali Yildiz, “Uncooled Semiconducting YBaCuO Microbolometers on Rough Substrates,” TEXMEMSIV, Lubbock, Texas, July 11th, 2002.
2. Shadi A. Dayeh, Zeynep Çelik-Butler, and Donald P. Butler, “Micromachined Infrared Microsensors on Flexible Substrate,” TEXMEMSV, Automation and Robotics Institute, Fort-Worth, Texas, May 6, 2003.
3. Aamer Mahmood, Shadi Dayeh, Donald P. Butler, and Zeynep Çelik-Butler, “Micromachined Infrared Sensor Arrays on Flexible Polyimide Substrates,” IEEE Emerging Telecommunication Technologies Symposium, Richardson, TX, 26-27 Sept. 2003.
4. Aamer Mahmood, Shadi A. Dayeh, Donald P. Butler, Zeynep Çelik-Butler, and Patty Wisian-Neilson, “Micromachined Infrared Sensor Arrays on Flexible Polyimide Substrates,” IEEE International Conference on Sensors, Toronto, Canada, Proceedings of IEEE 2, 22-24 Oct. 2003.
5. Shadi A. Dayeh, Donald P. Butler, Zeynep Çelik-Butler, and P. Wisian-Neilson, “Uncooled micromachined bolometer arrays on flexible substrates,” SPIE Proceedings 5074, pp. 537-547, 2003.
6. Shadi A. Dayeh, David Aplin, Xiaotian Zhou, Paul K. K. Yu, Edward T. Yu, and Deli Wang, “Synthesis and Characterization of InAs Nanowires,” Electronic Materials Conference 2005, UCSB, Santa Barbra, CA.
7. X. Zhou, S. A. Dayeh. D. Aplin, D. Wang, and E. T. Yu, “Scanned Probe Electrical Characterization of Carrier Transport Behavior in InAs Nanowires,” 33rd Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-33), Cocoa Beach, Florida, 15-19 January 2006.
8. Deli Wang, Bin Xiang, Shadi Dayeh, and David Aplin, “Hierarchal 3D ZnO Nanowire Networks,” MRS Spring Meeting, San Francisco, California, 18-21 April, 2006.
9. Fengyan Zhang, Shadi Dayeh, Robert Barrowcliff, Sheng-Teng Hsu, and Deli Wang, “Iridium Oxide Nanotubes as high Sensitivity Chemo/Bio Sensors,” Invited, MRS Spring Meeting, San Francisco, California, 18-21 April, 2006.
10. Shadi A. Dayeh, David Aplin, Edward T. Yu, Paul K.L. Yu, and Deli Wang, “Growth Mechanism and Optimization of InAs Nanowires Synthesized by OMVPE,” Electronic Materials Conference, Pennsylvania State University, Pennsylvania, 2006. Outstanding Student Oral Presentation.

11. Xiaotian Zhou, Shadi A. Dayeh, Deli Wang, and Edward T. Yu, "Scanning Gate Microscopy Characterization of InAs Nanowires," 34th Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-34), Salt Lake City Marriot, Utah, 14-18 January 2007.
12. Shadi A. Dayeh, Cesare Soci, Paul K. L. Yu, Deli Wang, and Edward T. Yu, "Interface State Effects on the Transport Properties of InAs Nanowire Field Effect Transistors," 34th Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-34), Salt Lake City Marriot, Utah, 14-18 January 2007. PCSI-34 Young Scientist Award.
13. Bin Xiang, Pengwei Wang, Xingzheng Zhang, Shadi. A. Dayeh, David P. R. Aplin, Cesare Soci, Dapeng Yu, and Deli Wang, "Rational Synthesis of P-type ZnO Nanowire Arrays," MRS Spring Meeting, Moscone West, San Francisco, CA, 9-13 April, 2007.
14. Cesare Soci, Bin Xiang, Arthur Zhang, Jung Park, Shadi Dayeh, Xinyu Bao, YuHwa Lo, and Deli Wang, "Ultrahigh Sensitivity ZnO UV Detectors," MRS Spring Meeting, Moscone West, San Francisco, CA, 9-13 April, 2007.
15. Shadi A. Dayeh, Paul K. L. Yu, Edward T. Yu, and Deli Wang, "Field-, Diameter-, and Surface State-Dependent Transport Behavior in Semiconductor Nanowires," MRS Spring Meeting, Moscone West, San Francisco, CA, 9-13 April, 2007. Best Poster Award.
16. Shadi A. Dayeh, "Synthesis and Fabrication of Compound Semiconductor Nanowires and Devices for Novel Electronics," MRS Spring Meeting, Moscone West, San Francisco, CA, 9-13 April, 2007 (Award Session). MRS Graduate Student Award: Silver Medal.
17. Shadi A. Dayeh, Paul K. L. Yu, Edward T. Yu, and Deli Wang, "III-V Nanowire Growth Mechansim: VLS or VSS," Electronic Materials Conference, University of Notre Dame, Indiana, June 20-22nd, 2007.
18. Bin Xiang, Pengwei Wang, Xingzheng Zhang, Shadi. A. Dayeh, David P. R. Aplin, Cesare Soci, Dapeng Yu, and Deli Wang, "Rational Synthesis of P-type ZnO Nanowire Arrays," NSTI Nanotech 2007, Santa Clara Convention Center, Santa Clara, California, May 20-24, 2007.
19. Cesare Soci, Arthur Zhang, Bin Xiang, Shadi A. Dayeh, David P. R. Aplin, Xinyu Bao, Yu-Hwa Lo, and Deli Wang, "Ultrahigh sensitivity Nanowire Photodetectors," SPIE Optics and Photonics, San Diego Convention Center, San Diego, CA, 26-30 August 2007.
20. Cesare Soci, Arthur Zhang, Bin Xiang, Jung Park, Shadi A. Dayeh, Xinyu Bao, Yu-Hwa Lo, and Deli Wang, "Ultrahigh sensitivity Nanowire Photodetectors," NSTI Nanotech 2007, Santa Clara Convention Center, Santa Clara, California, May 20-24, 2007.
21. Shadi A. Dayeh, Edward T. Yu, and Deli Wang, "Optimal Control over the Vapor-Liquid-Solid Nanowire Morphology through Surface Kinetics," MRS Fall Meeting, Hynes Convention Center, Boston, MA, November 27-29, 2007.
22. Shadi A. Dayeh, Edward T. Yu, and Deli Wang, "Transport Properties of InAs Nanowires," MRS Fall Meeting, Hynes Convention Center, Boston, MA, November 27-29, 2007.
23. Shadi A. Dayeh, Edward T. Yu, and Deli Wang, "Mechanistic Studies and Precise Control of III-V Nanowire Growth," 35th Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-35), La Fonda Hotel, Santa Fe, New Mexico, January 13-17, 2008.
24. Shadi A. Dayeh, Sarah Eichfeld, Yi Jing, Peng Chen, Edward T. Yu, Deli Wang, Joan M. Redwing, and S. S. Lau, "Vertically-Aligned Si Nanowires on Silicon on Insulator," MRS Spring Meeting, Moscone West, San Francisco, CA, 9-13 April, 2008.
25. Shadi A. Dayeh, Yi Jing, Peng Chen, Edward T. Yu, Deli Wang, and S. S. Lau, "Integration of Vertical and Electrically-Isolated III-V Nanowires on Insulator on Silicon," MRS Spring Meeting, Moscone West, San Francisco, CA, 24-28 March, 2008.
26. Shadi A. Dayeh, Darija Susac, Karen L. Kavanagh, Edward T. Yu, and Deli Wang, "Structural and Electrical Properties of Zincblende and Wurtzite InAs Nanowires," Electronic Materials Conference, University of California-Santa Barbara, Santa Barbara, CA 25-27 June, 2008.

27. Jeremy J. M. Law, Shadi A. Dayeh, Deli Wang, and Edward T. Yu, "Scanning Capacitance Characterization of Potential Screening in InAs Nanowires," Electronic Materials Conference, University of California-Santa Barbara, Santa Barbara, CA 25-27 June, 2008.
28. Shadi A. Dayeh, Yi Jing, Peng Chen, Edward T. Yu, Deli Wang, and S. S. Lau, "Integration of Vertical and Electrically-Isolated III-V Nanowires on Insulator on Silicon," Advanced Substrates and Next Generation Semiconductors Workshop, The Conference Center at the Maritime Institute, Baltimore, Maryland, April 30- May 1, 2008. Winner Student Paper Competition.
29. Shadi A. Dayeh, Darija Susac, Peng Chen, Yi Jing, Karen L. Kavanagh, S. S. Lau, Edward T. Yu, and Deli Wang, "Optimal Control over the InAs Nanowire Growth for System Integration and their Structural and Transport Properties," 8th IEEE Conference on Nanotechnology, Arlington Convention Center, Arlington, Texas, Aug. 18 – 21, 2008. Finalist for best paper award.
30. Jeremy J. M. Law, Shadi A. Dayeh, Deli Wang, and Edward T. Yu, "Scanning capacitance characterization of Potential Screening in InAs Nanowires," 8th IEEE Conference on Nanotechnology, Arlington Convention Center, Arlington, Texas, Aug. 18 – 21, 2008.
31. Cesare Soci, Arthur Zhang, Bin Xiang, Shadi Dayeh, David Aplin, Xinyu Bao, Yu-Hwa Lo, and Deli Wang, "Ultrahigh Sensitivity UV Photodetectors," Electronic Materials Conference, University of California-Santa Barbara, Santa Barbara, CA, 25-27 June, 2008.
32. Xinyu Bao, Cesare Soci, Darija Susac, John Bratvold, David P. R. Aplin, Wei Wei, C.-Y. Chen, Shadi A. Dayeh, Karen L. Kavanagh, and Deli Wang, "Heteroepitaxial Growth of Vertical GaAs Nanowires on Si(111) Substrates by Metal Organic Chemical Vapor Deposition," MRS Fall Meeting, Hynes Convention Center, Boston, MA, December 1-5, 2008.
33. S. T. Picraux, Pradeep Manandhar, and Shadi A. Dayeh, "Si/Ge Nanowires: Vertical Synthesis and Integration," Invited, MRS Spring Meeting, Moscone West, San Francisco, CA, April 13 – 17, 2009.
34. S. T. Picraux, Pradeep Manandhar, and Shadi A. Dayeh, "Synthesis, Properties, and Integration of Si/Ge Nanowire Electronics," Invited, Nano and Giga Challenges in Electronics, Photonics, and Renewable Energy, Hamilton, Ontario, Canada, Aug. 10 – 14, 2009.
35. Shadi A. Dayeh, Cesare Soci, Xinyu Bao, Wei Wei, David Aplin, and Deli Wang, "Rational Synthesis of III-N Nanowires Using MOCVD," The 36th International Symposium on Compound Semiconductors, UC Santa Barbara, Aug. 30 – Sept. 2, 2009.
36. Son T. Le, Shadi A. Dayeh, S. T. Picraux, and Alexander Zaslavsky, "Growth and Transport Properties of axial p-n Junction Germanium Nanowires," The Second International Workshop on Nanotechnology and Application – IWNA 2009, Vietnam National University, HoChiMinh City, Vietnam, Nov. 12 – 14, 2009.
37. Shadi A. Dayeh, Eli Sutter, and S. T. Picraux, "Direct Observation and Analysis in the Gibbs-Thomson Effect in Germanium Nanowires," 37th Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-37), La Fonda Hotel, Santa Fe, New Mexico, January 10-14, 2010.
38. Shadi A. Dayeh, Ian H. Campbell, Jianyu Huang, Aaron Gin, and S. T. Picraux, "Uniqueness of the Vapor-Liquid-Solid Mechanism for Novel Axial and Radial Ge/Si Heterostructure Materials and Devices," 37th Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-37), La Fonda Hotel, Santa Fe, New Mexico, January 10-14, 2010.
39. Praveen K. Sekhar, Shadi A. Dayeh, Katherine L. Page, David Kuiper, Amanda Klingensmith, Sridhar Balasubramanian, and Mary Anne With, "Combinatorial Strategies Adopted by Los Alamos Postdoc Association (LAPA) for Personal and Professional Growth of Postdocs," 8th National Postdoc Association Meeting, U Penn, Philadelphia, Pennsylvania, March 12 – 14, 2010. This poster led to the third place of the Best Poster Award Competition at the NPA meeting. Dayeh developed poster and co-presented it with Sekhar.
40. Shadi A. Dayeh, Eli Sutter, and S. T. Picraux, "Direct Observation and Analysis in the Gibbs-Thomson Effect in Germanium Nanowires," MRS Spring Meeting, Moscone West, San Francisco, CA, April 5 – 9, 2010.



41. Shadi A. Dayeh, Jianyu Huang, Aaron Gin, and S. T. Picraux, "Unique Axial Ge/Si Heterostructure Nanowire Materials and Devices," MRS Spring Meeting, Moscone West, San Francisco, CA, April 5 – 9, 2010.
42. Son T. Le, Shadi A. Dayeh, S. T. Picraux, and Alexander Zaslavsky, "Electrical rectification in axial in-situ doped Ge nanowire pn junctions," APS March Meeting 2010, Portland, Oregon, March 15 – 19, 2010.
43. Shadi A. Dayeh, Ian H. Campbell, Jianyu Huang, Aaron Gin, and S. T. Picraux, "Elimination of Au Diffusion in Ge-based Core/Shell Nanowires for High Performance Photodetectors and FETs," MRS Spring Meeting, Moscone West, San Francisco, CA, April 5 – 10, 2010.
44. E. Sutter, S. A. Dayeh, S. T. Picraux, and P. Sutter, "Size Dependent Phase Diagram of Nanoscale Alloy Drops: Understanding Nanowire Growth at the Ultimate Size Limit," E-MRS, Strasbourg, France, June 7 – 11, 2010.
45. Shadi A. Dayeh, Jian Yu Huang, Aaron V. Gin, and S. T. Picraux, "Elimination of Gold Diffusion in the Heterostructure Core/Shell growth of High Performance Ge/Si Nanowire HFETs," IEEE NANO'10 Aug. 17-20, 2010.
46. Shadi A. Dayeh, Jian Yu Huang, Aaron V. Gin, and S. T. Picraux, "Synthesis, Fabrication, and Characterization of Ge/Si Axial Nanowire Heterostructure Tunnel FETs," IEEE NANO'10, Aug. 17-20, 2010.
47. Shadi A. Dayeh, Greg Swadener, and S. T. Picraux, "Synthesis and Properties of Ge and Ge/Si Heterostructured Nanowires," Invited, 2010 International Symposium on Materials for Enabling Nanodevices, California Nano-Systems Institute at UCLA, Sept. 8-10, 2010.
48. Shadi A. Dayeh and S. T. Picraux, "Ge/Si Core/Multi-shell Heterostructure FETs," 218th ECS Meeting, Las Vegas, Nevada, Oct. 10-15, 2010.
49. Shadi A. Dayeh and S. T. Picraux, "Axial Ge/Si Nanowire Heterostructure Tunnel FETs," 218th ECS Meeting, Oct. 10-15, Las Vegas, Nevada, 2010.
50. Shadi A. Dayeh, Jianyu Huang, Aaron Gin, and S. T. Picraux, "Axial Ge/Si Nanowire Heterostructures: Synthesis and Asymmetric Band-gap Engineered Tunnel FETs," AVS International Symposium, Albuquerque, NM, Oct. 17-22, 2010.
51. Shadi A. Dayeh and S. T. Picraux, "Size effects in the synthesis of Ge and Ge/Si nanowire heterostructures," AVS International Symposium, Albuquerque, NM, Oct. 17-22, 2010.
52. Aditya D. Mohite, Shadi A. Dayeh, Wei Tang, Gregory J. Swadener, S. T. Picraux, and Han Htoon, "Direct Measurement of Strain in Germanium-Silicon Core-Shell Nanowires," MRS Fall Meeting, Boston, Massachusetts, Nov. 29 – Dec. 2, 2010.
53. Aaron V. Gin, Shadi A. Dayeh, S. Tom Picraux, Nikolai Kalugin, Stephen Howell, Dan Ward, Doug Naterlson, and Igal Brener, "Nanofabrication of Graphene, Semiconductor Nanowire, and Plasmonic Devices at the Center for Integrated Nanotechnologies," 2010 Workshop on Innovative Devices and Systems (WINDS), Hapuna Beach Prince Hotel, Kohala Coast, Big Island of Hawai'i, Dec. 5-10, 2010.
54. MinAh Seo, Shadi A. Dayeh, Prashanth Upadhyaya, Julio Martinez, Brian S. Swartzentruber, S. T. Picraux, Antoinette J. Taylor, and Rohit P. Prasankumar, "Polarization dependence of ultrafast dynamics in single Si nanowires," APS March Meeting, Dallas, TX, March 21-25, 2011.
55. Aditya D. Mohite, Daniel E. Perea, Sanjeev Singh, Shadi A. Dayeh, Samuel T. Picraux, and Han Htoon, "Measurement of Minority Carrier Diffusion Lengths in VLS-grown p-n Junction Silicon Nanowires," MRS Spring Meeting, San Francisco, CA, April 25 – 29, 2011.
56. Minah Seo, Shadi A Dayeh, Prashanth Upadhyaya, S. T. Picraux, Julio Martinez, Brian Swartzentruber, Antoinette Taylor, and Rohit Prasankumar, "Polarization anisotropy of transient carrier dynamics in single Si Nanowires," CLEO, Baltimore, MA, May 1-6, 2011.
57. Wei Tang, Shadi Dayeh, Tom Picraux, and King-Ning Tu, "Silicide/Silicon/Silicide Heterostructures with Ultra-Thin Silicon Gap and Realization of FET Device," Electronic Materials Conference, UCSB, Santa Barbara, CA, June 22-24, 2011.

58. Xing Dai, Vaithianathan Veeramuthu, Alexander Larrue, Shadi A. Dayeh, Haibin Su, and Cesare Soci, "Y-Junction GaAs nanowires by a Novel VLS Growth Mechanism," International Conference on Materials for Advanced Technologies (ICMAT), June 26 – July 1, 2011.
59. Shadi A. Dayeh, Jian Wang, Wei Tang, Karen L. Kavanagh, and S. T. Picraux, "Two Coherent Limits in Core/Shell Semiconductor Nanowires," MRS Fall Meeting, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
60. Xiaohua Liu, Li Qiang Zhang, Li Zhong, Yang Liu, He Zheng, Jiang Wei Wang, Jeong-Hyun Cho, Shadi A. Dayeh, Tom Picraux, John P. Sullivan, Scott X. Mao, and Jian Yu Huang, "Ultrafast Electrochemical Lithiation of Individual Si Nanowire Anodes," MRS Fall Meeting, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
61. Jinkyong Yoo, Shadi A. Dayeh, S. T. Picraux, and Ian H. Campbell, "Single Crystalline Radial P-N Junction Si Nanopillars for Photovoltaic Applications," MRS Fall Meeting, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
62. Wei Tang, Shadi Dayeh, Tom Picraux, and King-Ning Tu, "Silicide/Silicon/Silicide Nanowire Heterostructures and FET Devices with Ultra-Short Channel Length," MRS Fall Meeting, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
63. Shadi A. Dayeh, Jian Wang, Nan Li, Jian-Yu Hwang, and S. Tom Picraux, "Atomic Level Understanding of Defect Nucleation and Kinking Using Semiconductor Heterostructure Nanowires," MRS Fall Meeting, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
64. Xing Dai, Shadi A. Dayeh, Nan Meng, Alexandre Larrue, Haibin Su, and Cesare Soci, "Self Assembled GaAs Nanowire Junctions," MRS Fall Meeting, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
65. Xing Dai, Shadi A. Dayeh, Nan Meng, Alexandre Larrue, Haibin Su, and Cesare Soci, "Self Assembly and Electrical Properties of GaAs Nanowire Junctions," Intitute of Physics Singapore (IPS) Meeting, Singapore, Feb. 23 – 24, 2012.
66. M. A. Seo, J. Yoo, D. E. Perea, S. A. Dayeh, S. T. Picraux, A. J. Taylor, and R. P. Prasankumar, "Tracking Ultrafast Carrier Dynamics in Single Semiconductor Nanowire Heterostructures," XVIIIth International Conference on Ultrafast Phenomena, Lausanne, Switzerland, 8 - 13 July 2012.
67. Wei Tang, Shadi Dayeh, Tom Picraux, Xiaohua Liu, Jianyu Huang, and King-Ning Tu, "Gold Catalyzed Ni Disilicide Formation in Si Nanowires: A New Solid-Liquid-Solid (SLS) Phase Growth Mechanism," MRS Spring Meeting, San Francisco, CA, April 9 – 13, 2012.
68. Jinkyong Yoo, Shadi A. Dayeh, Wei Tang, Ian H. Campbell, S. T. Picraux, Paul Schuele, and David Evans, "Tailoring Radial Si Nanowire Growth for Single Crystal Photovoltaic Arrays," MRS Spring Meeting, San Francisco, CA, April 9 – 13, 2012.
69. Son T. Le, Danuel Perea, Pooya Jannaty, Aditya Mohite, Shadi Dayeh, Alexander Zaslavsky, and S. Tom Picraux, "Axial Si/Ge Hetero-nanowire for Tunneling Transistors and Photovoltaics," MRS Spring Meeting, San Francisco, CA, April 9 – 13, 2012.
70. Daniel E. Perea, Jinkyong Yoo, Shadi A. Dayeh, Daniel K. Shreiber, S. T. Picraux, and Theva Thevuthasan, "Controlling axial p-n heterojunction abruptness through catalyst allowing in vapor-liquid-solid- grown semiconductor nanowires," MSA Microscopy and Microanalysis, Phoenix, AZ, July 29 – August 2, 2012.
71. Yoontae Hwang and Shadi A. Dayeh, "An All-solid Nickel Silicide Wafer Bonding with Wide Thermal Budget," Electronic Materials Conference, Penn. State Univ., June 20 – 22, 2012.
72. Son T. Le, D. Perea, P. Jannaty, Xu Lou, S. A. Dayeh, A. Zaslavsky, and S. T. Picraux, "Axial Si/Ge hetero-nanowires for gate-all-around tunneling transistors," Lester Eastman Conference on High Performance Devices, Brown University, RI, Aug. 7-9, 2012.
73. Son T. Le, Pei Liu, D. Perea, Aditya Mohite, P. Jannaty, J. Faucher, Xu Luo, S. A. Dayeh, D. Pacifici, A. Zaslavsky, and S. T. Picraux, "Axial Si/Ge heteronanowires for photovoltaic applications," Lester Eastman Conference on High Performance Devices, Brown University, RI, Aug. 7-9, 2012.

74. Yoontae Hwang, Jennifer Schei, S. Tom Picraux, John S. George, and Shadi A. Dayeh, "High-density electrically isolated capacitive pillar arrays for high fidelity neural sensors," Neuroscience Meeting, Novel Electrophysiological Methods II, New Orleans, LA, Oct. 13-17, 2012.
75. Son T. Le, Binh-Minh Nguyen, Danny Perea, Aditya Mohite, Pooya Jannaty, Xu Luo, Pei Liu, Joseph Faucher, Shadi A. Dayeh, Domenico Pacifici, Alexander Zaslavsky, and Tom Picraux, "Design, Fabrication and Characterization of Axial Si/Ge Heteronanowires for Optoelectronics and Photovoltaic Applications," MRS Fall meeting, Hynes Convention Center, Boston, MA, Nov. 25- 30, 2012.
76. Andrew D. Gamalski, Daniel E. Perea, Jinkyong Yoo, Shadi A. Dayeh, Nan Li, Caterina Ducati, Amit Misra, S. Thomas Picraux, and Stephan Hofmann, "The Kinetics of Ge-Si Heterostructure Nanowire Synthesis with AuGa Catalysts," MRS Fall meeting, Hynes Convention Center, Boston, MA, Nov. 25- 30, 2012.
77. Jinkyong Yoo, Binh Minh Nguyen, Shadi Dayeh, Aditya Mohite, Tom Picraux, Paul Schuele, and David Evans, "Design Rules for High-performance Photovoltaic Applications Based on Si Radial p-i-n Junction Nanowire Arrays," MRS Fall meeting, Hynes Convention Center, Boston, MA, Nov. 25-30, 2012.
78. Yoontae Hwang, Jennifer L. Schei, John S. George, Tom Picraux, and Shadi A. Dayeh, "High-density Capacitive Pillar Arrays for High Fidelity Neural Sensors," MRS Fall meeting, Hynes Convention Center, Boston, MA, Nov. 25- 30, 2012.
79. Yang Liu, Xiao Hua Liu, Shadi A. Dayeh, John P. Sullivan, and Jian Yu Huang, "Controlling the Lithiation Behavior of Ge Nanowires via Surface Modifications: An in-situ Transmission Electron Microscopy Study," MRS Fall meeting, Hynes Convention Center, Boston, MA, Nov. 25- 30, 2012.
80. Xiaohua Liu, He Zhang, Li Zhong, Shan Huang, Khim Karki, Li Q. Zhang, Yang Liu, Akihiro Kushima, Wen T. Liang, Jiang W. Wang, Jeong H. Cho, Eric Epstein, and S. A. Dayeh et al., "Anisotropic Swelling of Si Nanowires and Size Dependent Fracture of Si Nanoparticles During Lithiation," 2012 TMS Annual Meeting & Exhibition, Orlando, FL, March 11-15, 2012.
81. Xing Dai, Binh-Minh Nguyen, Yoontae Hwang, Cesare Soci, and Shadi A. Dayeh, "A Novel Approach for High Performance InAs FinFETs on Silicon," The Physics and Chemistry of Semiconductor Surfaces and Interfaces (PCSI-40), Waikoloa, Hawaii, Jan. 20 – 24, 2013.
82. Shixiong Zhang, Shadi Dayeh, Yan Li, Scott A. Crooker, Darryl L. Smith, and S. Tom Picraux, "Electrical Spin Injection and Detection in Si Nanowires," APS March Meeting, March 18 - 22, 2013.
83. Xing Dai, Binh-Minh Nguyen, Yoontae Hwang, Cesare Soci, and Shadi A. Dayeh, "A Novel Approach for High Performance InAs FINFETs on Silicon," Institute of Physics Singapore (IPS) Meeting, March 4-6, 2013, Singapore.
84. Jinkyong Yoo, Shadi A. Dayeh, Wei Tang, Alp Findikoglu, and S. T. Picraux, "Novel Observation in Nanoscale Radial Epitaxial Growth," MRS Spring Meeting, San Francisco, CA, April 1-5, 2013.
85. Wei Tang, S. T. Picraux, Jianyu Huang, Andriy Gusak, King-Ning Tu, and Shadi A. Dayeh, "Imaging Silicide Nucleation and Atomic Step Flow at Defect-engineered Nanoscale Si Channels," MRS Spring Meeting, San Francisco, CA, April 1-5, 2013.
86. Binh-Minh Nguyen, Yang Liu, Wei Tang, and Shadi A. Dayeh, "Tailoring Si-Ge/Si Core/Shell Reaction Rates through in-situ Microscopy for Ultra-short Channel Nanowire Field Effect Transistors," MRS Spring Meeting, San Francisco, CA, April 1-5, 2013.
87. Son Le, Daniel Perea, Pooya Jannaty, Xu Luo, Shadi Dayeh, Alexander Zaslavsky, and Thomas Picraux, "Axial Si/Ge Hetero-nanowires for Tunneling Transistors," APS March Meeting, Baltimore, Maryland, March 18-22, 2013.
88. A. Zaslavsky, Jing Wan, Son T. Le, P. Jannaty, S. Cristoloveanu, C. Le Royer, D. E. Perea, S. A. Dayeh, and S. T. Picraux, "Sharp-Switching High Current Tunneling Devices," 223rd ECS Meeting, Toronto, Canada, May 12 – 16, 2013.
89. S. T. Picraux, J. Yoo, D. E. Perea, and S. A. Dayeh, "Si/Ge Nanowires: Nanoscale Growth, Heterostructuring, and Energy Conversion," Nanowires 2013, Weizmann Institute of Science, Israel, Nov. 12-15, 2013. **(Invited)**

90. Yang Liu, Xiaohua Liu, Katherine L. Jungjohann, Shadi A. Dayeh, Sulin Zhang, Ju Li, and Ting Zhu, "In-situ Lithiation Behavior of Diverse Si Nanostructures for Li Ion Battery," MRS Fall Meeting Hynes Convention Center, Boston, MA, Dec. 1- 6, 2013.
91. Jinkyoungh Yoo, Binh-Minh Nguyen, Shadi A. Dayeh, Tom Picraux, Paul Schuele, and David Evans, "High-Performance Crystalline Si Radial p-i-n Junction Nanowire Photovoltaic Applications," MRS Fall Meeting, Hynes Convention Center, Boston, MA, Dec. 1- 6, 2013.
92. Binh-Minh Nguyen and Shadi A. Dayeh, "Single Crystalline Si/Ge/Si Core-Multiple Shell Nanowires for Advanced Cylindrical Well Field Effect Transistors," MRS Fall Meeting, Hynes Convention Center, Boston, MA, Dec. 1- 6, 2013.
93. Jinkyoungh Yoo, Shadi A. Dayeh, Wei Tang, and Tom Picraux, "Universal Growth Mechanism of Si Nanoscale Three-Dimensional Epitaxy," MRS Fall Meeting, Hynes Convention Center, Boston, MA, Dec. 1- 6, 2013.
94. Minah Seo, Jinkyoungh Yoo, Shadi A. Dayeh, Samuel T. Picraux, Antoinette J. Taylor, and Rohit Prasankumar, "Ultrafast Optical Microscopy on Single Semiconductor Nanowires," SPIE Photonics West, San Francisco, CA, February 2 – 5, 2014. **(Invited)**
95. Wei Tang, Tom Picraux, Xiaohua Liu, King-Ning Tu, and Shadi Dayeh, "Phase Stability, Phase Transformations, and Reactive Phase Formation in Electronic Materials," 2014 TMS Annual Meeting & Exhibition, San Diego, CA, Feb. 16 – 20, 2014.
96. D. K. Patil, Z. Su, B. Tian, M. Nguyen, J. Yoo, S. A. Dayeh, and S. Frolov, "Quasiballistic Hole Transport in Ge/Si Core/Shell Nanowires," American Physical Society March Meeting, Denver, Colorado, March 3-7, 2014.
97. Jinkyoungh Yoo, Daniel E. Perea, Shadi A. Dayeh, Paul Schuele, David Evans, and S. T. Picraux, "Si Radial p-i-n Junction Nanowires on Stainless Steel Substrate for Photovoltaic Applications," MRS Spring Meeting, San Francisco, CA, April 21 – 25, 2014.
98. Yang Liu, Xiao Hua Liu, Binh-Minh Nguyen, Jinkyoungh Yoo, John P. Sullivan, S. Tom Picraux, and Shadi A. Dayeh, "Lithium Ion Transport in Si-Ge Heterostructures: An in-situ TEM study in nano-ionics," MRS Spring Meeting, San Francisco, CA, April 21 – 25, 2014.
99. Shadi A. Dayeh, Wei Tang, and Binh-Minh Nguyen, "Heterogeneous Reactions and Interfaces at Nanoscale Dimensions," Nanotech Advanced Materials and Applications, Washington, DC, June 15-18, 2014.
100. Renjie Chen and Shadi A. Dayeh, "Kinetics of Nickelide Contact Formation to InGaAs Fin Channels," Electronic Materials Conference, Santa Barbara, CA, June 25-27, 2014.
101. Yang Liu, Xiao Hua Liu, Binh-Minh Nguyen, Jinkyoungh Yoo, John P. Sullivan, S. T. Picraux, and Shadi A. Dayeh, "In-situ Transmission Electron Microscopy (TEM) Study on the Lithium Ion Transport in Si-Ge Heterostructures," Microscopy and Microanalysis, Hartford, CT, Aug. 3-7, 2014.
102. Jinkyoungh Yoo, Shadi A. Dayeh, Norman Bartelt, and S. T. Picraux, "Silicon Epitaxy in Nanoscale for Photovoltaic Applications," SPIE Meeting, San Diego, CA, Aug. 19-21, 2014. **(Invited)**
103. Wei Tang, S. Tom Picraux, Andriy M Gusak, King-Ning Tu, and Shadi A. Dayeh, "Dynamical Imaging of Nickel Disilicide Nucleation and Step Flow Propagation in Defect-Engineered Si Nanowire," 226th Electrochemical Society Meeting, Cancun, Mexico, Oct. 5-10, 2014.
104. Wei Tang, S. Tom Picraux, Xiaohua Liu, King-Ning Tu, and Shadi A. Dayeh, "In Situ TEM Study on Au Mediated Growth of NiSi<sub>2</sub> in Si Nanowire: A Vapor-Liquid-Solid Analogy," 226th Electrochemical Society Meeting, Cancun, Mexico, Oct. 5-10, 2014.
105. Wei Tang, Shadi A. Dayeh, S. T. Picraux, and K. N. Tu, "Ultrashort Channel Silicon Nanowire Transistors with Nickel Silicide Source/Drain Contacts," 226th Electrochemical Society Meeting, Cancun, Mexico, Oct. 5-10, 2014.
106. Jinkyoungh Yoo, Shadi A. Dayeh, Norman Bartelt, and S. T. Picraux, "Radial Epitaxy of Silicon for Optoelectronic Applications," 226th Electrochemical Society Meeting, Cancun, Mexico, Oct. 5-10, 2014. **(Invited)**

107. Renjie Chen and Shadi A. Dayeh, "Kinetics and Structure of Nickelide Contact Formation to InGaAs Fin Channels," 226th Electrochemical Society Meeting, Cancun, Mexico, Oct. 5-10, 2014.
108. Jinkyong Yoo, Binh-Minh Nguyen, Ian H. Campbell, Shadi A. Dayeh, Paul Schuele, David Evans, and S. T. Picraux, "Epitaxial Control of the Morphology Si Radial p-i-n Junction Nanowires for Enhanced Quantum Efficiency," MRS Fall Meeting, Boston, MA, Nov. 30 – Dec. 5th, 2014.
109. Minah Seo, Jinkyong Yoo, Shadi A. Dayeh, Samuel Tom Picraux, Antoinette J. Taylor, and Rohit P. Prasankumar, "Tracking Carriers Through Space and Time in Single Silicon Nanowires Using Ultrafast Optical Microscopy," MRS Fall Meeting, Boston, MA, Nov. 30 – Dec. 5th, 2014.
110. A. Zarassi, Z. Su, D. K. Patil, S. M. Frolov, M. Hocevar, M. Nguyen, J. Yoo, and S. A. Dayeh, "Transport Through Double Quantum Dots in Ge/Si core/shell Nanowires," American Physical Society March Meeting, San Antonio, Texas, March 2 – 6, 2015.
111. Zhaoen Su, Azarin Zarassi, Dharamraj Patil, Sergey Frolov, Moira Hocevar, Minh Nguyen, Jinkyong Yoo, and Shadi A. Dayeh, "Superconducting Contacts to Ge/Si Core/Shell Nanowires," American Physical Society March Meeting, San Antonio, Texas, March 2 – 6, 2015.
112. Renjie Chen and Shadi A. Dayeh, "Kinetics and Structure of Nickelide Contact Formation to InGaAs Fin Channels," MRS Spring Meeting, April 6 – 10, 2015.
113. Renjie Chen, Ren Liu, Sang-Heon Lee, John Scott, Yimin Zou, and Shadi A. Dayeh, "High Density Intra-Cellular 3D Neuronal Probes," Tech Connect World, Washington, DC, June 14-17, 2015.
114. Namseok Park, Yun Goo Ro, Shiarhei Vishniako, and Shadi A. Dayeh, "Monolithic Integration of Self Powered Wearable Electronics," Tech Connect World, Washington, DC, June 14-17, 2015.
115. Sang Heon Lee, Farid Azzazy, and Shadi A. Dayeh, "Novel 3D Minimal Tissue-Penetrating Probes on Conformal Flexible Substrates for In-Vivo Brain Mapping," Tech Connect World, Washington, DC, June 14-17, 2015.
116. Siarhei Vishniakou, Deli Wang, and Shadi A. Dayeh, "Transparent, Scalable, and Flexible Piezoelectric Pressure Sensors," Tech Connect World, Washington, DC, June 14-17, 2015.
117. Renjie Chen, Ren Liu, Sang Heon Lee, John Scott, Yimin Zou, and Shadi A. Dayeh, "High Density Intra-Cellular 3D Neuronal Probes," 57th Electronics Materials Conference, Columbus, Ohio, June 24-26, 2015.
118. Sang Heon Lee, Farid Azzazy, and Shadi A. Dayeh, "Novel 3D Minimal Tissue-Penetrating Probes on Conformal Flexible Substrates for In-Vivo Brain Mapping," 57th Electronics Materials Conference, Columbus, Ohio, June 24-26, 2015.
119. Yun Goo Ro, Namseok Park, Siarhei Vishniakou, and Shadi A. Dayeh, "Monolithic Integration of Self Powered Wearable Electronics," 57th Electronics Materials Conference, Columbus, Ohio, June 24-26, 2015.
120. Yun Goo Ro, Renjie Chen, and Shadi A. Dayeh, "Surface Passivation Studies on Vertical Junction Silicon Microwire Solar Cells," 57th Electronics Materials Conference, Columbus, Ohio, June 24-26, 2015.
121. Renjie Chen and Shadi A. Dayeh, "Size and Orientation Effects on the Kinetics and Structure of Nickelide Contacts to InGaAs Fin Channels," 57th Electronics Materials Conference, Columbus, Ohio, June 24-26, 2015.
122. Supanee Sukritnnon, Charles W. Tu, and Shadi A. Dayeh, "Fabrication and Performance of Dilute Nitride GaP/GaN Core/Shell Nanopillar-Based Solar Cells," 57th Electronics Materials Conference, Columbus, Ohio, June 24-26, 2015.
123. Atsunori Tanaka and Shadi A. Dayeh, "Size Effects on the Selective Area Growth of GaN on Sapphire," 57th Electronics Materials Conference, Columbus, Ohio, June 24-26, 2015.
124. Atsunori Tanaka, Renjie Chen, and Shadi A. Dayeh, "Beyond 10um Thick Crack-Free GaN Growth on Si for High Power Device Applications," 57th Electronics Materials Conference, Columbus, Ohio, June 24-26, 2015.

125. Siarhei Vishniakou, Namseok Park, Phat Phan, Jacob Stanley, James Wingert, Deli Wang, and Shadi A. Dayeh, "Transparent, Scalable, and Flexible Piezoelectric Pressure Sensors," 57th Electronics Materials Conference, Columbus, Ohio, June 24-26, 2015.
126. Yun Goo Ro, Renjie Chen, and Shadi A. Dayeh, "Surface Passivation Studies on Vertical Junction Silicon Microwire Solar Cells," Solid State Devices and Materials Conference, Hokkaido, Japan, Sept. 19, 2015.
127. Atsunori Tanaka, Renjie Chen, and Shadi A. Dayeh, "Beyond 10 $\mu$ m Thick Crack-Free GaN Growth on Si for High Power Device Applications," Solid State Devices and Materials Conference, Hokkaido, Japan, Sept. 19, 2015.
128. Yun Goo Ro, Renjie Chen, Namseok Park, Ahmed Youssef, Siarhei Vishniakou, and Shadi A. Dayeh, "Dlexible Nanowire Solar Cells for Wearable Electronics," MRS Fall Meeting, Boston, Massachusetts, Nov. 29 – Dec. 4, 2015.
129. Sang Heon Lee, Farid Azzazy, and Shadi A. Dayeh, "Novel 3D Tissue-Penetrating Probes on Conformal Flexible Substrates for In-Vivo Brain Mapping," MRS Fall Meeting, Boston, Massachusetts, Nov. 29 – Dec. 4, 2015.

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130. Supanee Sukirttanon, Ren Liu, Yun Goo Ro, Janet L. Pan, Shadi A. Dayeh, and Charles W. Tu, "Dilute Nitride GaNP Wide Bandgap Solar Cells," 31<sup>st</sup> North American Molecular Beam Epitaxy Conference, Mayan Riviera, Mexico, Oct. 4-7, 2015.
131. Ahmed T. E. Youssef, Renjie Chen, Ren Liu, Sang Heon Lee, Massould L. Khraiche, Yoontae Hwang, Yun Goo Ro, Atsunori Tanaka, Keisuke Matsushita, Sandy Hinckley, Anne Bang, and Shadi A. Dayeh, "Probing Human Pluripotent Stem Cell Neurons: Electrical Modeling and Physiological Measurement," 43<sup>rd</sup> Conference on the Physics and Chemistry of Surfaces and Interfaces, Rancho Mirage, Palm Springs, California, Jan. 17 – 21, 2016.
132. Atsunori Tanaka, Renjie Chen, and Shadi A. Dayeh, "Strain Engineering for Beyond 10  $\mu$ m Thick Crack-Free GaN Growth on Si for High Power Device Applications," 43<sup>rd</sup> Conference on the Physics and Chemistry of Surfaces and Interfaces, Rancho Mirage, Palm Springs, California, Jan. 17 – 21, 2016.
133. Renjie Chen, and Shadi A. Dayeh, "Ex-situ and In-situ TEM Studies of Ni-InGaAs Reaction in InGaAs Fins," 43<sup>rd</sup> Conference on the Physics and Chemistry of Surfaces and Interfaces, Rancho Mirage, Palm Springs, California, Jan. 17 – 21, 2016.
134. Yun Goo Ro, Renjie Chen, Ahmed T. E. Youssef, Namseok Park, Ren Liu, and Shadi A. Dayeh, "Mechanistic Studies for the Development of Thin Si Microwire Solar Cells for Wearable Electronics," 43<sup>rd</sup> Conference on the Physics and Chemistry of Surfaces and Interfaces, Rancho Mirage, Palm Springs, California, Jan. 17 – 21, 2016.
135. A. Tanaka, R. Chen, and Shadi A. Dayeh, "Beyond 10  $\mu$ m Thick Crack-Free GaN Growth on Si for High Power Device Applications," 2016 Lawrence Symposium on Epitaxy, McCormick Scottsdale, Scottsdale, Arizona, Feb. 24, 2016.
136. Azarin Zarassi, Zhaoen Su, Jens Schwenderling, Sergey M. Frolov, Moira Hovevar, Binh-Minh Nguyen, Jinkyoungh Yoo, and Shadi A. Dayeh, "Charge Instability in Double Quantum Dots in Ge/Si Core/Shell Nanowires," American Physical Society March Meeting 2016, Baltimore Maryland, Mar. 14 – 18, 2016.
137. Atsunori Tanaka, Renjie Chen, and Shadi A. Dayeh, "Strian Engineering for over 10  $\mu$ m Thick Crak-Free GaN Growth on Si for High Power Applications," 58<sup>th</sup> Electronic Materials Conference, Newark, Delaware, Jun. 22 – 24, 2016.
138. Mehran Ganji, Atsunori Tanaka, and Shadi A. Dayeh, "Sterilization Effects on PEDOT-PSS Microarrays on Parylene C for In Vivo Clinical Applications," 58<sup>th</sup> Electronic Materials Conference, Newark, Delaware, Jun. 22 – 24, 2016.
139. Ahmed T. E. Youssef, Yun Goo Roo, Namseok Park, Cooper Levy, James F. Buckwalter, and Shadi A. Dayeh, "Compact High-Performance Integrated Wearable Electronics with Energy Harvesting," 58<sup>th</sup> Electronic Materials Conference, Newark, Delaware, Jun. 22 – 24, 2016.

140. Supanee Sukrittanon, Ren Liu, Janet L. Pan, Katherine L. Jungjohann, Shadi A. Dayeh, and Charles W. Tu, "Dilute-Nitride GaNP Planar and Core/Shell Microwire Solar Cells," The 43<sup>rd</sup> International Symposium on Compound Semiconductors (ISCS), Toyama International Conference Center, Toyama, Japan, Jun. 26 – 30, 2016.
141. Rui La, Ren Liu, Weichuan Yao, Janet Pan, Shadi A. Dayeh, Jie Xiang, and Charles W. Tu, "Self-Catalyzed Core-Shell GaAs/GaNAs Nanowires Grown on Patterned Si (111) by Gas Source Molecular Beam Epitaxy," 32<sup>nd</sup> North American Molecular Beam Epitaxy Conference, Saratoga Springs, New York, Sep. 18 – 21, 2016.
142. Nicholas Rogers, John Hermiz, Erik Kaestner, Mehran Ganji, Robert S. Barter, Shadi A. Dayeh, Eric Halgren, and Vikash Gilja, "Spatial Correlation in a 400 micron pitch electrocorticography grid," Society for Neuroscience Meeting, San Diego, California, Nov. 12 – 16, 2016.
143. John Hermiz, Nicholas Rogers, Erik Kaestner, Mehran Ganji, Robert Carter, Sydney Cash, David Barba, Shadi A. Dayeh, Eric Halgren, and Vikash Gilja, "Assessing Very High Density Intraoperative ECoG Grids Using a 7x8 Grid with 400 um pitch," Society for Neuroscience Meeting, San Diego, California, Nov. 12 – 16, 2016.
144. Eric Kaestner, John Hermiz, Nicholas Rogers, Mehran Ganji, Robert S. Carter, Sydney Cash, David Barbara, Shadi A. Dayeh, Vikash Gilja, and Eric Halgren, "Cognitive Responses Recorded During Neurosurgery Using Microarray PEDOT:PSS Electrodes," Society for Neuroscience Meeting, San Diego, California, Nov. 12 – 16, 2016.
145. Ren Liu, Renjie Chen, Ahmed T. E. Youssef, Sang Heon Lee, Sandy Hinckley, Massoud L. Khraiche, John Scott, Yoontae Hwang, Atsunori Tanaka, Yun Goo Ro, Albert K. Matrushita, Xing Dai, Cesare Soci, Steven Biesmans, Anthony James, John Nogan, Katherine L. Jungjohan, Douglas V. Pete, Dennise B. Webb, Yimin Zou, Anne Bang, and S. A. Dayeh, "High Density Individually Addressable Nanowire Arrays Record Intracellular Neuronal Potentials," Society for Neuroscience Meeting, San Diego, California, Nov. 12 – 16, 2016.
146. Sang Heon Lee, Farid Azzazy, Mehran Ganji, Massoud L. Khraiche, John Hermiz, Nicholas Rogers, Ahmed Youssef, Vikash Gilja, and Shadi A. Dayeh, "Novel 3D Minimal Tissue-Penetrating Probes on Conformal Flexible Substrates for in-vivo Brain Mapping," Society for Neuroscience Meeting, San Diego, California, Nov. 12 – 16, 2016.
147. Keundong Lee, Mehran Ganji, Lorraine Hossain, Yun Goo Ro, Sang Heon Lee, Jong-woo Park, Dongha Yoo, Jiyoung Yoon, Gyu-Chul Yi, Shadi A. Dayeh, "Flexible Inorganic Light Emitting Diodes and Transparent PEDOT:PSS/Parylene C for Simultaneous Optogenetics and Electrocorticography", SPIE BiOS 2017, San Francisco, California, Jan. 28 – Feb. 2, 2017.
148. Renjie Chen, Katherine L. Jungjohann, William M. Mook, John Nogan, and Shadi A. Dayeh, "Direct Observation of Alloyed Contact Formation in Nanowire Cross-Section," International Conference on Frontiers of Characterization and Metrology for Nanoelectronics, Monterey Marriot, Monterey, California, Mar. 21 – 23, 2017.
149. Renjie Chen and Shadi A. Dayeh, "In-situ TEM Observation of Nickelide Contact Formation in InGaAs Nanowire Channels," International Conference on Frontiers of Characterization and Metrology for Nanoelectronics, Monterey Marriot, Monterey, California, Mar. 21 – 23, 2017. **(NEW)**
150. Woojin Choi, Atsunori Tanaka, Renjie Chen, and Shadi A. Dayeh, "Vertical 19  $\mu\text{m}$  Thick GaN Trench Gate MISFETs," 59<sup>th</sup> Electronics Materials Conference, University of Notre Dame, South Bend, Indiana, Jun. 28 – 30, 2017.
151. Lorraine A. Hossain, Ezequiel Arneodo, Nicholas Rogers, Mehran Ganji, John Hermiz, Vikash Gilja, Timothy Gentner, and Shadi A. Dayeh, "Translation of PEDOT/Parylene C ECoG Microelectrode Arrays for Recording Auditory Cognitive Activity in Birds," 59<sup>th</sup> Electronics Materials Conference, University of Notre Dame, South Bend, Indiana, Jun. 28 – 30, 2017.
152. Mehran Ganji, Atsunori Tanaka, Ahmed Youssef, Vikash Gilja, Eric Halgren, and Shadi A. Dayeh, "Size Effects in Scaling Electrocorticography Arrays of PEDOT:PSS/Au, PEDOT:PSS/Pt, Au, and

- Pt.,” 59<sup>th</sup> Electronics Materials Conference, University of Notre Dame, South Bend, Indiana, Jun. 28 – 30, 2017.
153. Atsunori Tanaka, Renjie Chen, and Shadi A. Dayeh “Selective Area Growth and Characterization of Over 15 $\mu$ m Thick Vertical GaN Diodes on Si,” 59<sup>th</sup> Electronics Materials Conference, University of Notre Dame, South Bend, Indiana, Jun. 28 – 30, 2017.
  154. Renjie Chen, Katherine L. Jungjohann, William M. Mook, John Nogan, and Shadi A. Dayeh, “Dynamics of Contact Formation in the Cross-Section and Along InGaAs Nanowire Channels,” 59<sup>th</sup> Electronics Materials Conference, University of Notre Dame, South Bend, Indiana, Jun. 28 – 30, 2017.
  155. Ren Liu, Renjie Chen, Sang Heon Lee, Sandy Hinckley, Massoud L. Khraiche, John Scott, Deborah Pre, Yoontae Hwang, Atsunori Tanaka, Yun Goo Ro, Yimin Zou, Anne G. Bang, and Shadi A. Dayeh, “High Density Individually Addressable Nanowire Arrays Record Intracellular Activity from Primary Rodent and Human Stem Cell Derived Neurons,” The 15<sup>th</sup> International Conference on Advanced Materials, Kyoto University, Kyoto, Japan, Aug. 27 – Sept. 1, 2017.
  156. Yun Goo Ro, Renjie Chen, Ren Liu, Ahmed Youssef, and Shadi A. Dayeh, “Mechanistic Studies for the Development of Thin Si Microwire Solar Cells for Wearable Electronics,” The 15<sup>th</sup> International Conference on Advanced Materials, Kyoto University, Kyoto, Japan, Aug. 27 – Sept. 1, 2017.
  157. Atsunori Tanaka, Woojin Choi, Renjie Chen, and Shadi A. Dayeh, “When GaN and Si Tango, Thermal Mismatches are Overcome for Thick GaN-on-Si Vertical Power Devices,” The 15<sup>th</sup> International Conference on Advanced Materials, Kyoto University, Kyoto, Japan, Aug. 27 – Sept. 1, 2017.
  158. Renjie Chen, Katherine L. Jungjohann, William M. Mook, John Nogan, and Shadi A. Dayeh, “Recording and Analysis of the Atomic Scale Dynamics of Contact Formation in InGaAs Nanowires by In-situ Heating TEM,” CINT Users Meeting, Santa Fe, New Mexico, Sept. 25-26, 2017. **(Invited)**
  159. Mehran Ganji, Atsunori Tanaka, and Shadi A. Dayeh, “Scaling Effects on the Electrophysiological Stimulation Capabilities of PEDOT:PSS, Pt, and Au” 232nd Electrochemical Society Meeting, National Harbor, Maryland, Oct. 1 – 5, 2017.
  160. Mehran Ganji and Shadi A. Dayeh, “Nanoporous Au Improves Metal-PEDOT:PSS Adhesion in Neural Electrodes,” 60<sup>th</sup> Electronics Materials Conference, University of California Santa Barbara, California, Jun. 27 – 29, 2018.
  161. Ren Liu, Sang Heon Lee, Yun Goo Ro, Atsunori Tanaka, Agnieszka D’Antonio-Chronowska, Deborah Pre, Kelly Frazer, Anne Bang and Shadi A. Dayeh, “High-Yield, Ultra Sharp Nanowire Arrays for Intracellular Recordings of Excitable Cells,” 60<sup>th</sup> Electronics Materials Conference, University of California Santa Barbara, California, Jun. 27 – 29, 2018.
  162. Hongseok Oh, Siarhei Vishniakou, Gyu-Chul Yi, and Shadi A. Dayeh, “Flexible ZnO Thin-Film Transistor Array for Real-Time Force Imaging Technology in Wearable Devices,” 60<sup>th</sup> Electronics Materials Conference, University of California Santa Barbara, California, Jun. 27 – 29, 2018.
  163. Atsunori Tanaka, Renjie Chen, Woojin Choi, and Shadi A. Dayeh, “Structural and Electrical Characterization of Defect Annihilation in Thick GaN Layers on Si, GaN, and CTE Matched Substrates,” 60<sup>th</sup> Electronics Materials Conference, University of California Santa Barbara, California, Jun. 27 – 29, 2018.
  164. Woojin Choi, Atsunori Tanaka, and Shadi A. Dayeh, “Self-Aligned Vertical Trench Gate 15 $\mu$ m-Thick GaN MISFETs on Si,” 60<sup>th</sup> Electronics Materials Conference, University of California Santa Barbara, California, Jun. 27 – 29, 2018.
  165. Atsunori Tanaka, Woojin Choi, Renjie Chen, and Shadi A. Dayeh, “Si Complies with GaN to Overcome Thermal Mismatches for the Heteroepitaxy of Thick GaN on Si,” 2018 Compound Semiconductor Week, Massachusetts Institute of Technology, Boston, Massachusetts, May 29 – June 1, 2018. **(Best paper award)**



166. Woojin Choi, Atsunori Tanaka, Renjie Chen, and Shadi A. Dayeh, "Vertical 18  $\mu\text{m}$  Thick GaN Trench Gate MISFETS on Si," 2018 Compound Semiconductor Week, Massachusetts Institute of Technology, Boston, Massachusetts, May 29 – June 1, 2018.
167. Lorraine Hossain, John Hermiz, Ezequiel Arneodo, Mehran Ganji, Nick Rogers, Timothy Gentner, Vikash Gilja, and Shadi A. Dayeh, "Translation of PEDOT/Parylene C ECoG Microelectrode Arrays for Recording Stimulus Driven Action Potentials in Songbirds," 2018 Society for Neuroscience Meeting, San Diego Convention Center, Nov. 3-7, 2018.
168. Mehran Ganji, Lorraine Hossain, Ezequiel Arneodo, John Hermiz, Angelique Paulk, Vikash Gilja, Sydney Cash, Eric Halgren, Timothy Gentner, and Shadi A. Dayeh, "Platinum Nanorod (PtNR) Microelectrodes Record Action Potentials from the Cortical Surface" 2018 Society for Neuroscience Meeting, San Diego Convention Center, Nov. 3-7, 2018.
169. Nicholas Rogers, Lorraine Hossain, Martin Thunemann, Kivilcim Kilic, Payam A. Saisan, Qun Cheng, Kimberly Weldy, Vikash Gilja, Shadi Dayeh, and Anna Devor, "Towards Reconstruction of Neuronal Circuit Activity from Electrophysiological Signals Obtained from the Cortical Surface," 2018 Society for Neuroscience Meeting, San Diego Convention Center, Nov. 3-7, 2018.
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