Dr. Sanjay Banerjee
banerjee@ece.utexas.edu; 512-924-4799(cell); banerjeelab.mer.utexas.edu

Selected Recent Testifying Experience **(represented the underlined party in each case)**

1. Runergy- Trina, IPR 2025-, 00006, 00007 Expert reports, 2024.
2. Lam vs. Inpria, IPR 2024-00033 expert reports, deposed, Sept. 20204.
3. CanSolar-REC vs. Maxeon, expert reports IPR 2024-01038; 2024-01039; 2024-01040
4. Micron vs. YMTC, expert reports IPR2024-00653; 2024-00910
5. GlobalFoundries vs. Greenthread, expert reports; deposed IPR 2023-00001; 2024-00016-21
6. AGST vs. CanSolar, ITC, testified, Robert Kent,Turner Boyd , 2022.
7. Arigna vs. Volkswagen, BMW, GM, IPR deposed, J.P. Long, Finnegan, 2021.
8. Japan Display, Panasonic vs. Tianma, 2:20-cv-00283-JRG, Eastern District Texas, Dan Klodowski, Finnegan, Expert Report, 2021 (won).
9. Solaria vs. CanSolar, Inv. No. 337-TA-1223, Nigel Ray, Steptoe, Testified at ITC, 2021, won.
10. LONGi Solar, REC, Jinko vs. Hanhwa, IPR US 9,893,215 and ITC *337-TA-1151*. Expert reports, deposed, Jason Greenhut, Sidley, 2019. Won at the ITC.
11. ASM vs. Hitachi Kokusai Electric, IPR2018-01523 Patent No. 7,622,007, IPR2018-01584, Patent No. 6,783,627, IPR2018-01479, Patent No. 6,514,869, Scott Tester (Morgan Lewis), settled, 2019.
12. BitMicro vs. Samsung, Memory, ITC, (US 6529416); (US 8093103); (US 7826243) Justin Kimble, Bragalone, Claim construction reports for Markman, ITC 2018. Expert Reports, Deposed. Settled in client's favor before trial, April 2019..
13. Diodes vs. North Plates, (IPR 2018- 7,564,097), Darren Franklin, ShepardMullin expert reports 2018, settled.
14. Micron vs. Lonestar (IPR for 6,023,085; 5,872,038; 6,103,611), CMOS, Jason Lang, Weil, expert reports, deposed; 2018
15. TSMC vs. IP Bridge (IPR2016-01264; IPR2017-00931), CMOS Fabrication, Stephen Kabakoff and J.P. Long (Finnegan), deposed, won 2017
16. Micron vs. Harvard (IPR2017-01493 for 8,334,016; 6,969,539); ALD, Jason Lang, Weil, deposed, settled in client's favor, 2017
17. Freescale vs. Marvell (Case No. 12-CV-644 in W.D. Texas; deposed), DRAM, Brian Mack, Quinn Emanuel, 2014
18. Cypress vs. GSI (3:13-CV-02013-JST in Northern District of CA, expert report, deposed, settled), Semiconductor Memory architecture, Brent Yamashita, DLA Piper, 2014
19. Crocus vs. NYU (Case IPR2014-00047 Patent 6,980,469 B2, deposed), STTRAM, Stephanie Schoenwald, Steptoe & Johnson, 2014; patent invalidated
20. HSM vs. Qualcomm (Case1:11-CV-00770-RGA in Delaware), settled, Memory sense amps, Drew Koning, Cooley, 2014, settled.
21. Spansion vs. Macronix (ITC 337-TA-893, testified at ITC), settled, Flash memory, Janice Jabido, Ropes and Gray, 2014
22. TPL vs. Seiko, Dell, HP, Acer, Newegg, Brother (ITC Investigation No. 337-TA-841; testified at ITC on behalf of all 6 respondents and won), Flash memory, Matt Hertko, Kirkland Ellis, Hogan Lovells, Kenyon, Banner Witkoff, Webb, 2013
23. Intellectual Ventures vs. Hynix (C.A. No. 10-1066 (SLR) (MPT), District of Delaware, Non-testifying expert), DRAMs, Brian Mack, Quinn Emanuel 2012
24. Smart Modular vs. Netlist (Case No. 2:12-CV-02319-MCE-EFB in Eastern District of California, deposed), Memory modules, Ed Sikorski, DLA, 2012.
25. Microsoft vs. Motorola (deposed in ITC case 337-TA-744 and won) Flash memory file systems, Brian Mack, Quinn Emanuel, 2011
26. Rambus vs. Samsung (Case C 05-00334 RMW; testified in Northern District of California and won), RDRAM, Jennifer Polse, Munger Tolles, 2008
27. Fujitsu Limited & Fujitsu Microelectronics America, Inc. vs. Nanya Technology Corporation, settled, DRAM, Shore Chan Bragalone, 2007
28. Toshiba America vs. Hynix Semiconductor , settled, DRAM, Townsend & Townsend & Crew 2005
29. Sandisk vs. STMicroelectronics, Case 337-TA-526, Testified at ITC, Flash memory, Wilson Sonsini, 2004
30. Motorola vs. STMicroelectronics, ICs, Settled, Jones Day, 2004
31. Varian vs. Nissin (Case No.: 04-CA-375 (LY), Western District of Texas); Deposed; Ion implanter, settled before trial, Shearson Lehman, 2004

Sanjay Banerjee is the Cockrell Family Regents Chair Professor of Electrical and Computer Engineering at the University of Texas at Austin. He received his B.Tech from the Indian Institute of Technology, Kharagpur, and his M.S. and Ph.D. from the University of Illinois at Urbana-Champaign in 1979, 1981 and 1983 respectively, all in electrical engineering. As a Member of the Technical Staff, Corporate Research, Development and Engineering of Texas Instruments Incorporated from 1983-1987, he worked on polysilicon transistors and dynamic random access trench memory cells used by Texas Instruments in the world's first 4Megabit DRAM. He has been Assistant Professor (1987-90), Associate Professor (1990-93), and Professor (1993-) at The University of Texas at Austin. He has over 1000 archival refereed publications/talks, 10 books/chapters, and 35 U.S. patents, and has supervised over 80 Ph.D. and 70 MS students. His students have received 15 Best Papers Awards at various conferences, and he has presented over 150 invited talks. He received the Engineering Foundation Advisory Council Halliburton Award, 1991, the Texas Atomic Energy Fellowship (1990-1997), Cullen Professorship (1997-2001) and the Hocott Research Award from UT Austin (2007). He has won the SIA/SRC University Researcher Award (2017), IEEE Grove Award (2014), Distinguished Alumnus Award, IIT (2005), Industrial R&D 100 Award (2004), ECS Callinan Award (2003), IEEE Millennium Medal (2000), NSF Presidential Young Investigator Award (1988), and several Best Paper Awards and SRC Inventor Recognition Awards. He was a Distinguished Lecturer for IEEE Electron Devices Society, and the General Chair of the IEEE Device Research Conference, 2002. He is a Fellow of IEEE, APS, AAAS and NAI. He is active in the areas of beyond-CMOS nanoelectronic transistors based on 2D materials and spintronics, fabrication and modeling of advanced MOSFETs, and solar cells.

Sanjay Kumar Banerjee

Current Position: Cockrell Family Regents Chair in Electrical and Computer Engineering, 1999-

Education: University of Illinois, PhD (Electrical Engineering), 1983
University of Illinois, MS (Electrical Engineering), 1981
Indian Institute of Technology at Kharagpur, India, B. Tech (Electronics), 1979

Professional Engineer: Texas

Previous Positions: Director, Microelectronics Research Center, 1999-2024
Cullen Trust Endowed Professorship in Engineering, 1997-2001
University of Texas, Assoc. Director, Microelectronics Research Center, 1996-99
University of Texas, Professor, September 1993-
University of Texas, Associate Professor, September 1990- August 1993
University of Texas, Assistant Professor, September 1987- August, 1990
Texas Instruments, Corporate R& D, Member of Technical Staff, 1983-Aug. 1987

Honors and Awards:

Fellow, National Academy of Inventors (2021)
SIA/SRC University Research Award (2017)
IEEE Andrew Grove Award (2014)
Fellow of American Association for Advancement of Science (2007)
Hocott Research Award, Univ. of Texas, 2007
Fellow, American Physical Society, 2006
Distinguished Alumnus Award, IIT, 2005
Industrial R&D 100 Award (with R.Singh) 2004
Electrochemical Society Thomas D. Callinan Award, 2003
IEEE Millennium Medal, 2001
SRC Inventor Recognition Awards, 1994, 2000, 2009
Best Paper Awards (15) @ ISSCC, SRC TECHCON, DARPA, DRC
Who's Who Listings (Marquis)
Cullen Professorship, Univ. of Texas, 1997- 2001
Distinguished Lecturer, IEEE Electron Devices Society (1997-2003), Adcom Member till 1998
Fellow of IEEE, 1996
Engineering Foundation Advisory Council Halliburton Award, 1991
Texas Atomic Energy Centennial Fellowship, 1990-97
NSF Presidential Young Investigator Award, 1988
Jagadis Bose and National Science Talent Search Scholarships, India, 1974-79
Institute Medal; &Swapan Saha Prize for Highest Ranking UG (ECE), I.I.T., 1979
Phi Kappa Phi

Professional Society and Major Government Committees:

Technical Advisory Board: Applied Novel Devices (current) AstroWatt, DSM Semiconductors, Cambrios, Nanocoolers Inc., BeSang Memories, Organic ID and ITU Ventures;Gerson Lehmann Group, NY; Austin Community College; Asia Pacific IIIT; Rochester Institute of Technology, HSMC Foundry

IEEE Dan Noble Award Committee, 2010-13 (Chair, 2012-13)
Congressional round-table panel member on nanotechnology, Feb. 2008
Member on International Technology Roadmap for Semiconductors
Siemens Westinghouse Science Talent Contest Judge, 2003
Morgan & Claypool Publishers, Lectures in Electronic Materials &Devices, Series Editor
SISPAD, Program Committee, 2005-6
Electrochemical Society Symposium on SiGe, Program Committee, 2004
IRPS, Program Committee, 2005
12th Int. Workshop on Physics of Semiconductor Devices, Int. Advisory Committee
Int. Advisory Committee, Int. Conf. on MEMS and Nanotechnology, IIT, 2005
Program Committee, International SiGe Technology and Device Meeting, 2004-2012
IEEE Device Research Conference Technical Program Chair, 2000-01, General Chair, 2001-02
Editorial Board, Elsevier Science, 2001
IEDM Program Committee, Modeling and Simulation, Session Chair, 2001-03
ECS Session Chair, Toronto, Canada, May 2000
Program Committee, IEEE Int. Conf. Communications, Computers, Devices, Kharagpur, 2000.
IEEE Device Research Conference Program Committee/Local Arrangements Chair, 1999-2000
NSF Workshop Co-Organizer for "Front and Back-end Processes", Austin, TX 1999
Eleventh Int. Ion Implant Tech. Meet. Program Committee and Publications Chair, 1995-1996.
IEEE Symposium on VLSI Technology, Committee Member, 1992-98
NSF Workshop Organizer for "Silicon-Germanium Devices", Austin, TX 1999
IEEE University Government Industry Microelectronics Symp., General Chairman, 1994-1995
IEEE International Electron Devices Meeting, (Device Technology/ Session Chair: 1989-90)
IEEE Conf. on Electromagnetic Field Computation, Chair Comp. in Electron Dev., CA, 1992
Panel Member, SRC Conference on Integration of Novel Processes, 1991

Sponsored Research:

Grant title: "Three-Dimensional IC Technology,"
Co-Principal Investigator:S.Banerjee
Other Investigators: D.L. Kwong
Sponsoring Agency: Texas Advanced Technology Program
Duration: June 1988-August 1990.

Grant title: "High Speed Devices and VLSI Structures by Laser-Enhanced Epitaxy,"
Principal Investigator: S.Banerjee
Sponsoring Agency: Texas Advanced Technology Program
Duration: June 1988-August 1990.

Grant title: "Optoelectronic Devices by Photo-enhanced Chemical Vapor Deposition,"
Principal Investigator: S.Banerjee
Sponsoring Agency: National Science Foundation PYI
Duration: August 1988- July 1993.

Grant title: "GaAs-on-Si MESFET Modeling,"
Principal Investigator: S.Banerjee
Sponsoring Agency: Texas Instruments, Inc.
Duration: December 1988- August 1989.

Grant title: "Understanding and Modeling of Unit Processes"
Co-Investigator: S.Banerjee
Other Investigators: W.Adcock (PI), A.Tasch (Co-PI), I.Trachtenberg (Co-PI), D.Kwong, J.Lee, T.Edgar and J.Ekerdt
Sponsoring Agency: SEMATECH and SRC
Duration: December 1988- August 1993.

Grant title: "RPCVD Epitaxial Silicon and Insulators for Use in 3-D CMOS Integrated Circuits,"
Co-Investigator: S.Banerjee
Other Investigators: A.Tasch (P.I.), A.Cowley and R.Jones
Sponsoring Agency: Office of Naval Research
Duration: Sept. 1987- March 1990.

Grant title: "Ballistic and Quantum Transport in Si Devices at Cryogenic Temperatures"
Principal Investigator:S.Banerjee
Other Investigators: J.Lee
Sponsoring Agency: Texas Advanced Technology Program
Duration: November 1989- November 1991.

Grant title: "Polysilicon Transistor Modeling,"
Principal Investigator: S.Banerjee
Sponsoring Agency: Motorola
Duration: September, 1991-August, 1993.

Grant title: "Acquisition of High Resolution Transmission Electron Microscope,"
Principal Investigator: L.Rabenberg
Other Investigators: S.Banerjee, J.Goodenough, A.Heller, P.Ho and A.Manthiram
Sponsoring Agency: National Science Foundation
Duration: 10/92-10/93

Grant title: "Atomic Layer Epitaxy of Group IV Semiconductors,"
Co-Principal Investigator: S.Banerjee
Other Investigators: A.Tasch (P.I.), A.Cowley, J.Ekerdt and R.Jones
Sponsoring Agency: Office of Naval Research
Duration: February 1991-August 1996.

Grant title: "Materials and Bulk Processes"
Co-Investigator: S.Banerjee
Other Investigators: A.Tasch (PI), D.Kwong, J.Lee
Sponsoring Agency: SRC/ SEMATECH
Duration: September 1993- August 1998.

Grant title: "Synthesis, Growth and Analysis of Electronic Materials,"
Co-Investigator: S.Banerjee
Other Investigators: J.White (P.I) and 11 others from ECE, Chemistry and Physics
Sponsoring Agency: National Science
Duration: March 1991- March, 1996.

Grant title: "Transport in MOSFETs"
Principal Investigator: S.Banerjee
Sponsoring Agency: Motorola
Duration: August, 1993-August, 1994.

Grant title: "Flash EEPROMs"
Principal Investigator: S.Banerjee
Sponsoring Agency: AMD
Duration: May, 1993-December, 1996.

Grant title: "LDO Thin Film Transistors"
Principal Investigator: S.Banerjee
Sponsoring Agency: Micron
Duration: March, 1993- April, 1995.

Grant title: "Ultra Shallow Junction Technology"
Principal Investigator: S.Banerjee
Sponsoring Agency: SEMATECH
Duration: January 1994- December 1996.

Grant title: "SIMS Analysis of Polysilicon-on-Silicon"
Principal Investigator: S.Banerjee
Sponsoring Agency: SEMATECH
Duration: September 1994- August 1995.

Grant title: "RTP Implant Monitors"
Principal Investigator: S.Banerjee
Sponsoring Agency: SEMATECH
Duration: September 1995- August 1996.

Grant title: "Ultra-shallow Junction Formation and 2-D Dopant Profiling"
Principal Investigator:S.Banerjee
Other Investigators: K.Shih
Sponsoring Agency: Texas Higher Education Coordinating Board
Duration: January 1996- December 1997.

Grant title: "Analysis of Deep Submicron MOSFETs"
Principal-Investigator: S.Banerjee
Other Investigators: A.Tasch
Sponsoring Agency: Semiconductor Research Corporation
Duration: October 1998- September 1999.

Grant title: "Unrestricted Grant"
Principal Investigator: S.Banerjee
Sponsoring Agency: Various Donors
Duration: No expiration

Grant title: "Synthesis, Growth and Analysis of Electronic Materials,"
Co-Investigator: S.Banerjee
Other Investigators: J.White (P.I) and 11 others from ECE, Chemistry and Physics
Sponsoring Agency: National Science Foundation STC
Duration: March 1996- February, 2002.

Grant title: "Ultra-shallow Junction Process Integration"
Principal Investigator: S.Banerjee
Sponsoring Agency: SEMATECH
Duration: September 1997- December 2001.

Grant title: "Si and Ge Thin Film CVD, Modeling and Control"
Co-Principal Investigator: S.Banerjee
Other Investigators: J.Ekerdt (P.I.), M.Downer, I.Trachtenberg; Univ. of Wisconsin
Sponsoring Agency: Dept. of Defense-MURI
Duration: July 1995-July 2000

Grant title: "Ultra-shallow Junction Technology"
Principal Investigator:S.Banerjee
Sponsoring Agency: Texas Higher Education Coordinating Board
Duration: January 1998- August 2000.

Grant title: "Channel Engineering in Si-Ge-C MOSFETs "
Principal-Investigator: S.Banerjee
Other Investigators: A.Tasch
Sponsoring Agency: Semiconductor Research Corporation
Duration: October 1997- September 2000.

Grant title: "Advanced Annealing"
Principal Investigator:S.Banerjee
Sponsoring Agency: Texas Higher Education Coordinating Board
Duration: January 2000- December 2001.

Grant title: "Quantum Transport in Heterostructure MOSFETs "
Principal-Investigator: S.Banerjee
Other Investigators: A.Tasch
Sponsoring Agency: Semiconductor Research Corporation
Duration: October 1999- September 2002.

Grant title: "Front End Processing"
Principal-Investigator: S.Banerjee
Other Investigators: A.Tasch, D.Kwong, J.Lee
Sponsoring Agency: SRC/ SEMATECH
Duration: April 1998- March 2001.

Grant title: "Vertical Si-Ge-C MOSFETs "
Principal-Investigator: S.Banerjee
Sponsoring Agency: Semiconductor Research Corporation
Duration: September 2000-August 2003.

Grant title: "Compact Modeling of Gate Current"
Principal-Investigator: S.Banerjee
Other Investigators: F.Register
Sponsoring Agency: Semiconductor Research Corporation
Duration: July 2000- September 2003.

Grant title: "Ion Implantation Modeling"
Principal-Investigator: S.Banerjee
Other Investigators: A.Tasch
Sponsoring Agency: Semiconductor Research Corporation
Duration: July 2000- September 2001.

Grant title: "Front End Processing"
Principal-Investigator: S.Banerjee
Other Investigators: D.Kwong, J.Lee, F.Register
Sponsoring Agency: SRC/ SEMATECH
Duration: April 2001- March 2003.

Grant title: "MARCO Focus Center on Device Structures"
PI at UT: S.Banerjee
Other Investigators: D.Kwong (with MIT, Stanford, UC Berkeley)
Sponsoring Agency: DARPA/SRC
Duration: Award announced February 2001 (3 year contract)

Grant title: "SiGe Flash EEPROMS with Quantum Dot Gates"
Principal Investigator:S.Banerjee
Sponsoring Agency: Texas Higher Education Coordinating Board
Duration: January 2002- December 2003.

Grant title: "MARCO Focus Center on Device Structures"
Principal-Investigator: S.Banerjee
Other Investigators: D.Kwong (with MIT, Stanford, UC Berkeley)
Sponsoring Agency: DARPA/SRC
Duration: Sept. 2003 (3 year contract)

Grant title: "High mobility Ge-channel MOSFETs "
Principal-Investigator: S.Banerjee
Sponsoring Agency: Semiconductor Research Corporation
Duration: September 2003-August 2006.

Grant title: "Monte Carlo and Quantum transport "
Principal-Investigator: S.Banerjee
Co-PI: L.F.Register
Sponsoring Agency: Semiconductor Research Corporation
Duration: September 2003-August 2006.

Grant title: "NIRT on Quantum Dot Memories "
Principal-Investigator: S.Banerjee
Other Investigators:J.Ekerdt, F.Register, G.Hwang
Sponsoring Agency: NSF
Duration: September 2003-August 2007.

Grant title: "High mobility Ge-channel MOSFETs "
Principal-Investigator: S.Banerjee
Sponsoring Agency: Texas Higher Education Coordinating Board
Duration: January 2004-Dec. 2005.

Grant title: “Advanced Materials Research Center"

Principal-Investigator: S.Banerjee
Other Investigators: 15 others
Sponsoring Agency: Texas
Duration: January 2004- Dec.2005

Grant title: "Advanced Processing and Prototyping Center"
Principal-Investigator: S.Banerjee
Other Investigators: 18 others
Sponsoring Agency: DARPA
Duration: 2005- Dec.2006

Grant title: "SiGe Nanostructures"
Co-Principal-Investigator: S.Banerjee,
Other Investigators: R.Huang
Sponsoring Agency: DOE
Duration: 2006- Dec.2009

Grant title: "Dopant Diffusion Modeling"
Principal-Investigator: S.Banerjee,
Other Investigators: G.Hwang
Sponsoring Agency: SRC
Duration: 2006- Dec.2009

Grant title: "NNIN "
Site Director: S.Banerjee
Sponsoring Agency: NSF
Duration: January 2004- August.2015

Grant title: "MARCO MSD Focus Center "
UT PI: S.Banerjee
Sponsoring Agency: DARPA/SRC
Duration: Sept. 2007-2012

Grant title: "CERA"
Principal-Investigator: S.Banerjee
Co-PIs: F.Register, R.Ruoff, E.Tutuc, A.Macdonald, D.Akinwande
Sponsoring Agency: DARPA/IBM
Duration: Sept. 2007-2012

Grant title: "NASCENT ERC "
Principal-Investigator: Bonnecaze, Sreenivasan
Banerjee (Device Thrust co-Leader)
Sponsoring Agency: NSF
Duration: January 2013- Feb.2018

Grant title: "Bay Area PV Conssortium led by Stanford/Berkeley"
Sponsoring Agency: DOE
Duration: Sept. 2015- August.2017

Grant title: "South West Academy of Nanoelectronics"
Director: S.Banerjee,
Other Investigators: F.Register, A.MacDonald and 15 others from 6 schools
Sponsoring Agency: SRC-NRI
Duration: 2006- Dec.2018

Grant title: "NSF-NNCI "
Site Director: S.Banerjee
Sponsoring Agency: NSF
Duration: Sept. 2015- August.2025

Grant title: "MURI-Room Temperature Polariton Condensates "
Principal-Investigator: Hui Deng (Michigan),
Co-PIs: S.Banerjee and 4 others
Sponsoring Agency: DoD MURI
Duration: Sept. 2017- August.2023

Grant title: "Soft-FET "
PI: J.Kulkarni, S.Banerjee (co-PI)
Sponsoring Agency: NSF
Duration: Sept. 2018- August.2022

Grant title: "EFRI- sub-contract from UT Dallas"
PI: S.Banerjee
Sponsoring Agency: NSF
Duration: Sept. 2018- August.2022

Grant title: "3D CMOS using CVD TMD"
PI: S.Banerjee
Sponsoring Agency: SRC
Duration: Jan. 2021- Dec.2023

Grant title: "BEOL Transistor"
PI: S.Banerjee
Sponsoring Agency: TI, $85k
Duration: June. 2024- Dec.2025

Grant title: "TMD FETs"
PI: S.Banerjee
Sponsoring Agency: Samsung, $720k
Duration: Sept. 2023- Aug.2026

Grant title: "ALE Modeling"
PI: S.Banerjee; co-PI Gyeong Hwang (ChemE)
Sponsoring Agency: Samsung, $660k
Duration: Sept. 2023- Aug.2026

Grant Title: " Applied Novel Devices- Power FETs"
PI: S.Banerjee. co-PIs, Alex Huang, Alex Hanson
Sponsoring Agency: Army, $368,753
Duration: Aug. 2023- Aug.2025

Ph.D. supervision:
Keun Park, 1991
Ting Hsu, 1991
Sean Lian, 1991
Shubneesh Batra,1992
Sittampalam Yoganathan, 1992
Burt Fowler, 1992
David Kinosky, 1993
Surya Bhattacharaya, 1993
Brain Li, 1994
Le-tien Jung, 1994
Avinash Mahajan, 1994
Chung-you Hu, 1995
Indrajit Manna, 1995
Akif Sultan, 1996
Dean Samara, 1997
Soji John, 1998
Jacob Liu, 1999
Rajan Sharma, 1999
Ed Quinones, 1999
David Kencke, 2000
Christine Ouyang (with Tasch), 2000
Xiangdong Chen, 2001
Taehoon Kim, 2001
Siva Mudanai (with Tasch), 2001
Geng Wang (with Tasch), 2001
Yang Chen (with Tasch), 2001
Xin Wang, 2002
Hong-Jyh Li, 2002
Sung –Bo Hwang (with Edgar), 2002
Di Li (with Tasch), 2002
Yang-Yu Fan (with Register) 2002
Zhonghai Shi, 2002
Tat Ngai, 2002
Dong-Won Kim, 2003
Xiao Chen (with Rabenberg), 2003
Puneet Kohli, 2003
David Onsongo, 2003
Kartik Jayanarayan, 2004
Tongsheng Xia, (with Register), 2005
Taras Kirichenko (with Hwang), 2005
James Chen, 2005
Swaroop Ganguly (with MacDonald), 2006
Fei Lei (with Register), 2006
Li Lin (2006)
Sagnik Dey (2006)
Xiangdong Fan (with Register) 2006

Yueran Liu, 2006
David Kelly, 2006
Xiaofeng Fan (with Register) 2006
Bahniman Ghosh (with Register) 2007
Sachin Joshi, 2007
Joy Sarkar, 2007
Joseph Donnelly, 2009
Davood Shahrjerdi, 2008
Shan Tang, 2008
Rownak Zaman, 2008
Ning Kong, 2009
Yonghyun Kim, 2010
Hai Liu 2010
Dipanjan Basu (with Register), 2010
Tackhwi Lee, 2010
Se Hoon Lee, 2011
Ferdousi Fahmida, 2011
Jamil Mustafa, 2011
John David (with Register) 2011
Jung Hwan Yum, 2012
Seyoung Kim, (with Tutuc) 2012
Chang, Jiwon, (with Register) 2013
Priyamvada Jadaun, (with Register) 2013
Yujia Zhai, (with Willson) 2013
Michael Ramon (with Akinwande) 2013
Emmanuel Oneyagam, 2014
Sayan Saha, 2015
Urmimala Roy (with Register) 2015
Jason Mantey, 2015
Donghyi Koh (2016)
Chris Corbet (with Tutuc) 2016
Sangwoo Kang (2016)
William Hsu (2016)
Andreas Hsieh (2017)
Tanuj Trivedi (with Neikirk) (2017)
Atresh Sanne (2017)
Tanmoy Pramanik (with Register) (2018)
Jaehyun Ahn (2018)
Hema Movva (with Tutuc) (2018)
Harry Chou (2018)
Amritesh Rai (2019)
Rik Dey (with Register) (2019)
Omar Mohammed (2019)
Aqyan Bhatti (with Register) (2020)
Sayema Chowdhury (2022)
Teja Subrahmanyan (with Kulkarni) 2023

M.S.:
D.Bullock, 1990
K.Picone, 1991

J.Shen, 1991
R.Kovelamudi, 1992
S.Krishnan, 1992
M.Lobo, 1992
S.Ngaoram, 1993
A.Khan, 1993
D.Khanderkar, 1993
H.Taufique, 1994
S.Madireddi, 1994
J.Fretwell, 1995
M.Craig, 1995
J.Williamson, 1995
K.Reddy, 1995
J.Damiano, 1995
R.Gupta, 1995
K.Hassan, 1996
A.Lentvorski, 1997
S.Oswal, 1998
C.Seal, 1998
V.Agarwal, 1999
S.Nandan, 1999
S.Ravi, 1999
T.Ngai, 1999
V.Medina, 1999
H.Rahman, 1999
C.Twu, 2000
S. Oak, 2001
G. Shrivastava, 2001
R. Deppensmith, 2002
M. Swaminathan, 2002
L. Lin, 2003
L.Weltzer, 2004
D.Ahmad, 2005
I.Wiedmann, 2005
S. Ramachandran, 2005
A.Nanda 2007
N. Jain, 2008
N.Vora, 2008
K. Varahramyan, 2008
S. Kaur, 2010
Stephen Sczepaniak, 2015
Jessica Depoy, 2020
Alexander Klatt, 2021
Nick Pronin, 2021
Isaac Bodeman, 2022

Postdocs: Samit Ray (Chair Physics, IIT, Dean S N Bose Institute), Mark Loewe (IBM), Amitava Das (startup), Sabrina Grannan (NASA JPL), Freek Prins (Germany), Chuanbin Mao (Chair Prof. Oklahoma), Bhagawan Sahu (Global Foundries), Mathew Gilbert (Assoc. Prof. UIUC), Donwan.Ahn (Korea), Domingo Ferrer (IBM), Aparna Gupta (IIT), Samaresh Gucchait (Asst. Prof,. Howard), Sushant Sonde (Argonne), SeHoon Shin (Samsung), Priyamvada Jadaun (Cornell/IMEC), Marylene Palard, Bahniman Ghosh (IIT), Rudresh Ghosh (NovaCentrix), Victor Chi, Sungkyu Kwon, Seung Heon Shin (Samsung**),** Anupam Roy (Asst. Prof. IIT), Sarmita Majumder (Sheetak), Ansh Gupta (IMEC), Nupur Navlakja, Prakriti Neha

Currrent Post-docs: Nilesh Pandey, Rajveer Jha

In progress (Ph.D):
Mathew DiSiena, Chris Luth, Ryan Schalip, Moonkyu Song, Siyu Wu, Sunny Bhakta, Hadi Darkhaneh, Jatin Singh, Hongming Zhang, Ashkan Aminian, Luke Sloan, Pranav Rama

Books and Invited Book Chapters:

1. Solid State Electronic Devices, 5th Ed. (2000), 6th Ed. (2005), 7th Ed. (2015), Prentice-Hall by B.Streetman and S.Banerjee
2. Effect of Surface Nitridation on the Electrical Characteristics of Germanium High-κ/Metal Gate Metal-Oxide-Semiconductor Devices, D. Q. Kelly, J. J.-H. Chen, S. Guha, and S. K. Banerjee. Invited Book chapter, Springer, 2007.
3. SiGe HFETs, S.Banerjee, The Silicon Heterostructure Handbook, 2005, Edited by John Cressler.
4. High-k Gate Dielectrics, Y.Fan. S.Mudanai, L. Register and S.Banerjee, 2003
5. Device Miniaturization and Simulation, S.Banerjee and B.Streetman in ULSI Devices, John Wiley, 2000 (C.Chang and S.Sze editors)
6. Dopant Diffusion, S.Banerjee in Handbook of Semiconductor Manufacturing Technology, Marcel Dekker, 2000, 2006 (Y.Nishi, B.Doering and J.Kilby editors).
7. Silicon-germanium Devices, S.Banerjee, Elsevier, 2001.
8. Novel 3D CMOS, S.Dey and S.Banerjee, Solid State Electronics Trends, 2009
9. X. Mou, L. F. Register and S. K. Banerjee, "Ultra-low-power pseudospintronics devices via exciton condensation in coupled two-dimensional material systems," in Nanoscale Materials and Devices for Electronics, Photonics and Solar Energy, Ed. Stephen Goodnick, Anatoli Korkin and Robert Nemanich, Springer, 2015
10. D. Reddy, L. F. Register and S. K. Banerjee, "Bilayer pseudoSpin Field Effect Transistor (BiSFET)" in "Beyond CMOS Logic Switches," T.-J. King and K. Kuhn, Eds., Cambridge: Cambridge Univ. Press, 2015.
11. Devices and defects in two-dimensional materials: outlook and perspectives, A Rai, A Roy, A Valsaraj, S Chowdhury, D Taneja, Y Wang, LF Register, SK Banerjee Defects in Two-Dimensional Materials, 339-401 (Invited Book Chapter) 2021.

1. US20200365464 11/19/2020
   Catalyst influenced chemical etching for fabricating three-dimensional sram architectures and optical waveguides, S.Sreenivasan, A.Mallavarapu, J.Kulkarni, M.Watts and S.Banerjee
2. US10,121,962 11/06/2018
   Method for fabricating magnetic solid state devices. L.F.Register, B.Ghosh, R.Dey and S.Banerjee
3. US9,825,218 11/21/2017
   Transistor that employs collective magnetic effects thereby providing improved energy efficiency, A.MacDonald, L.F. Register, E. Tutuc, I. Sodemann, H. Chen, X. Mou, S. Banerjee
4. US8,709,892 4/29/2014
   Nanoparticles in a flash memory using chaperonin proteins, C.Mao, S.Tang and S.Banerjee
5. US8,629,427 1/14/2014
   Topological insulator-based field-effect transistor, S.Banerjee, L.Register, A.MacDonald, B.Sahu, P.Jadaun and J.Chang
6. US8,263,967 9/11/2012
   Bi-layer pseudo-spin field-effect transistor, S.Banerjee, L.Register, A.MacDonald, D.Reddy, E.Tutuc
7. US8,198,707 6/12/2012
   Establishing a uniformly thin dielectric layer on graphene in a semiconductor device without affecting the properties of graphene, L.Colombo, S.Banerjee, S.Kim, E.Tutuc
8. US8188460 5/29/2012
   Bi-layer pseudo-spin field-effect transistor, S.Banerjee, L.Register, A.MacDonald, D.Reddy, E.Tutuc
9. US8,008,649 8/30/2011
   Incorporating gate control over a resonant tunneling structure in CMOS to reduce off-state current leakage, supply voltage and power consumption, L.Register and S.Banerjee
10. US6,744,083 6/1/2004
    Submicron MOSFET having asymmetric channel profile, X.Chen and S.Banerjee
11. US6,420,219 7/16/2002
    Thin film transistor and method, S.Batra, M.Manning, S.Banerjee and J.Damiano
12. US06320202 11/20/2001
    Bottom gated thin film transistors comprising Ge in a channel region, S.Banerjee and S.Batra
13. US06,319,799 11/20/2001
    High mobility heterojunction transistor and method, Q.Ouyang, A.Tasch and S.Banerjee
14. US06,313,486, 11/06/2001
    Floating gate transistor having silicon germanium channel layer, D.Kencke and S.Banerjee
15. US06,313,487 11/06/2001
    Vertical channel floating gate transistor having SiGe channel layer, D.Kencke and S.Banerjee
16. US06214652 4/10/2001
    Thin film transistor and method of forming thin film transistors, S.Batra, M.Manning, S.Banerjee and J.Damiano
17. US06,200,839 3/13/2001

Methods of making thin film transistors, S.Batra, M.Manning, S.Banerjee and L.Jung

18. US06166398 12/26/2000
Thin film transistors, S.Batra, M.Manning, S.Banerjee and L.Jung
19. US06017782 01/25/2000
Thin film transistor and method of forming thin film transistors, S.Batra, M.Manning, S.Banerjee and J.Damiano
20. US05985703 11/16/1999
Method of making thin film transistors, S.Banerjee
21. US05977560 11/02/1999
Thin film transistor constructions with polycrystalline silicon-germanium alloy doped with carbon in the channel region, S.Banerjee and S.Batra
22. US05953596 09/14/1999
Methods of forming thin film transistors, S.Batra, M.Manning, S.Banerjee and L.Jung
23. US05936262 08/10/1999 Thin film transistors, S.Batra, M.Manning, S.Banerjee and J.Damiano
24. US05904513 05/18/1999 Method of forming thin film transistors, S.Batra, M.Manning, S.Banerjee and J.Damiano
25. US05665981 09/09/1997
Thin film transistors and method of promoting large crystal grain size in the formation of polycrystalline silicon alloy thin films, S.Banerjee and S.Batra
26. US05548132 08/20/1996
Thin film transistor with large grain size DRW offset region and small grain size source and drain and channel regions, S.Batra, M.Manning, S.Banerjee and J.Damiano
27. US05546340 08/13/1996
Non-volatile memory array with over-erase correction, C.Hu, R.Richart, S.Garg and S.Banerjee
28. US05436474 07/25/1995
Modulation doped field effect transistor having built-in drift field, S.Banerjee, A.Tasch and B.Streetman
29. US05432366 07/11/1995
P-I-N MOSFET for ULSI applications, S.Banerjee, S.Bhattacharya and W.Lynch
30. US05109259 04/28/1992
Multiple DRAM cells in a trench, S.Banerjee
31. US05066607 11/19/1991
Method of making a trench DRAM cell with dynamic gain, S.Banerjee
32. US04999811 03/12/1991
Trench DRAM cell with dynamic gain, S.Banerjee
33. US04969019 11/06/1990
Three-terminal tunnel device, S.Banerjee
34. US04864374 09/05/1989
Two-transistor dram cell with high alpha particle immunity, S.Banerjee
35. US04713678 12/15/1987
dRAM cell and method, R.Womack, H.Shichijo, S.Banerjee and S.Malhi

1. M. Keever, H. Shichijo, K. Hess, S.Banerjee, L. Witkowski, H. Morkoc and B. Streetman, "Measurements of Hot-Electron Conduction and Real Space Transfer in GaAs-AlGaAs Heterojunction Layers,"*Appl. Phys. Lett.*, 38(1), 36-38, January 1981.
2. S.Banerjee and B. Streetman, "Experimental Studies of Laterally Seeded Recrystallized Polysilicon on Silicon Dioxide," *Proc. of IEEE UGIM*, v.5, pp.79-83, May 1983.
3. S.Banerjee and B. Streetman, "Theoretical and Experimental Study of Swept Line Electron Beam Annealing of Semiconductors," *J. Appl. Phys.*, 54(6), 1947-1955, June 1983.
4. S.Banerjee and B. Streetman, "Electron and Hole Traps in Silicon-on-Oxide Grown Using Lateral Epitaxy by Seeded Solidification," *J. Phys. D: Appl. Phys.*, November 1983.
5. S.Banerjee, R. DeJule, K. Soda and B. Streetman, "Planar Be-Implanted GaAs Junction Formation Using Swept-Line Electron Beam Annealing," *IEEE Trans. Elec. Dev.*, 30 (12), 1755-1760, December 1983.
6. S.Banerjee, B. Lee, J. Baker, D. Reed and B. Streetman, "Annealing of Ion-Implanted Silicon-on-Insulator Films Using a Scanned Graphite Strip Heater," *Thin Solid Films*, 115, 19-26, 1984.
7. H. Shichijo, S. Malhi, A. Shah, G. Pollack, W. Richardson, M. Elahy, S.Banerjee, R. Womack and P. Chatterjee, "TITE RAM: A New SOI DRAM Gain Cell for MBit DRAMs," *Proc. of ICSSDM,* v. 16, pp. 265-268, June, 1984.
8. S.Banerjee, R. Tong, B. Lee, R. DeJule, B. Streetman and H. Lam, "Implantation and Annealing Studies of Laterally Seeded Recrystallized Silicon on Silicon Dioxide," *J. Electrochem. Society*, 131(6), 1409-1416, June 1984.
9. G. Pollack, W. Richardson, S. Malhi, T. Bonifield, H. Shichijo, S.Banerjee, M. Elahy, A. Shah, R. Womack and P. Chatterjee, "Hydrogen Passivation of Polysilicon MOSFETs From a Plasma Nitride Source," *IEEE Elec. Dev. Letters*, 5(11), 468-470, November 1984.
10. S.Banerjee, M. Elahy, H. Shichijo, G. Pollack, W. Richardson, S. Malhi, A. Shah, P. Chatterjee, H. Lam and R. Womack, "Comparison of Accumulation and Inversion Mode LPCVD Polysilicon MOSFET Characteristics for Memory Applications," *IEEE Trans. Elec. Dev.*, 31(12), 1983, December 1984.
11. M. Elahy, H. Shichijo, P. Chatterjee, A. Shah, S.Banerjee, and R. Womack, "Trench Capacitor Leakage in High Density DRAMs," *IEEE Elec. Dev. Letters*, 5(12), 527-530, December 1984.
12. M. Elahy, H. Shichijo, P. Chatterjee, A. Shah, S.Banerjee and R. Womack, "Trench Capacitor Leakage in MBit DRAMs," *IEEE IEDM Technical Digest*, p. 248-251, December 1984.
13. H. Shichijo, S. Malhi, W. Richardson, G. Pollack, A. Shah, L. Hite, S.Banerjee, M. Elahy, R. Sundaresan, R. Womack, H. Lam and P. Chatterjee, "Polysilicon Transistors in VLSI MOS Memories," **Invited Talk**, *IEEE IEDM Technical Digest,* p. 228-231, December 1984.
14. S.Banerjee, "Reliability Studies on Thin Film Polysilicon MOSFETs," T.I. Semiconductor Reliability Workshop, Dallas, Texas, September 1984.
15. H. Shichijo, S.Banerjee, G. Pollack, W. Richardson, M. Bordelon, A. Shah, S. Malhi, M. Elahy, R. Womack, C. Wang, J. Gallia, H. Davis and P. Chatterjee, "Trench Transistor DRAM Cell," *IEEE Elec. Dev. Letters*, 7(2), 119-121, February 1985.
16. S.Banerjee and B. Streetman, "Planar Junctions in Silicon on Oxide Grown Using Lateral Epitaxy by Seeded Solidification," *IEEE Trans. Elec. Dev.*, 32(4), 850-853, April 1985.
17. S.Banerjee and J. Baker, "Proximity Annealing of Sulfur-Implanted Gallium Arsenide Using a Strip Heater," *Jap. J. Appl. Phys.*, 24(5), L377-L379, May 1985.
18. J. Fossum, A. Ortiz.Conde, H. Shichijo and S.Banerjee, "Anomalous Leakage Current in LPCVD Polysilicon MOSFETs," *IEEE Trans. Elec. Dev.*, 32(9), 1878-1884, September 1985.
19. W. Richardson, D. Bordelon, G. Pollack, A. Shah, S. Malhi, H. Shichijo, S.Banerjee, M. Elahy, R. Womack, C. Wang, J. Gallia, H. Davis and P. Chatterjee, "A Trench Transistor Cross-Point DRAM Cell," *IEDM Technical Digest,* 714-717, December 1985.
20. H. Shichijo, S. Malhi, R. Sundaresan, S.Banerjee and H. Lam, "Process and Device Considerations for Small Grain Polysilicon MOS Transistors," **Invited paper**, *Proc. Mat. Res. Soc.,* v.53, pp.419-428, December 1985.

21. S. Malhi, H. Shichijo, S.Banerjee, R. Sundaresan, M. Elahy, G. Pollack, W. Richardson, A. Shah, L. Hite, R. Womack, P. Chatterjee and H. Lam, "Characteristics and Three-Dimensional Integration of MOSFETs in Small-Grain LPCVD Polycrystalline Silicon," *IEEE Trans. Elec. Dev.*, 32(2), 258-281, February 1985.
22. A.Shah, C. Wang, R. Womack, J. Gallia, H. Shichijo, H. Davis, M. Elahy, S.Banerjee, G. Pollack, W. Richardson, M. Bordelon, S. Malhi, C. Pilch, B. Tran and P. Chatterjee, "A 4MBit DRAM with Cross-Point Trench Transistor Cell," *Proc. IEEE Int. Sol. Stat. Cir.* , February 1986. **(BEST PAPER AWARD**)
23. S.Banerjee, H. Shichijo, A. Nishimura, A. Shah, G. Pollack, W. Richardson, M. Bordelon, S. Malhi, M. Elahy, R. Womack, C. Wang, J. Gallia, H. Davis and P. Chatterjee, "Characterization of Trench Transistors for 3-D Memories," *VLSI Symp. Digest,* pp.79-80, May 1986.
24. A. Shah, C. Wang, R. Womack, J. Gallia, H. Shichijo, H. Davis, M. Elahy, S.Banerjee, G. Pollack, W. Richardson, M. Bordelon, S. Malhi, C. Pilch, B. Tran and P. Chatterjee, "A 4MBit DRAM with Trench Transistor Cell," *IEEE J. Solid State Cir.*, SC-21(5), 618-626, October 1986.
25. K. Rao, M. Elahy, D. Bordelon, S.Banerjee, H. Tsai, W. Richardson and R. Womack, "Trench Capacitor Issues in VLSI DRAM Cells," *IEEE IEDM Tech. Digest,* pp.140-143, December 1986.
26. H. Shichijo, A. Shah, C. Wang, R. Womack, J. Gallia, H. Davis, M. Elahy, S.Banerjee, G. Pollack, W. Richardson, M. Bordelon, S. Malhi, C. Pilch, B. Tran and P. Chatterjee, "A 4MBit DRAM with Cross-Point Trench Transistor Cell," *Nikkei Electronics*, Japan, 7.14, 189-208, 1986.
27. S.Banerjee, J. Coleman, B. Richardson and A. Shah, "A Band-to-Band Tunneling Effect in the Trench Transistor Cell," *VLSI Symp. Digest,* pp. 97-98, May 1987.
28. S.Banerjee, W. Richardson, J. Coleman and A. Chatterjee, "A New Three Terminal Tunnel Device," *IEEE Elec. Dev. Letters*, 8(8), 347-349, August 1987.
29. B. Shen, I. Chen, S.Banerjee, G. Brown, J. Bohlman, P. Chang and R. Doering, "A High Quality Tantalum Oxide Film for Advanced DRAM Application," *IEEE IEDM Tech. Digest.,* pp. 582-586, December 1987.
30. S.Banerjee and M. Bordelon, "A Model for the Trench Transistor," *IEEE Trans. Elec. Dev.*, 34 (12), 2485-2493, December 1987.
31. S. Banerjee, "Device Simulation of Trench Transistor Cell," *T.I. Technical Journal*, 4(1), 53-56, January 1987.
32. S.Banerjee, R. Sundaresan, H. Shichijo and S. Malhi, "Hot Electron Degradation of N-Channel Polysilicon MOSFETs," *IEEE Trans. Elec. Dev.*, 35 (2), 152-157, February 1988.
33. S.Banerjee, J. Coleman, W. Richardson and A. Shah, "Leakage Mechanisms in the Trench Transistor Cell," *IEEE Trans. Elec. Dev.*, 35(1), 108-116, January 1988.
34. L.Breaux, B.Anthony, T.Hsu, S.Banerjee and A.Tasch, "Silicon Homoepitaxy at 400 C using Remote Plasma-enhanced Chemical Vapor Deposition," *Proc. Mat. Res. Soc.,* v.2, pp. 47-58, March 1989.
35. K.Park, S.Batra, T.Lian, E.Yun, S.Banerjee, D.Kwong and A.Tasch, "Electronic Devices in Dielectrically Isolated Polycrystalline Silicon Thin Films," *Proc. Mat. Res. Soc.,* v.2, pp. 847-855, March 1989.
36. T.Hsu, L.Breaux, B.Anthony, S.Banerjee and A.Tasch, "RHEED Studies of Silicon Surface Reconstruction after Remote Hydrogen Plasma Cleaning," *Proc. Mat. Res. Soc.,* April, 1989.
37. H. Shin, A.F. Tasch, C.M. Maziar and S.Banerjee, "A New Approach to Verify and Derive a Transverse-Field Dependent Mobility Model for Electrons in MOS Inversion Layers," *IEEE Trans. Elec. Dev.,* 36(6), 1117-1124, June 1989.
38. B.Anthony, L.Breaux, T.Hsu, S.Banerjee and A.Tasch, "In Situ Cleaning of Silicon Substrate Surfaces by Remote-plasma excited Hydrogen," *J.Vac. Sci. Tech. B,* 7(4), 621-626, August 1989.
39. A.Tasch, S.Banerjee, L.Breaux, B.Anthony and T.Hsu, "Low Temperature Epitaxy Using Remote Plasma-enhanced Chemical Vapor Deposition," *Proc. SRC TRC on Silicon Epitaxy,* September 1989.

40. L.Breaux, B.Anthony, T.Hsu, S.Banerjee and A.Tasch, "Homoepitaxial Films Grown on Silicon (100) at 150 C by Remote Plasma-enhanced Chemical Vapor Deposition," *Appl. Phys. Lett.,* 55(18), pp.1885-1887, October, 1989.
41. T.Hsu, B.Anthony, L.Breaux, S.Banerjee and A.Tasch, "Remote Plasma-enhanced Chemical Vapor Deposition of Epitaxial Silicon on Silicon (100) at 150 C," *Proc. Mat. Res. Soc.*, Nov. 1989.
42. B.Anthony, T.Hsu, L.Breaux, S.Banerjee and A.Tasch, "Reaction Kinetics of Epitaxial Silicon Deposition at 200-400 C Using RPCVD," *Proc. Mat. Res. Soc*., Nov. 1989.
43. S.Batra, K.Park, C.Kyono, S.Bhattacharya, S.Banerjee, C.Maziar, D.Kwong, A.Tasch, M.Rodder and R.Sundaresan, "Rapid Thermal Annealing for H Passivation of Polysilicon MOSFETs from a Si_3N_4 Overcoat," *IEEE IEDM Tech. Dig.*, pp. 455-458, December 1989.
44. S.Banerjee, B.Shen, I.Chen, J.Bohlman, G.Brown and R.Doering, "Conduction Mechanisms in Sputtered Tantalum Pentoxide," *J. Appl. Phys*, 65(3), 1140-1146, February 1989.
45. T.Hsu, L.Breaux, B.Anthony, S.Banerjee and A.Tasch, "Crystalline Defects in Low Temperature Epitaxial Silicon Growth by RPCVD," Elect. Mat. Conf., Cambridge, Massachusetts, June, 1989.
46. T.Hsu, B.Anthony, L.Breaux, S.Banerjee and A.Tasch, "Low Temperature Silicon In Situ Cleaning and Homoepitaxy by Remote Plasma-enhanced Chemical Vapor Deposition," *Proc. SPIE*, March 1990.
47. K.Park, S.Batra, J.Lin, S.Yoganathan, S.Banerjee, J.Lee, S.Sun, J.Yeargain and G.Lux, "Effects of As Segregation and Electron Trapping on the Capacitance-Voltage Behavior of Polysilicon and Polycide Gates," *Proc. Mat. Res. Soc.* , April 1990.
48. B.Anthony, T.Hsu, L.Breaux, S.Banerjee and A.Tasch, "Experimental Studies of Silicon Growth Kinetics by RPCVD at Low Temperatures," *Proc. SPIE,* March 1990.
49. B.Anthony, T.Hsu, L.Breaux, S.Banerjee and A.Tasch, "Remote Plasma Enhanced CVD: Reaction Kinetics as a Function of Growth Parameters," Metallurgical. Soc.Proc-AIME, Anaheim, CA, February 1990.
50. T.Hsu, B.Anthony, L.Breaux, S.Banerjee and A.Tasch, "Defect Microstructure in Single Crystal Silicon Thin Films Grown at 150 C by RPCVD," Metallurgical. Soc.Proc-AIME, Anaheim, CA, February 1990.
51. L.Breaux, B.Anthony, T.Hsu, S.Banerjee and A.Tasch, "Defect-Free Remote Hydrogen Plasma Clean of Silicon (100) for Homoepitaxy," Metallurgical. Soc.Proc-AIME, Anaheim, CA, February 1990.
52. K.Park, S.Batra, S.Banerjee and G.Lux, " Ultra-shallow junctions in Silicon Using Amorphous and Polycrystalline Silicon Solid Diffusion Sources," Elec. Mat. Conf., Santa Barbara, CA, June 1990.
53. K.Park, S.Batra, S.Banerjee and G.Lux, "Discontinuity of P, As and B profiles at the Interface of Polycrystalline/ single Crystal Silicon," Elec. Mat. Conf., Santa Barbara, CA, June 1990.
54. T.Hsu, B.Anthony, R.Qian, S.Banerjee and A.Tasch, "Hydrogen Passivation of Si(100) Surface by Low Temperature Remote Hydrogen Plasma Clean for Silicon Epitaxy," Elec. Mat. Conf., Santa Barbara, CA, June 1990.
55. B.Anthony, T.Hsu, R.Qian, S.Banerjee and A.Tasch, "The Use of Langmuir Probe Measurements to Investigate the Reaction Mechanisms of Remote Plasma-enhanced Chemical Vapor Deposition," Elec. Mat. Conf., Santa Barbara, CA, June 1990.
56. K.Park, S.Batra and S.Banerjee, "Preferential Grain Growth in Heavily Doped Polysilicon During Rapid Thermal Annealing," Mat. Res. Soc. Symp., San Francisco, CA, April 1990.
57. K.Park, S.Batra, S.Banerjee and G.Lux, "Comparison of Amorphous and Polycrystalline Silicon Films as a Solid Diffusion Source for Advanced VLSI Processes," *Proc. Mat. Res. Soc.* , April 1990.
58. S.Batra, K.Park, S.Banerjee and G.Lux, "Diffusion of As and B in Polysilicon/Single Crystal Silicon Systems," *Proc. Mat. Res. Soc.* , April 1990.
59. S.Batra, K.Park, S.Banerjee and R.Sundaresan, "Comparative Studies of Furnace and Rapid Thermal Passivation for Accumulation and Inversion Mode Polysilicon-on-Oxide MOSFETs," *Proc. Mat. Res. Soc.* , April 1990.

60. S.Banerjee, A.Tasch, B.Anthony, T.Hsu, L.Breaux, and R.Qian "Remote Plasma-enhanced Chemical Vapor Deposition of Homo-Epitaxial Silicon on Silicon (100) at 150 C," *Proc. of Epitaxial Crystal Growth*, v.1, Trans. Tech. Publishers, Budapest, Hungary, April 1990 (**Invited**).
61. T.Hsu, L.Breaux, B.Anthony, S.Banerjee and A.Tasch, "Defect Microstructure in Low Temperature Epitaxial Silicon Grown by RPCVD," *J. Electron. Mat.*, 19 (4), 375-384, April 1990.
62. J.Lin, S.Banerjee, J.Lee and C.Teng, "Soft Breakdown in Titanium-Silicided Shallow Source Drain Junctions," *IEEE Elec. Dev. Lett.*, 11(5), pp.191-193, May, 1990.
63. B.Anthony, T.Hsu, L.Breaux, R.Qian, S.Banerjee and A.Tasch, "Remote Plasma-enhanced CVD of Silicon: Reaction Kinetics as a Function of Growth Parameters," *J. Electron.Mat.,* 19 (10), pp. 1089-1094, May 1990.
64. S.Batra, K.Park, S.Banerjee, D.Kwong, A.Tasch, R.Sundaresan and M.Rodder, "Rapid Thermal Hydrogen Passivation of Polysilicon MOSFETs," *Elec. Dev. Lett.*, 11(5), pp.194-196, May, 1990.
65. T.Hsu, B.Anthony, L.Breaux, R.Qian, S.Banerjee and A.Tasch, "Defect Microstructure in Single Crystal Silicon Thin Films Grown at 150 C by Remote Plasma-enhanced Chemical Vapor Deposition," *J. Electron. Mat.*, 19 (10), pp. 1043-1050, May 1990.
66. B.Anthony, T.Hsu, L.Breaux, R.Qian, S.Banerjee and A.Tasch, "Defect Free Remote Hydrogen Plasma Clean of Si (100) for Homoepitaxy," *J. Electron.Mat.,* 19 (10), pp. 1027-1032, May 1990.
67. K.Park, S.Batra, J.Lin, S.Yoganathan, S.Banerjee, J.Lee, S.Sun, J.Yeargain and G.Lux, "Anomalous Capacitance-Voltage Behavior due to Dopant Segregation and Carrier Trapping in As-implanted Polysilicon and Polycide Gates," *Appl. Phys. Lett.*, 56 (23), 2325-2327, June 1990.
68. S.Bhattacharya, S.Banerjee, J.Lee, A.Tasch and A.Chatterjee, "Design Issues for Achieving Latchup-free, Deep Trench-isolated, Bulk, Non-epitaxial, Submicron CMOS," *IEEE IEDM Tech. Digest*, p. 185-188, December 1990.
69. K.Park, S.Batra and S.Banerjee, "Study of P diffusion from poly into single crystal Si by TEM and SIMS," Mat. Res. Soc. Symp., San Francisco, CA, April 1990.
70. J.Lin, S.Banerjee, J.Lee and C.Teng, "Anomalous Leakage in Titanium Silicided Junctions," *J.Appl. Phys.*, 68 (3), 1082-1087, August 1990.
71. G.Yeric, A. Tasch and S.Banerjee, "A Universal MOSFET Mobility Degradation Model for Circuit Simulation," *IEEE Trans. CAD*, 9(10), pp.1123-1126, October 1990.
72. K.Park, S.Batra, S.Banerjee and G.Lux, "Comparison of Amorphous and Polycrystalline Silicon Films as a Solid Diffusion Source for Advanced VLSI Processes," *Proc. of SRC TECHCON*, v.2, October 1990.
73. B.Anthony, T.Hsu, R.Qian, J.Irby, S.Banerjee and A.Tasch, "In Situ Doping of Low Temperature Epitaxial Silicon Films Grown by Remote Plasma-enhanced Chemical Vapor Deposition," *Proc. Mat. Res. Soc.*, November 1990.
74. B. Fowler, D.Bullock, S.Lian and S.Banerjee, "Silicon Homoepitaxy at 300 C Using ArF Excimer Laser Photolysis of Disilane," *Proc. Mat. Res. Soc.*, November 1990.
75. S.Batra, K.Park, J.Lin, S.Yoganathan, J.Lee, S.Banerjee, S.Sun, J.Yeargain and G.Lux, "Effects of Dopant Redistribution, Segregation and Carrier Trapping in As-implanted MOS Gates," *IEEE Trans. Elec. Dev.*, 37(11), pp.2322-2330, Nov. 1990.
76. S. Yoganathan, S. Banerjee, and S.Chatterjee, "An Efficient Two-dimensional Hydrodynamic Simulator Using a Decoupled Algorithm", *Proc. ISDRS, vol.1,* December 1991.
77. R. Qian, I.Chung, B. Anthony, T. Hsu, J. Irby, D. Kinosky, S. Banerjee, A. Tasch, and C. Magee, "Growth and High Resolution TEM Characterization of Ge_xSi_{1-x}/Si Heterostructures by Remote Plasma-enhanced Chemical Vapor Deposition on Si (100)", *Proc. Mat. Res. Soc.* , Dec. 1991.
78. S.Batra, K.Park, S.Banerjee and G.Lux, "Comparison of Arsenic and Boron Diffusion in Polycrystalline/Single Crystal Silicon Systems," *J.Electrochem. Soc.*, 138(2), pp.545-549, Feb. 1991.
79. S.Bhattacharya, S.Banerjee, J.Lee, A.Tasch and A.Chatterjee, "The Impact of Trench Isolation on Latchup Immunity in Bulk, Non-epitaxial CMOS," *IEEE Elec. Dev. Lett.,* 12(2), pp.77-79, Feb. 1991.

80. S.Lian , B. Fowler, D.Bullock, and S.Banerjee, "ArF Excimer Laser-induced Photolytic Growth of Si Homoepitaxial Films from Si_2H_6 at 330 C," *Appl. Phys. Lett.* , 58(5), p.514-516, Feb. 1991.
81. S. Lian, B. Fowler, S. Krishnan, L. Jung, and S. Banerjee, "Silicon Homoepitaxy Using Photo-CVD: A RHEED and TEM Study", invited paper, *Mat. Science & Eng. B,* B10, p.181 Jan., 1991.
82. S. Lian, B. Fowler, S. Krishnan, and S. Banerjee, "Microstructure of Si Epitaxial Films Grown by Photo-Chemical Vapor Decomposition of Si_2H_6", American Physical Society Meeting on Semiconductor Interfaces and Microstructures, Cincinnati, OH, March 1991.
83. R. Qian, B. Anthony, T. Hsu, J. Irby, D. Kinosky, S. Banerjee, and A. Tasch, "Ge_xSi_{1-x}/Si Quantum Well Growth by Remote Plasma-enhanced Chemical Vapor Deposition", American Physical Society Meeting on Semiconductor Interfaces and Microstructures, Cincinnati, OH, March 1991.
84. K.Park, S.Batra, S.Banerjee and G.Lux, "Ultra-shallow junctions in Silicon Using Amorphous and Polycrystalline Silicon Solid Diffusion Sources," *J. Elec. Mat.,* 20 (3), pp. 261-266, March 1991.
85. T.Hsu, B.Anthony, R.Qian, J.Irby, S.Banerjee and A.Tasch, "Cleaning and Passivation of the Si(100) Surface by Low Temperature Remote Hydrogen Plasma Treatment for Si Epitaxy," *J. Electron.Mat.,* 20 (3), pp. 279-287, March 1991.
86. S. Yoganathan, S. Banerjee, T. Itoh, H. Shichijo, and S. El-Ghazaly, "A Highly Efficient Decoupled Transient Simulator Including Energy Balance for GaAs MESFETs", *Proc. NASECODE vol. VII*, April 1991.
87. J. Lin, K. Park, S. Batra, S. Banerjee, J. Lee, and G. Lux, "Effects of $TiSi_2$ Formation on Boron Penetration Through Gate Oxides in MOS Devices Under Rapid Thermal Processing", *Proc. of Mat. Res. Soc.,* April 1991.
88. S. Batra, K. Park, S. Banerjee, T. Smith, B. Mulvaney, and G. Lux, "Lateral Uniformity of Ultra-Shallow Junction Formed by Rapid Thermal Annealing in Polysilicon-on-Silicon Systems", *Proc. of Mat. Res. Soc.,* April 1991.
89. K. Park, S. Batra, and S. Banerjee, "Secondary Grain Growth in Heavily P Doped Polysilicon During Rapid Thermal Annealing", *Proc. of Mat. Res. Soc.,* April 1991.
90. B. Fowler, S. Lian, S. Krishnan, and S. Banerjee, "*In situ* Multiprocessing for Laser-enhanced Silicon Photo-epitaxy at 300˚ C", *Proc. of Mat. Res. Soc.,* April 1991.
91. T. Hsu, B. Anthony, R. Qian, J. Irby, D. Kinosky, S. Banerjee, A. Tasch, and C. Magee, "Heteroepitaxy of Si/Si_xGe_{1-x} Grown by Remote Plasma-enhanced Chemical Vapor Deposition", *Proc. of Mat. Res. Soc.,* April 1991.
92. B. Anthony, T. Hsu, R. Qian, J. Irby, S. Banerjee, and A. Tasch, "The Use of Langmuir Probe Measurements to Investigate the Reaction Mechanisms of Remote Plasma-enhanced Chemical Vapor Deposition", *J. Electron. Mat.*, 20(4), pp. 309-313, April 1991.
93. S. Lian, B. Fowler, L. Jung, S. Krishnan, and S. Banerjee, "Defect Microstructure of Si Homoepitaxial Films Grown by Laser Enhanced CVD from Si_2H_6", *Proc.of ECS*, May 1991.
94. S. Lian, B. Fowler, S. Krishnan and S. Banerjee, "*In situ* and *Ex situ* Characterization of Microstructure of Photo-epitaxial Growth at 300˚ C for ULSI Applications," SPIE Conference, Dallas, Texas, May 1991.
95. K. Park, S. Batra, and S. Banerjee, "The Role of Negatively Charged Vacancies in Secondary Grain Growth in Polycrystalline Silicon During Rapid Thermal Annealing", *Appl. Phys. Lett.*, 58(21), pp.2414-2416, May 1991.
96. J. Lin, K. Park, S. Batra, S. Banerjee, J. Lee, and G. Lux, "Enhancement of Boron Diffusion Through Gate Oxides in MOS Devices Under Rapid Thermal Silicidation", *Appl. Phys. Lett.*, 58(19), p.2123-2125, May 1991.
97. B. Fowler, S. Lian, S. Krishnan, L. Jung, and S. Banerjee, "ArF Laser-enhanced Photo-CVD of Silicon from Disilane", *Proc. of ECS*, May 1991.

98. R. Qian, T. Hsu, B. Anthony, J. Irby, D. Kinosky, S. Banerjee, A. Tasch, and C. Magee, "Crystallographic Characterization of Ge_xSi_{1-x}/Si Superlattices Grown by Remote Plasma-enhanced Chemical Vapor Deposition", *J.Appl. Phys.*, 70(6), p. 3324, June 1991.
99. K. Picone, S. Batra, K. Park, J. Lee, and S. Banerjee, "Characterization of Polysilicon-on-Single Crystal Si Junctions Formed by Rapid Thermal Processing for Polysilicon Emitter BJT and Elevated Source/Drain MOSFET Applications," SPIE Conference, Dallas, TX, May 1991.
100. J. Irby, D. Kinosky, R. Qian, B. Anthony, T. Hsu, S. Banerjee, A. Tasch, and C. Magee, "SIMS and Microstructural Analysis of *In situ* B-Doped Si Epitaxial Films Grown at 450˚ C by Remote Plasma-enhanced Chemical Vapor Deposition", SPIE Conference, Dallas, TX, May 1991.
101. J. Lin, K. Park, S. Batra, S. Banerjee, J. Lee, and G. Lux, "Effects of $TiSi_2$ Formation on Boron Penetration Through Gate Oxides in MOS Devices", SPIE Conference, Dallas, TX, May 1991.
102. B. Fowler, S. Lian, S. Krishnan, and S. Banerjee, "Growth Kinetic Model for ArF Laser-enhanced Si CVD Using a Factorial Design of Experiment", SPIE Conference, Dallas, TX, May 1991.
103. D. Kinosky, R. Qian, J. Irby, T. Hsu, B. Anthony, S. Banerjee, and A. Tasch, "Microstructural Characterization of Si/Si_xGe_{1-x} Heterostructures Grown by Remote Plasma-enhanced Chemical Vapor Deposition", SPIE Conf., Dallas, TX, May 1991.
104. K. Picone, S. Batra, K. Park, M. Lobo, S. Bhattacharya, J. Lee, and S. Banerjee, "Leakage Characteristics and Lateral Uniformity of Ultra-Shallow Junctions Formed Using Polysilicon and Amorphous Silicon Diffusion Source", Elec. Mat. Conf., Boulder, CO, June 1991.
105. S. Batra, K. Park, K. Picone, M. Lobo, S. Bhattacharya, and S. Banerjee, "Preferential Orientation of Secondary Grains in Heavily Doped Ultra-thin Polysilicon Films", Elec. Mat. Conf., Boulder, CO, June 1991.
106. R. Qian, B. Anthony, T. Hsu, J. Irby, D. Kinosky, S. Banerjee, A. Tasch, and C. Magee, "Microstructural Analysis of Ge_xSi_{1-x}/Si Quantum Wells Grown by Remote Plasma-enhanced Chemical Vapor Deposition on Si (100)", Elec. Mat. Conf., Boulder, CO, June 1991.
107. S. Lian, B. Fowler, L, Jung, S. Krishnan, and S. Banerjee, "Characterization of Microstructure of Si Epitaxy Grown by 193 nm ArF Excimer Laser Photolysis of Si_2H_6", Elec. Mat. Conf., Boulder, CO, June 1991.
108. B. Fowler, S. Lian, S. Krishnan, L. Jung, and S. Banerjee, "ArF Excimer Laser-Enhanced Photo-CVD of Silicon from Disilane: Growth Kinetic Models", Elec. Mat. Conf., Boulder, CO, June 1991.
109. J. Irby, D. Kinosky, R. Qian, B. Anthony, T. Hsu, S. Banerjee, A. Tasch, and C. Magee, "*In situ* B-Doped Si Epitaxial Films Grown at 450˚ C by Remote Plasma-enhanced Chemical Vapor Deposition: Physical and Electrical Characterization", Elec. Mat. Conf., Boulder, CO, June 1991.
110. T. Hsu, B. Anthony, R. Qian, J. Irby, D. Kinosky, S. Banerjee, A. Tasch, J. Lin, and H. Marcus, "Electron-beam-induced-oxidation of Hydrogen-passivated Si (100) Surface Prepared by Low Temperature Remote Hydrogen Plasma Clean", Elec. Mat. Conf., Boulder, CO, June 1991.
111. B.Anthony, T.Hsu, R.Qian, S.Banerjee and A.Tasch, "The Use of Langmuir Probe Measurements to Study Reaction Kinetics in Remote Plasma-enhanced Chemical Vapor Deposition of Silicon," *Proc. Mat. Res. Soc.* , v.190, p.267, 1991.
112. T.Hsu, B.Anthony, R.Qian, S.Banerjee and A.Tasch, "Hydrogen Passivation of Silicon (100) by Remote Hydrogen PlasmaTreatment," *Proc. Mat. Res. Soc.* , v.190, p.279, 1991.
113. S. Yoganathan, S. Banerjee, T. Itoh, H. Shichijo, and S. El-Ghazaly, "A Numerical Model of GaAs MESFETs Including Energy Balance for Microwave Applications", *IEEE Microwave and Guided Wave Lett.,* 1(7), p. 175, July 1991.
114. K. Park, S. Batra, S. Banerjee, and G. Lux, "Analysis of Ion-implanted Amorphous and Polycrystalline Silicon Films as Diffusion Sources for Ultra-shallow Junctions", *J. Appl. Phys.*, 70(3), pp.1397-1404, August 1991.

115. K. Park, S. Batra, and S. Banerjee, "Analysis of Lateral Uniformity of Ultra-shallow Junctions in Polycrystalline Silicon-on-Single Crystal Silicon Systems", *Appl. Phys. Lett.*, 59(6), p.709-711, August 1991.

116. D. Kinosky, R. Qian, J. Irby, T. Hsu, B. Anthony, S. Banerjee, A. Tasch, C. Magee, and C. Grove, "Low Temperature Growth of Ge_xSi1_{-x}/Si Heterostructures on Si (100) by Remote Plasma-enhanced Chemical Vapor Deposition",.*Appl. Phys. Lett.*, 59(7), pp.817-819, August 1991.

117. B. Fowler, S. Lian, S. Krishnan, L. Jung, and S. Banerjee, "Modeling of Photo-Chemical Vapor Deposition of Epitaxial Silicon Using an ArF Laser", *Proc. SPIE Microelectronic Processing Integration*, September 1991.

118. S. Lian, B. Fowler, L. Jung, S. Krishnan, and S. Banerjee, "Characterization of Microstructure of Si Films Grown by Laser-enhanced Photo CVD Using Si_2H_6", *Proc. SPIE Microelectronic Processing Integration*, September 1991.

A. Tasch, S. Banerjee, B. Anthony, T. Hsu, R. Qian, J. Irby, and D. Kinosky, "Low Temperature *In situ* Cleaning of Silicon by Remote Plasma Hydrogen", **Invited** Paper, *Proc. ECS,* October 1991.

119. D. Kinosky, B. Anthony, T. Hsu, R. Qian, J. Irby, S. Banerjee, and A. Tasch, "The Hydrogen-terminated Si (100) Surface and its Role in the Successful Achievement of Silicon Epitaxy at Low Temperatures", *Proc. ECS,* October 1991.

120. *S.Banerjee, "The Impact of Impurities on Semiconductor Devices: Electrical Performance and Reliability," **Invited** paper, *Proc. Microcontamination*, v.91, pp.621-624, October 1991.

121. S. Krishnan, S. Lian, B. Fowler, L. Jung, C.Li and S. Banerjee, "Photoepitaxy of Si from Si_2H_6 With and Without Surface Activation of Si by an ArF Excimer Laser," *Proc. of ECS*, October 1991.

122. B. Fowler, S. Lian, S. Krishnan, L. Jung, C.Li and S. Banerjee, "ArF Excimer Laser-enhanced Photo-CVD of Silicon from Disilane:Growth Kinetic Model", *Proc. of ECS* , October 1991.

123. R. Qian, D. Kinosky, T. Hsu, J. Irby, A.Mahajan, S.Thomas, B. Anthony, S. Banerjee, A. Tasch, and C. Magee, "Growth of Ge_xSi_{1-x}/Si Heteroepitaxial Films by Remote Plasma-enhanced Chemical Vapor Deposition", 38th AVS Symposium, Seattle, WA, November 1991.

124. J. Lin, K. Park, S. Batra, S. Banerjee, J. Lee, and G. Lux, "Effects of $TiSi_2$ Formation on Boron Penetration Through Gate Oxides in MOS Devices Under RTP", MRS, 1991.

125. A.Sultan, S.Batra, M.Lobo, K.Park and S.Banerjee, "Modeling of Boron Diffusion in Polysilicon-on-Silicon Layers," *Microcryst. Mat. Sci. and Dev. v. 283 (MRS)* , Dec. 1992.

126. T. Hsu, B. Anthony, R. Qian, J. Irby, D. Kinosky, A.Mahajan, S. Banerjee, A. Tasch, and C. Magee, " Remote Plasma-enhanced Chemical Vapor Deposition Process for Low Temperature (<450 C) Epitaxy of Si and Ge_xSi_{1-x} ", **invited** paper, *Mat. & Mfg. Proc*., 7(4), p.593-612, 1992.

127. B. Anthony, T. Hsu, R. Qian, J. Irby, D. Kinosky, S. Banerjee, A. Tasch, and C. Magee, "Physical and Electrical Characterization of *In situ* Boron-doped Single Crystal Silicon Films Grown at 450˚ C Using Remote Plasma-enhanced Chemical Vapor Deposition", *Thin Solid Films*, 207, p.12-14, Jan.1992.

128. T. Hsu, B. Anthony, R. Qian, J. Irby, D. Kinosky, A.Mahajan, S. Banerjee, A. Tasch, and C. Magee, "Advances in Remote Plasma-enhanced Chemical Vapor Deposition for Low Temperature *In Situ* Hydrogen Plasma Clean and Si and Ge_xSi_{1-x} Epitaxy", *J. Elec. Mat*., 21(1), p.65-74, Jan. 1992.

129. S. Batra, K. Park, S. Banerjee, G. Lux, T. Smith, J. Elliot, and B. Mulvaney, "Effect of Grain Microstructure on P Diffusion in Polycrystalline-on-Single Crystal Silicon Systems", *J. Elec. Mat.*, 21(2), p.227-232, Feb.1992.

130. L. Jung, S. Lian, B. Fowler, S. Krishnan, C.Li, D.Samara, I.Manna and S. Banerjee, "A Green's Function Growth Model for Low Temperature Silicon Homoepitaxy by ArF Excimer

Laser-enhanced Photo Chemical Vapor Deposition," American Phys. Soc. Meet., San Marcos, TX, March 1992.

131. R. Qian, D. Kinosky, T. Hsu, J. Irby, A.Mahajan, S.Thomas, S. Banerjee and A. Tasch, "Microstructure of Ge_xSi_{1-x} /Si Grown by Remote Plasma-enhanced CVD", American Phys. Soc. Meet., San Marcos, TX, March 1992.

132. C.Li, S. Krishnan, L. Jung, D.Samara, I.Manna, S. Lian, B. Fowler and S. Banerjee, "Characteristics of Silicon Growth by Photo-enhanced Chemical Vapor Deposition Using an ArF Excimer Laser," American Phys. Soc. Meet., San Marcos, TX, March 1992.

133. S.Thomas, J. Irby, I.Iqbal, R. Qian, D. Kinosky, S. Banerjee, A. Tasch, and C. Magee, "Characterization of *In Situ* P-Type and N-Type Doped Si and Ge_xSi_{1-x} Films Grown by Remote Plasma-enhanced Chemical Vapor Deposition", *Proc. Mat. Res. Soc.*, v.268, p.223, 1992.

134. R. Qian, D. Kinosky, T. Hsu, J. Irby, A.Mahajan, S.Thomas, B. Anthony, S. Banerjee, A. Tasch, and C. Magee, "Growth of Ge_xSi_{1-x}/Si Heteroepitaxial Films by Remote Plasma-enhanced Chemical Vapor Deposition", *J.Am.Vac. Soc.*, JVST A10(4). p.1920, April 1992.

135. D. Kinosky, R. Qian, T. Hsu, J. Irby, A.Mahajan, S.Thomas, S. Banerjee, A. Tasch, and C. Magee, "The Dependence of Defect Density on Deposition Parameters in Ge_xSi_{1-x} Heterostructures Grown by Remote Plasma-enhanced Chemical Vapor Deposition", *Proc. Mat. Res. Soc.,* April 1992.

136. B. Fowler, S. Lian, S. Krishnan, C. Li, L. Jung, D. Samara, I. Manna, and S. Banerjee, "Modeling of Si Deposition Yield at Low Temperature by ArF Excimer Laser Photolysis of Disilane," *Proc.Mat. Res. Soc.,* April 1992.

137. *S.Banerjee, "Laser Assisted Silicon Epitaxy," **Invited** Talk, NATO Workshop on "In Situ Processing," Viana Do Castelo, Portugal, April 1992.

138. S. Bhattacharya, S. Banerjee, J. Lee, A. Tasch, and A. Chatterjee, "Parametric Study of Latchup-Immunity of Deep Trench-isolated, Bulk, Non-epitaxial CMOS", *IEEE Trans. Elec. Dev.*, 39(4), p.921, April 1992.

139. S. Krishnan, S. Lian, B. Fowler, L. Jung, C. Li, D. Samara, I. Manna and S. Banerjee, "A Parametric Study of the Growth Kinetics of Silicon Homoepitaxial Films by ArF Laser-enhanced Chemical Vapor Deposition," *Proc.Mat. Res. Soc.*, April 1992.

140. *S. Banerjee, A. Tasch, B. Anthony, T. Hsu, R. Qian, D. Kinosky, J. Irby, A.Mahajan and S.Thomas, " *In situ* Low Temperature Cleaning and Passivation of Silicon by Remote Hydrogen Plasma for Silicon Based Epitaxy", **Invited** talk, *Proc. Mat. Res. Soc*., April 1992.

141. R. Qian, B. Anthony, T. Hsu, J. Irby, D. Kinosky, S. Banerjee, A. Tasch, and C. Magee, "Structural Analysis of Ge_xSi_{1-x}/Si Layers Grown by Remote Plasma-enhanced Chemical Vapor Deposition on Si (100)", *J. Elec. Mat.* , 21(4), p.395-400, April 1992.

142. W.Chen, J.Lin, S.Banerjee, and J.Lee, "Thermal Stability of Cobalt Disilicide for Self Aligned Silicide Applications," *Proc. Mat. Res. Soc.,* v.260, p. 163, April 1992.

143. C.Tsai, K.Li, D.Kinosky, R.Qian, T.Hsu, J.Irby, S.Banerjee, A.Tasch, J.Campbell, B.Hance and J.White, "A Correlation Between Silicon Hydride Species and the Photoluminescence Intensity of Porous Silicon," *Appl. Phys. Lett.*, v. 60(14), p. 1700, April 1992.

144. J.Lin, W.Chen, S.Banerjee, J.Lee, and C.Teng, "Study of SITOX (Silicidation Through Oxide) Process and Its Application to Advanced CMOS Devices," *Proc. Mat. Res. Soc.,* v.260, p.623, April 1992.

145. S. Krishnan, S. Lian, B. Fowler, L. Jung, C.Li, D.Samara, I.Manna and S. Banerjee, "A Study of the Effect of Deposition Parameters on the Growth Rates and Microstructure of Silicon Homoepitaxial Films Grown by ArF Laser-enhanced Chemical Vapor Deposition," *Proc. of Electro. Chem. Soc*, May 1992.

146. J. Irby, D. Kinosky, R. Qian, B. Anthony, T. Hsu, S. Banerjee, A. Tasch, and C. Magee, "*In situ* B-Doped Si Epitaxial Films Grown at 450˚ C by Remote Plasma-enhanced Chemical Vapor Deposition: Physical and Electrical Characterization", *J. Elec. Mat.* , 21(5), p.543-548, May 1992.

147. *S. Banerjee, A. Tasch, A.Mahajan, J. Irby, D. Kinosky, R. Qian and S.Thomas "Silicon ALE Using Disilane with Remote Helium Plasma Bombardment," **Invited** Talk, SRC Topical Research Conference on GeSi, Ithaca, NY, May 1992.

148. S. Lian, B. Fowler, S. Krishnan, L. Jung, C.Li, D.Samara, I.Manna and S. Banerjee, "A Green's Function Approach to a Growth Kinetic Model for Low Temperature Silicon Homoepitaxy by ArF Excimer Laser-enhanced Photo Chemical Vapor Deposition Using Disilane," *Proc. Electro. Chem. Soc.*, May 1992.

149. S. Krishnan, S. Lian, B. Fowler, L. Jung, C. Li and S. Banerjee, "Characterization of Si Homoepitaxial Films Grown with and without Surface Photo-activation by ArF Excimer Laser-induced Photodissociation of Si_2H_6," *J. Elect. Mat.,* 21(6), p. 559, June 1992.

150. J. Irby, S.Thomas, D. Kinosky, R. Qian, A.Mahajan, S. Banerjee, A. Tasch, and C. Magee, "*In Situ* Doped Si Films Grown by Remote Plasma-enhanced Chemical Vapor Deposition", Elec. Mat. Conf., Boston, MA, June 1992.

151. R. Qian, D. Kinosky, T. Hsu, J. Irby, A.Mahajan, S.Thomas, S. Banerjee and A. Tasch, "Microstructure of Ge_xSi_{1-x} /Si Grown by Remote Plasma-enhanced CVD", Elec. Mat. Conf., Boston, MA, June 1992.

152. S.Thomas, J. Irby, D. Kinosky, R. Qian, A.Mahajan, S. Banerjee, A. Tasch, and C. Magee, "*In Situ* B and P Doped Si Epitaxial Films Grown by Remote Plasma-enhanced Chemical Vapor Deposition", Am. Vac. Soc. Meeting, Dallas TX, June 1992.

153. A.Mahajan, D. Kinosky, R. Qian, J. Irby, S.Thomas, S. Banerjee and A. Tasch, "Silicon Atomic Layer Epitaxy Using Remote Helium Plasma Assisted Hydrogen Desorption and Disilane as a Precursor", Am. Vac. Soc. Meeting, Dallas TX, June 1992.

154. D. Kinosky, A.Mahajan, J. Irby, R. Qian, S.Thomas, S. Banerjee and A. Tasch, "A Simple Controller for Repetitive Cycles in Atomic Layer Epitaxy," Second International ALE Symposium, Raleigh NC, June 1992.

155. A.Mahajan, J. Irby, D. Kinosky, R. Qian, S.Thomas, S. Banerjee, A. Tasch and T.Picraux, "Silicon Atomic Layer Epitaxy Based on Disilane and Remote Helium Plasma Bombardment," Second International ALE Symposium, Raleigh NC, June 1992.

156. J.Lin, W.Chen, S.Banerjee, and J.Lee, "Cobalt Disilicide as a Dopant Diffusion Source for Polysilicon Gates in MOS Devices," Elec. Mat. Conf., Boston, MA, June 1992.

157. S. Yoganathan, and S. Banerjee, "A New Decoupled Algorithm for Non-Stationary Transient Simulation of GaAs MESFETs", *IEEE Trans. Elec. Dev.* 39(7), p.1578-1587, July 1992.

158. B. Fowler, S. Lian, S. Krishnan, L. Jung, and S. Banerjee, "ArF Excimer Laser-enhanced Photo-Chemical Vapor Deposition of Epitaxial Si from Si_2H_6: A Simple Growth Kinetic Model", *J. Elec. Mat..*, 21(8), p.791-798, August 1992.

159. S. Lian, B. Fowler, S. Krishnan, L. Jung, B.Li and S. Banerjee, "Si Homoepitaxial Films Grown by Photo-enhanced Chemical Vapor Deposition From Si_2H_6", *J.Electrochem. Soc.*, 139(8),p.2273-2277, Aug.1992.

160. B. Fowler, S. Lian, S. Krishnan, L. Jung, and S. Banerjee, "ArF Laser-enhanced Photo-CVD of Silicon from Disilane", *J.Electrochem. Soc.*, 139(8), p.2314-2318, Aug.1992.

161. T. Hsu, S.Lin, B. Anthony, R. Qian, J. Irby, D. Kinosky, A.Mahajan, S. Banerjee, A. Tasch, and H.Marcus, "Hydrogen Desorption on Various H-Terminated Surfaces due to Electron Beam Irradiation: Experiments and Modeling", *Appl.Phys.Lett.,* 61(5), p.580-582, Aug. 1992.

162. B. Fowler, S. Lian, S. Krishnan, L. Jung, C. Li, D. Samara, I. Manna, and S. Banerjee, "Epitaxial Silicon Growth Conditions and Kinetics in Low Temperature ArF Excimer Laser Photochemical Vapor Deposition from Disilane," *J. Appl. Phys.,* 72(3), Aug. 1992.

163. S. Yoganathan and S. Banerjee, "An Efficient Two-dimensional Hydrodynamic Simulator for GaAs MESFETs", *Proc. of CEFC,* p. TOD3, August 1992.

164. S.Bhattacharya, R.Kovelamudi, S.Batra, M.Lobo, S.Banerjee, B.Nguyen and P.Tobin, "Hot Carrier Effects in Thin Film, P-channel, H-Passivated Polysilicon-on-Insulator LDD MOSFETs," *Proc. SPIE*, Sept., 1992.

165. S.Bhattacharya, R.Kovelamudi, S.Batra, S.Banerjee, B.Nguyen and P.Tobin, "Parallel Hot Carrier Induced Degradation Mechanisms in H-Passivated, Polysilicon p-MOSFETs," *IEEE Elec. Dev. Lett.*, v.13(9), p.491, Sept. 1992.

166. S.Banerjee, "Laser-enhanced CVD Using Disilane for Low Temperature Si Epitaxy," **Invited** paper, *Proc. SPIE*, Sept. 1992.

167. S.Bhattacharya, S.Banerjee, B.Nguyen and P.Tobin, "Hot Carrier Induced Degradation Mechanisms and Anomalous Leakage Current in H-Passivated, Polysilicon-on-Insulator LDD p-MOSFETs," IEEE SOI. Conf. , Pointe Verde, FL, Oct. 1992.

168. B. Fowler, S. Lian, S. Krishnan, L. Jung, C. Li, D. Samara, I. Manna, and S. Banerjee, "Mechanisms of low temperature epitaxial silicon growth using ArF excimer laser photochemical vapor deposition from disilane," *Thin Solid Film*, v. 218, p.48, Nov. 1992.

169. R. Qian, D. Kinosky, A. Mahajan, S. Thomas, S. Banerjee, and A. Tasch, C. Magee, "Growth of Ge-on-Si Structures Using Remote Plasma-enhanced Chemical Vapor Deposition", *Proc. Mat. Res. Soc.*, 1992.

170. D. Kinosky, R. Qian, A.Mahajan, S.Thomas, S. Banerjee and A. Tasch, "Remote Plasma Cleaning and Ion-induced Desorption from the Silicon (100) Surface and Its Application to Si Epitaxy", Mat.Res. Soc. Symp., Dec. 1992.

171. S.Bhattacharaya, M.Lobo, S.Banerjee, and R.Reuss, "Control of Polysilicon Emitter Bipolar Transistor Characteristics by Rapid Thermal or Furnace Anneal of the Polysilicon/Silicon Interface," Mat.Res. Soc.Symp. , Dec. 1992,.

172. A.Sultan, S.Batra, M.Lobo, K.Park and S.Banerjee, "Modeling of Boron Diffusion in Polysilicon-on-Silicon Layers," Mat.Res. Soc.Symp. , Dec. 1992.

173. S.Bhattacharya, S.Banerjee, B.Nguyen and P.Tobin, "An Analytical Model for the Temperature Dependence of Leakage Current in Polysilicon-on-Insulator (SOI) MOSFETs," *Proc. of Electro. Chem. Soc.*, Oct. 1992.

174. I.Manna, C.Li, L.Jung, S.Lian, D.Samara, B.Fowler and S.Banerjee, "Role of de-ionized water rinse on the surface preparation for low T Si epi film growth by photo CVD," SISC, San Diego, CA, Dec. 1992.

175. Wei-Ming Chen, Jengping Lin, Sanjay K. Banerjee, and Jack C. Lee, "Thermal stability and dopant drive-out characteristics of CoSi2 polycide gates," J.App. Phys, 1993.

176. D. Kinosky, R. Qian, A. Mahajan, S. Thomas, S. Banerjee, A. Tasch, and C. Magee, "Control of Deposition Rate in Remote Plasma-enhanced Chemical Vapor Deposition of Ge_xSi_{1-x}/Si Heteroepitaxial films", *J. Vac. Sci. and Tech.,* B 11(4), Jul/Aug 1993.

177. D. Kinosky, R. Qian, A. Mahajan, S. Thomas, P. Munguia, J. Fretwell, S. Banerjee, A. Tasch, and C. Magee, "HF/Alcohol Preparation of Wafers for the Reduction of Haze in Low Temperature Si Epitaxy by Remote Plasma Chemical Vapor Deposition", *Mat. Res. Soc. Proc., 1993.*

178. S.Batra, K.Park, S.Banerjee, G.Lux and R.Manukonda "Discontinuity of Boron Diffusion Profiles at the Interface of Polycrystalline/ Single Crystal Silicon," *J. Appl. Phys. ,* 73(8), p. 3800, April 1993.

179. A.Sultan, S.Bhattacharaya, S.Batra and S.Banerjee, "A Boltzmann- Matano Analysis Based Model for B Diffusion from Polysilicon into Single Crystal Si," 2nd Int. Workshop on Measurement of Ultra-Shallow Doping Profiles, Raleigh, NC, May 1993.

180. D. Kinosky, R. Qian, A.Mahajan, S.Thomas, S. Banerjee and A. Tasch, "Control of Deposition Rate in Remote Plasma Chemical Vapor Deposition of GexSi1-x/Si Heteroepitaxial Films," Phys. Chem. Sem. Int.-20, Williamsburg, VA, Jan. 1993.

181. C.Li, S.Lian, B.Fowler, L.Jung, C.Li, D.Samara, I.Manna, and S.Banerjee, "Characterization of $Si_{1-x}Ge_x$/Si Heterostructure Grown by ArF Laser-induced Photochemical Vapor Deposition Using Disilane and Digermane," TMS, Denver, CO, Feb. 1993.

182. L.Jung, B.Fowler, C.Li, I.Manna, D.Samara, S.Lian, and S.Banerjee, "Optical Multichannel Analysis of ArF Laser-induced Photochemical Vapor Deposition of Si and $Si_{1-x}Ge_x$ Epitaxial Films," TMS, Denver, CO, Feb. 1993.

183. S. Lian, B. Fowler, S. Krishnan, L. Jung, C. Li, I. I. Manna, D. Samara, and S. Banerjee, "Photo-enhanced Chemical Vapor Deposition System Design Considerations," *J. Vac. Sci. Tech.,* v.A11(6), p.2194-2923, Nov/Dec 1993.

184. A.Mahajan, J. Irby, D. Kinosky, R. Qian, S.Thomas, S. Banerjee, A. Tasch and T.Picraux, "Silicon Atomic Layer Epitaxy Based on Disilane and Remote Helium Plasma Bombardment," *Thin Sol. Films*, v.225, p.177, 1993.

185. J.Lin, W.Chen, S.Banerjee, and J.Lee, "Cobalt Disilicide as a Dopant Diffusion Source for Polysilicon Gates in MOS Devices," *J. Elec. Mat.*, v. 22, p. 667, 1993.

186. S. Batra, K. Picone, M. Lobo, S. Bhattacharya, K. Park, J. Lee, and S. Banerjee, "Leakage Characteristics and Lateral Uniformity of Ultra-Shallow Junctions Formed Using Polysilicon and Amorphous Silicon Diffusion Sources", *Sol. State. Elec.,* v.36, p.955, July 1993.

187. S.Batra, N.Jeng, A.Sultan, K.Picone, S.Bhattacharya, K.Park, S.Banerjee, D.Kao, M.Manning and C.Dennison, "Effect of Epitaxial Realignment on the Leakage Behavior of Arsenic Implanted, As-deposited Polycrystalline Si-on-single Crystal Si Diodes," *J.Elec.Mat.,* v.22(5), p.551, 1993.

188. A.Mahajan, B.Kellerman, N.Russell, D.Bonser, J.Ekerdt, A.Campion, S.Banerjee, A.Tasch and J.White, "Adsorption and Desorption of Diethylsilane and Diethlygermane from Si (100): Surface Kinetics for an ALE Approach of Col. IV Epitaxy," 40th Nat. Am. Vac. Soc. Conf. Orlando, FL, Nov. 1993.

189. N.Russell, M.Tiner, J.Ekerdt, D.Bonser, B.Kellerman, A.Campion, J.White, A.Mahajan, S.Banerjee and A.Tasch, " Surface Chemistry Studies of DES and DEG on Si (100)", Ame. Vac. Soc. Meeting, June 1993, Austin, TX.

190. B.Kellerman, A.Mahajan, N.Russell, D.Bonser, J.Ekerdt, A.Campion, S.Banerjee, A.Tasch and J.White, "Adsorption and Desorption of Diethylsilane and Diethlygermane from Si (100): Surface Kinetics for an ALE Approach of Col. IV Epitaxy," American Chemical Society Meeting, Austin, TX, Oct. 1993.

191. I.Manna, C.Li, D.Samara, S.John, A.Lentvorski and S.Banerjee, "Characterization and Modeling of Si_xGe_{1-x} Heterostructure Films Grown by ArF Laser-induced Photochemical Vapor Deposition Using Disilane and Digermane," Elec. Mat. Proc. and Char. Symp., Austin, TX, June 1993.

192. C.Li, S.John, I.Manna, D.Samara, A.Lentvorski, S.Banerjee and M.White, "Photo-enhanced Epitaxy of Si/Ge Layers," American Chemical Society Meeting, Austin, TX, Oct. 1993.

193. J.Fretwell, R.Qian, D.Kinosky, A.Mahajan, P.Munguia, S.Banerjee and ATasch, "Effect of Ge Content on Dopant Transition Widths in Ge_xSi_{1-x} Films Grown by RPCVD, " American Chemical Society Meeting, Austin, TX, Oct. 1993.

194. D.Kinosky, R.Qian, A.Mahajan, S.Thomas, P.Munguia, J.Fretwell, S.Banerjee and A.Tasch, "HF/Alcohol Preparation of Wafers for the Reduction of Haze in Low Temperature Si Epitaxy by RPCVD," American Chemical Society Meeting, Austin, TX, Oct. 1993.

195. D.Kinosky, R.Qian, A.Mahajan, S.Thomas, P.Munguia, J.Fretwell, S.Banerjee and A.Tasch, "Deposition Rate in RPCVD of Ge_xSi_{1-x} Heteroepitaxial Films," American Chemical Society Meeting, Austin, TX, Oct. 1993.

196. L.Jung, S.Bhattacharya, R.Reuss and S.Banerjee, "The Temperature Dependence of the Current Gain of Polysilicon Emitter BJT's," TECHCON, Atlanta, GA, Sept. 1993.

197. A.Sultan, M.Lobo, S.Bhattacharya, S.Banerjee, S.Batra, M.Manning and C.Dennison" A Physically-based Phenomenological Model Using Boltzmann-Matano Analysis for Boron Diffusion from Polysilicon into Single Crystal Silicon," *J.Elec. Mat.,* v.22(9), p.1129-1135, Sept. 1993.

198. I.Manna, S.Bhattacharya and S.Banerjee, "A New Hot Carrier Resistant P-I-N MOSFET Structure," *Proc. SRC TECHCON*, v. 3, p.248-250, October, 1993.

199. S.Murtaza, R.Qian, D.Kinosky, R.Mayer, A.Tasch, S.Banerjee and J.Campbell, "Room Temperature Measurements of Strong Electroabsorption Effects in Ge_xSi_{1-x}/Si Multiple Quantum Wells Grown by Remote Plasma-enhanced Chemical Vapor Deposion," *Appl. Phys. Lett.*, 62(16), p. 1976, 1993.

200. W.Chen, J.Lin, S.Banerjee and J.Lee, "The Impact of Pre-silicidation Heat Treatment and Dopant Effects on the Thermal Stability of $CoSi_2$ Polycide During Rapid Thermal Annealing," *Proc. Mat. Res. Soc.*, vol. 303, 1993.

201. W.Chen, J.Lin, S.Banerjee and J.Lee, "Using $CoSi_2$ Polysilicon/Polycide Structure as Gate Diffusion Source in Rapid Thermal Processing," *Proc. Mat. Res. Soc.*, vol. 303, 1993.

202. J.Lin, W.Chen, S.Banerjee and J.Lee, "Enhanced B Diffusion in Si Using $CoSi_2$ Diffusion Source and Rapid Thermal Annealing," *Proc. Mat. Res. Soc.*, vol. 303, 1993.

203. A.Sultan, S.Bhattacharya, S.Batra and S.Banerjee, " A Boltzmann-Matano Analysis Based Model for B Diffusion from Polysilicon into Single Crystal Si," *Proc. TECHCON*, v.3, p.43-45, October, 1993.

204. D. Kinosky, R. Qian, A. Mahajan, S. Thomas, P. Munguia, J. Fretwell, S. Banerjee, and A. Tasch, "Hydrogen Plasma Cleaning of the Si(100) Surface: Removal of Oxygen and Carbon and the Etching of Si", *Mat. Res. Soc. Proc.*, 1993.

205. N.Russell, S.Asami, J.Dadap, X.Hu, J.Fretwell, M.Downer, S.Banerjee, A.Tasch, J.White and J.Ekerdt, "Surface Chemistry basis for kinetically self-limited epi growth from dsilane/diegermane mixtures," AICheE Meeting, San Francisco, Nov. 1994.

206. *S.Banerjee, "Low Thermal Budget Si Epitaxy," *TMS Laser Materials Processing* , v.4, p.281-294, 1994.

207. A.Sultan, S.Bhattacharya, S.Batra and S.Banerjee, " A Boltzmann-Matano Analysis Based Model for B Diffusion from Polysilicon into Single Crystal Si," *J. Vac.Sci.Tech., v. B12, p.391-4, Jan/Feb., 1994.*

208. S.Bhattacharya, S.Banerjee, B.Nguyen and P.Tobin, "Temperature Dependence of the Anomalous Leakage Current in Polysilicon-on-Insulator MOSFETs," *IEEE Trans. Elec. Dev.*, v.41(2), p.221-227, Feb. 1994.

209. W.Chen, J.Lin, S.Banerjee, and J.Lee, "A Simultaneous Shallow-junction Formation and Gate Doping P-MOSFET Process Using Cobalt Silicide as a Diffusion Source (SADDS)," *Appl. Phys.Lett*, v. 64, p. 345-347, Jan. 1994.

210. W.Chen, J.Lin, S.Banerjee and J.Lee, "Degradation Mechanisms and Improvement of Thermal Stability of $CoSi_2$ Polycide Layers," *Appl. Phys. Lett.*, 64(12), p. 1505-7, March 1994.

211. L.Jung, C.Li, I.Manna, D.Samara, A.Lentvorski, S.John, B.Fowler, S.Lian and S.Banerjee, "Optical Multichannel Analysis of Laser-induced Fluorescence During ArF Excimer Laser Photolysis of Disilane," *TMS Laser Materials Processing* , v.4, p.267-280, 1994.

212. A.Mahajan, B.Kellerman, N.Russell, S.Banerjee, A.Campion, J.Ekerdt, A.Tasch, J.White and D.Bonser, "Surface Chemistry of Diethylsilane and Diethlygermane on Si (100): An ALE Approach," *J. Am. Vac. Soc*. A 12(4), p. 2265-2270, July 1994.

213. I.Manna, S.Bhattacharya and S.Banerjee, "A New Hot Carrier Resistant P-I-N MOSFET Structure," *Elec. Lett.*, v. 30(5), p. 457, 1994.

214. *S.Banerjee, "Laser-Enhanced Epitaxy of Si and Si-Ge," **Invited** talk, IEEE Engineering Foundation, Palm Coast, FL, May 1994.

215. S.Asami, N.Russell, A.Mahajan, P.Steiner, D.Bonser, J.Fretwell, S.Banerjee, A.Tasch, J.White and J.Ekerdt, "Adaptive Temperature Program ALE of Short Period $Si_{1-x}Ge_x$ Heterostructures from Si_2H_6/ Ge_2H_6," 3rd. Int. Symp. on Atomic Layer Epitaxy and Related Processes (ALE-3), May 25-27, 1994 Sendai, Japan.

216. L.Jung, J.Damiano, S.Banerjee, S.Batra, M.Manning, C.Dennison and N.Saks, "A Leakage Current Model for Sub-Micron Drain-Offset Polysilicon TFT's," Electrochem. Soc. Meet., Oct. 1994, Miami, FL.

217. L.Jung, I.Manna, S.Bhattacharya and S.Banerjee, "A New Hot Carrier Resistant P-I-N MOSFET Structure," SPIE, Oct. 1994, Austin, TX.

218. J.Damiano, L.Jung, S.Banerjee, S.Batra, M.Manning, C.Dennison and N.Saks, "Analysis and Modeling of Sub-Micron Drain-Offset Polysilicon TFT's," SPIE, Oct. 1994, Austin, TX.

219. A.Mahajan, B.Kellerman, N.Russell, S.Banerjee, J.Ekerdt, A.Tasch and J.White, "Surface Chemistry of Potential CVD Precursors, Diethylsilane and Diethlygermane, on Ge(100)," 41st Nat. Am. Vac. Soc. Conf. Denver, CO, Oct. 1994.

220. I.Manna, H.Taufique, A.Pandelides and S.Banerjee, "Si and Si-Ge Epitaxial Layers Grown by Low Temperature Rapid-Thermal Chemical Vapor Deposition from DCS/GErmane/Hydrogen," Mat. Res. Soc.Symp., Nov. 1994, Boston, MA.

221. A.Mahajan, B.Kellerman, N.Russell, J.Heitzinger, S.Banerjee, J.Ekerdt, A.Tasch and J.White, "Surface Chemistry of Diethylsilane and Diethlygermane on Si (100) and Ge(100) Surfaces," Mat. Res. Soc.Symp., Nov. 1994, Boston, MA.

222. S.Murtaza, R.Mayer, M.Rashed, D.Kinosky, C.Maziar, S.Banerjee, A.Tasch, J.Campbell, J.Bean and L.Peticolas, "Room-temperature Electroabsorption in a Ge_xSi_{1-x} Photodiode," *IEEE Trans. Elec. Dev.,41(12), p. 2297-2300, Dec. 1994.*

223. M.Tesauro, A.Campion and S.Banerjee, "Hydrogen Desorption from Si Surfaces Using Ar and He Ion Bombardment," *Surf. Sci.Lett., 318, L1171-1174, 1994.*

224. S.Asami, N.Russell, A.Mahajan, P.Steiner, D.Bonser, J.Fretwell, S.Banerjee, A.Tasch, J.White and J.Ekerdt, "Adaptive Temperature Program ALE of Short Period $Si_{1-x}Ge_x$ Heterostructures from Si_2H_6/ Ge_2H_6," *Appl. Surf. Sci., v. 82-83, p. 359 (1994).*

225. I.Manna, A.Pantelides and S.Banerjee, "Photo-assisted enhancement for growth rate of SiGe Alloys using RTCVD," APS Meeting, Oct. 1994, Austin, TX.

226. C.Hu, S.Banerjee, J.Lee, K.Sadra, B.Streetman and R.Sivan, "Impact of hole quantization in MOS Structures on Effective Oxide Thickness and Threshold Voltage," APS Meeting, Oct. 1994, Austin, TX.

227. J.Fretwell, B.Doris,D.Diaz,C.Cariss, R.Gupta, S.Banerjee and A.Tasch, "Effects of wafer preparation on epi surface morphology and crystallinity as grown by RPCVD," APS Meeting, Oct. 1994, Austin, TX.

228. B.Kellerman, A.Mahajan, N.Russell, J.Ekerdt, S.Banerjee, A.Tasch, A.Campion, J.White and D.Bonser, "Adsorption and Decomposition of DES and DEG on Si(100): Surface Reactions for an ALE Approach to Column IV Epitaxy," *J.Vac.Sci. Tech. A. A 13(4), p. 1819-1825, July 1995.*

229. A.Sultan, S.Batra, G.Lux and S.Banerjee, "Modeling of Boron Diffusion in Polysilicon-on-Silicon Layers Using a Rapid Thermal Anneal Step for Ultr-shallow Junction Formation," *Mat. Sci. Eng. B32, p. 25-32, 1995.*

230. S.Thomas, J. Fretwell, D. Kinosky, R. Qian, A. Mahajan, P. Munguia, S. Banerjee, A. Tasch and C.Magee, "*In Situ* P Doped Si and $Si_{1-x}Ge_x$ Epitaxial Films Grown by RPCVD", *J. Elec.Mat.. 24(3), p. 183-188, March 1995.*

231. C.Y.Hu, D.Kencke, S.Banerjee, B.Bandopadhyay, E.Ibok and S.Garg, "Determining Effective Dielectric Thickness of Metal-oxide-semiconductor Structures in Accumulation Mode," *Appl. Phys. Lett. 66(13), 1638-40, March 1995.*

232. A.Sultan, M.Craig, K.Reddy, S.Banerjee, E.Ishida, P.Maillot, T.Neil and L.Larson, "The Dependence of Ultra-shallow Junction Depths on Implant Dose Rates," *App. Phys. Lett., 67(9), p. 1223-1225, August 1995.*

233. L.Jung, I.Manna and S.Banerjee, "Simulation, Fabrication and Characterization of P-I-N Drain MOSFET Structure for Hot Carrier Suppression, *IEEE Trans. Elec. Dev., p. 1591-1599, Sept. 1995.*

234. C.Li, S.John and S.Banerjee, "Low Temperature Heteroepitaxial Growth of $Si_{1-x}Ge_x$-on-Si by Photo-enhanced Ultra-High Vacuum Chemical Vapor Deposition Using Si_2H_6 and Ge_2H_6, *J.Elec. Mat. 24(7), p.875-884, July 1995.*

235. A.Sultan, M.Craig, K.Reddy, S.Banerjee, E.Ishida, P.Maillot and L.Larson, "The Effect of Implant Dose Rates and Two-Step Anneals on P+-N Ultra-Shallow Junctions," *Proc. of UGIM Symp., v. 11, p. 108-112, May 1995.*

236. M.Craig, A.Sultan, K.Reddy, E.Ishida, L.Larson, and S.Banerjee, "Enhanced Diffusion Suppression via Two-Step Anneals in Low Energy BF2-Implanted Ultra-shallow Junctions," 3rd Int. Workshop on Ultra-shallow Profiles, Raleigh, NC, March 1995.

237. *A.Tasch and S.Banerjee, "Ultra-shallow Junction Formation in Si Using Low Energy Ion Implantation, " **invited** talk, European Mat. Res. Soc. Strasbourg, France, May 1995.

238. I.Manna, L.Jung and S.Banerjee, "A Novel Si/SiGe Sandwich Polysilicon TFT Structure for SRAM Applications," IEEE Dev. Res. Conf., Charlottesville, VA, June 1995.

239. K.Pacheo, B.Ferguson, S.Banerjee and B.Mullins, "Homoepitaxial Deposition of Si Employing Supersonic Jets of Disilane," 14th Annual Symp. on Elec. Mat. Proc. and Characterization, Austin, Tx, June 1995.

240. K.Pacheo, B.Ferguson, S.Banerjee and B.Mullins, "Growth and Chracterization of Si Thin Films Employing Supersonic Jets," 42nd Ann. Symp. of Am. Vac. Soc., Minneapolis MN, Oct. 1995.

241. A.Mahajan, R.Gupta, J.Ekerdt, A.Tasch and S.Banerjee, "Deposition and Characterization of Delta-doped Layers in Si Using Self-saturating Adsorption of PH_3 and B_2H_6 on Si(100)," Elec. Mat. Conf., Charlottesville VA, June 1995.

242. *S.Banerjee, "Low Energy Ion Implantation for Ultra-shallow Junction Technology in the ULSI Era," SEMICON Southwest Meeting, Austin TX, Oct. 26, 1995.

243. A.Mahajan, B.Kellerman, J.Heitzinger, S.Banerjee, A.Tasch, J.White and J.Ekerdt, "Surface Chemistry of Diethylsilane and Diethlygermane on Ge (100)," J. Am. Vac. Soc. A 13, p. 1 (1995).

244. L.Jung, J.Damiano, S.Batra, M.Manning and S.Banerjee, "A Leakage Current Model for Sub-micron Lightly-doped Drain Offset Polysilicon TFTs," *Solid State Elec.*, v.38(12), p. 2069-2073, Dec. 1995.

245. K.Pacheo, B.Ferguson, S.Banerjee and B.Mullins, "Epitaxial Si Growth Employing Supersonic Jets of Disilane: A Model Study of Energetic Jet Deposition," *Appl. Phys.Lett.*, *67(20), p. 2951-2953, November 1995.*

246. C. Hu, D.Kencke, S.Banerjee, R.Richart, B.Bandopadhyay, B.Moore, E.Ibok and S.Garg, "Analysis of Substrate-Bias-Enhanced Hot Electron Injection for Self Convergence of Over-Erased Flash Cells," 14th Ann. IEEE NonVol. Semi. Mem. Workshop, Monterey CA, Aug. 1995.

247. J.Fretwell, D.Diaz, S.Banerjee, A.Tasch, and B.Doris, "Study of Effects Resulting from Varied Ex Situ and In Situ Cleaning Steps for Low Temperature Si Deposition by RPCVD," Mat. Res. Soc. Symp. Spring 1995.

248. *A.Tasch and S.Banerjee, "Low Temperature Si-based Epitaxial Growth with RPCVD," Am. Phys. Soc. Meet., **Invited** talk, Austin TX, Oct. 1995.

249. C.Cariss, S.Banerjee and J.Lowell, "Surface Charge Detection on Epitaxial Si Films Grown by RPCVD Using Surface Photovoltage Measurements," Am. Vac. Soc. Symp., Austin TX, June 1995.

250. D.Samara, J.Williamson, C.Shih and S.Banerjee, "STM Induced Deposition of Semiconductor Quantum Dots," STM Conf., Denver CO, June 1995.

251. M. Craig, A. Sultan, K. Reddy, E. Ishida, L. Larson, and S. Banerjee, "Dose Rate and Thermal Budget Optimization for Ultra-shallow Junctions Formed by Sub-5 keV Ion Implantation," 3rd International Workshop on the Measurement & Characterization of Ultra-shallow Doping Profiles in Semiconductors, Research Triangle Park, NC, March, 1995.

252. M. Craig, A. Sultan, K. Reddy, E. Ishida, L. Larson, and S. Banerjee, "Dose Rate and Thermal Budget Optimization for Ultra-shallow Junctions Formed by Sub-5 keV Ion Implantation," *Proc. Workshop on the Measurement & Characterization of Ultra-shallow Doping Profiles in Semiconductors, March, 1995.*

253. I.Manna, K.Liu, and S.Banerjee, "Novel High Performance Polysilicon Heterostructure TFTs Using P-I-N Source/Drains, *Proc. Int. Elec. Dev. Meet., Dec. 1995.*

254. C. Hu, D.Kencke, S.Banerjee, R.Richart, B.Bandopadhyay, B.Moore, E.Ibok and S.Garg, "Substrate-Current-Induced Hot Electron (SCIHE) Injection: A New Convergence Scheme for Flash Memory," *Proc. of Int. Elec. Dev.Meet., Dec. 1995.*

255. S.John, E.Quinones, B.Ferguson, K.Pacheo, B.Mullins and S.Banerjee, "Progression of the Surface Roughness of N+ Epitaxial Films as Analyzed by AFM," *Proc. of Mat. Res. Soc.: Evolution of Thin Film and Surface Microstructure, Nov. 1995.*

256. M. Craig, A. Sultan, K. Reddy, E. Ishida, L. Larson, and S. Banerjee, "Dose Rate and Thermal Budget Optimization for Ultra-shallow Junctions Formed by Sub-5 keV Ion Implantation," *J.Vac.Sci. Tech.B 14(1), p. 255-259, Jan/Feb 1996.*

257. C. Hu, D.Kencke, S.Banerjee, R.Richart, B.Bandopadhyay, B.Moore, E.Ibok and S.Garg, "A Converegence Scheme for Over-erased Flash EEPROMs Using Substrate-bias-enhanced Hot Electron Injection," *Elec. Dev.Lett. 16(11), p. 500, Nov. 1995.*

258. K.Pacheo, B.Ferguson, S.Banerjee and B.Mullins, "Surface Morphology of Homoepitaxial Si Thin Films Grown Using Energetic Supersonic Jets of Disilane," *Appl. Phys.Lett.*, *69(8), p. 1110-1112, Aug. 1996.*

259. *A.Tasch and S.Banerjee, "Ultra-shallow Junction Formation in Si Using Low Energy Ion Implantation, " **invited** paper, *Nuc. Inst. and Methods B, 112, p. 177-183, 1996.*

260. D.Samara, J.Williamson, C.Shih and S.Banerjee, "STM Induced Deposition of Semiconductor Quantum Dots," *J.Vac. Sci. Tech.B,14(2), p. 1344-1352, Mar/Apr. 1996.*

261. *S.Banerjee, "Laser-Enhanced Epitaxy of Si and Si-Ge," **invited** paper, *Materials Science & Eng. B, 1996.*

262. C.Li, S.John, E.Quinones and S.Banerjee, "Cold-wall UHVCVD of Doped and Undoped Si and $Si_{1-x}Ge_x$ Epitaxial Films Using SiH_4 and Si_2H_6," *J.Vac.Sci. Tech.A 14(1), p. 170-183, Jan/Feb 1996..*

263. C.Hu, S.Banerjee, K.Sadra, B.Streetman and R.Sivan, "Quantization Effects in Inversion Layers of PMOSFETs on Si(100) Substrates," *Elec. Dev. Lett., 17(6), p. 276-278, June 1996.*

264. S. John, E. Quinones, B.Ferguson, C.Mullins and S.Banerjee, "UHV-CVD of Doped and Undoped Epitaxial SiGeC," Elec. Mat. Conf., June 1996.

265. R. Sharma, J. Fretwell, B. Doris and S. Banerjee, "Molybdenum Contamination in Low Temperature Epitaxial Silicon Films Grown by Remote Plasma Chemical Vapor Deposition", *Appl. Phys. Lett.*, 69 *(1), pp.109-111, July 1, 1996.*

A. Sultan, S. Banerjee, S. List, and Mark Rodder, "Role of Silicon Surface in the Removal of Point Defects," *Proc. 11th International Conf. on Ion Implantation Technology, p. 615-618, June 1996.*

266. Sultan, M. Craig, S. Banerjee, S. List, T. Grider, and V. McNeil, "Effect of F on B Penetration Through Gate Oxide for BF(2) Implants Used to Obtain Ultra-shallow Junctions by RTA," *Proc. 11th International Conf. on Ion Implantation Technology, p. 29-32, June 1996.*

267. Sultan, S. Banerjee, S. List, G. Pollack, and H. Hosack, "Evaluation of Si Pre-amorphization for Obtaining Ultra-shallow Junctions,"*Proc. 11th International Conf. on Ion Implantation Technology, p.25-28, June 1996.*

268. M. Craig, A. Sultan, S. Banerjee, E. Ishida, and L. Larson, "Carbon Co-implantation for Ultra-shallow p(+)-n Junction Formation," *Proc. 11th International Conf. on Ion Implantation Technology, p. 665-668, June 1996.*

269. Sultan, I. De, S. Banerjee, S. List, and M. Rodder, "Role of Si Surface in the Removal of Point Defects in Ultra-shallow Junctions," *Proc. TECHCON, 1996.*

270. S.R. Nandan, A. Sultan, M. Craig, and S. Banerjee, "Use of Carbon Co-implantation to Reduce TED and Achieve Shallower P-type Junctions," *Proc. TECHCON 1996.*

271. S.Batra, M.Manning, C.Dennison and S.Banerjee, "A New Submicron CMP-based TFT Technology for Future High Density SRAMs," Oct. Electrochem Soc. Meet, San Antonio, TX, 1996.

272. R.Zaman, S.Banerjee, J.Damiano, S.Batra and M.Manning, "Characterization of Polysilicon TFT Gate Dielectrics," Electrochem Soc. Meet, San Antonio, TX, Oct. 1996.

273. R.Zaman, S.Banerjee, S.Batra and M.Manning, "Study of Polysilicon TFTs for High density SRAM Applications," Electrochem Soc. Meet, San Antonio, TX, Oct. 1996.

274. S.Ray, S.John, S.Oswal and S.Banerjee, "Novel SiGeC Channel Heterojunction PMOSFET," *Proc. of Int. Elec. Dev.Meet., 1996.*

275. A. Sultan, S. Banerjee, S. List, and M. Rodder, "Role of Silicon Surface in the Removal of Point Defects in Ultra-shallow Junctions," *Appl. Phys. Lett. 69(15), p.2228, Oct. 1996.*

276. D.Kencke, R.Richart, S.Garg and S.Banerjee, "A Sixteeen Level Scheme for Multilevel Flash/EEPROM's," *Proc. IEDM,* 1996.

277. S. John , E. J. Quinones, B. Ferguson, S. K. Ray, C. B. Mullins, and S. K.Banerjee, "Surface morphology of SiGeC epitaxial films deposited by low temperature UHV-CVD, " *Proceedings of the MRS*-Thin Films Surfaces: Morphology and Roughening I, November 1996.

278. *S.Banerjee, "Shallow Junction Implants: As, B, BF2, C, Ge, In, Si," **Invited** talk, Silicon Valley Ion Implant Users Group Meeting, San Jose, CA, Nov. 19, 1996.

279. *S.Banerjee, "Defect Engineering for Ion Implanted Ultra-shallow Junctions," **Invited** talk, American Vac. Soc. Meet., Austin, TX ,June 4, 1997.

280. *S.Banerjee, "Defect Engineering with N and C Co-implants for Ultra-shallow Junctions," **Invited** Talk, National Ion Implant Users Meeting, Austin, TX, Oct. 1997.

281. Doris, J. Fretwell, J. L. Erskine, and S. K. Banerjee, "Effects of *In-situ* doping from B_2H_6 and PH_3 on hydrogen desorption and the Low Temperature Growth Mode of Si on Si(100) by Remote Plasma Enhanced Chemical Vapor Deposition," *Appl. Phys. Lett.*, 70(21), May 1997, pp. 2819-2821.

282. R. Sharma, J. Fretwell, B. Doris and S. Banerjee, "Use of Metal-Oxide-Semiconductor Capacitors in the Analysis of Low-temperature Epitaxial Si Films deposited by Remote Plasma-Enhanced Chemical Vapor Deposition", *J. of Appl. Phys.*, 82(5), Sept. 97, pp. 2684-89.

283. S. John, S. K. Ray, S. K. Oswal, and S. K. Banerjee, "Novel $Si_{1-x-y}Ge_xC_y$ Channel heterojunction PMOSFET," *Proc. SPIE* 1997.

284. S. John, S. K. Ray, S. K. Oswal, and S. K. Banerjee, "Strained Si NMOSFET on relaxed Si1-xGex formed by ion implantation of Ge," *Proc. SPIE* 1997.

285. *S.Banerjee, "Applications of Si-Ge-C in MOS and Bipolar Transistors, " **Invited** paper, *Proc. SPIE*, 1997.

286. K.Liu, S.Ray, S.Oswal, N.Chakraborty, R.Chang, D.Kencke and S.Banerjee, "Enhancement of Drain Current in Vertical SiGe/Si PMOS Transistor using Novel CMOS Technology," *Proc. IEEE Dev. Res. Conf*, June 1997.

287. K.Liu, S.Oswal, S.Ray, and S.Banerjee, "SiGe/Si vertical PMOSFET design and Fabrication," *Proc SPIE*, 1997.

288. T.Speranza, J.Nakos, V.Medina, S.Banerjee, G.Williamson, P.Lysaght and D.Lindhom, "Improved Methods for Evaluation of Rapid Thermal Processors," *Proc. Mat. Res. Soc*., April, 1997.

289. S.Raghu Nandan, V.Agarwal and S.Banerjee, "Study of Low Energy BF2/BCl2/BBr2 Implants for Achieving Ultra-shallow P+/N Junctions," *Proc. SPIE* 1997.

290. R.Sharma, J.Fretwell, J.Vaihinger, and S.Banerjee, "Automation of a Remote Plasma CVD System Using LabVIEW," *Proc. SPIE*, v. 3213, 119, 1997.

291. G.Hess, P.Parkinson, B.Gong, Z.Xu, D.Lim, M.Downer, S.John, S.Banerjee and J.Ekerdt. "Evolution of subsurface H from B-doped Si(100)," *Appl. Phys. Lett*., 71(15), p. 2184, Oct. 1997.

292. C.Seal, D.Samara, and S.Banerjee, "CVD Growth and characterization of undoped and doped Ge and Ge1-xCx quantum dots on Si," *Appl. Phys. Lett.,* 71(24), p. 3564, 1997.

293. C.Mullins, K.Pacheo and S.Banerjee, "Growth and Characterization of Si Thin Films Employing Supersonic Jets of SiH4 on Polysilicon and Si (100)," *J. Appl. Phys*. 82(1997), 6281-6288.

294. Raghu Srinivasa, Vikas Agarwal, Jinning Liu, Dan Downey, Sanjay Banerjee, "Annealing studies on low-energy As^+ and As_2^+ implants", presented at the 1998 MRS Spring Meeting, San Francisco.

295. L. Kencke, R. Richart, S. Garg and S. K. Banerjee, A Multilevel Approach Toward Quadrupling the Density of Flash Memory, *IEEE Electron Device Letters*, 19 (3), pp. 86-88, March 1998.

296. L. Kencke, X. Wang, S. Garg, S. K. Banerjee, "Programming and Retention for Quadruple Density Flash EEPROM's," *SRC TECHCON* '98, 1998. (**BEST PAPER AWARD)**

297. Quinones, S. John, S. Ray, S. Oswal, B. Anantharam, S. Banerjee, "Heterojunction PMOSFETS using Si1-x-yGexCy Alloys," SRC TECHCON 1998.

298. Q.Ouyang, H.Wang, S.Mudanai, S.Khan, M.Manassian, A.Tasch, C.Maziar and S.Banerjee, "Representative Deep Submicron MOS Device Structures for Device Model and Device Simulator Evaluation," SRC TECHCON, 1998.

299. H.Wang, Q.Ouyang, S.Mudanai, S.Khan, C.Maziar, A.Tasch and S.Banerjee, "A Generalized Physically-based Quantum Mechanical Model for Electron and Hole Accumulation Layers," SRC TECHCON 1998.

300. K.Liu, S.Ray, S.Oswal, and S.Banerjee, "A Deep Submicron SiGe/Si vertical PMOSFET Fabricated by Ge Ion Implantation," *IEEE Elec. Dev. Lett.,* 19(1), p. 13, Jan. 1998.

301. S.K.Ray, S.John, S.K.Oswal and S.K.Banerjee, "High mobility heterojunction PMOSFET using partially strained SiGeC"—Proc. International Workshop on Physics of Semiconductor Devices, 1998.

302. Akif Sultan, Sanjay Banerjee, Scott List, Vincent McNeil, "An approach using a subamorphizing threshold dose silicon implant of optimal energy to achieve shallower junctions", *J. Appl. Phys.,* Vol. 83, No. 12, June 1998, pp 8046 – 8050

303. S.Ray, L.Bera, C.Maiti, S.John and S.Banerjee, "Electrical Characteristics of Plasma Oxidized Si1-x-yGexCy MOS Capacitors," Appl. Phys. Lett. 72(8), March 1998.

304. Raghu Srinivasa, Vikas Agarwal, Sanjay Banerjee, "Use of low-energy BF_2^+, BCl_2^+ and BBr_2^+ implants for the fabrication of ultra-shallow P^+-N junctions", SRC TECHCON 1998. (**BEST PAPER AWARD**)

305. Raghu Srinivasa, Vikas Agarwal, Jinning Liu, Dan Downey, Sanjay Banerjee, "Use of screen oxides and As_2^+ implants to fabricate ultra shallow N^+-P junctions", SRC TECHCON 1998.

306. Vikas Agarwal, Raghu Srinivasa, David Hoglund, Sanjay Banerjee, "Use of nitrogen co-implants to produce shallower source drain extensions", SRC TECHCON 1998.

307. D.Kencke, X.Wang, H.Wang, Q.Ouyang, S.Jallepalli, M.Rashed, C.Maziar, A.Tasch and S.Banerjee, "The Origin of Secondary Electron Gate Current: Multiple-stage Monte Carlo Study for Scaled, Low-power Flash Memory," *Proc. IEDM*, p. 889, 1998.
308. S.K.Ray, L.K.Bera. C.K.Maiti, S.John and S.K.Banerjee, "MOS capacitor characteristics of plasma oxide on Partially strained SiGeC films" -Presented at the Int. Conference on Metallurgical Coatings and Thin Films, San Diego, April 26- May 1, 1998.
309. Majeed A. Foad, Roger Webb, Roger Smith, Erin Jones, Amir Al-Bayati, Mark Lee, Vikas Agarwal, Sanjay Banerjee, Jiro Matsuo, and Isao Yamada, "Formation of shallow junctions using decaborane molecular ion implantation; Comparison with molecular dynamics simulation", Ion Implant Technology Conf., May 1998.
310. *S.Banerjee, "Defect Engineering for Ion-implanted Ultra-shallow Junctions," Eaton Conference on Ion Implantation, Napa Valley, CA, Sept. 1998
311. Quinones, S. K. Ray, K. C. Liu, and S. Banerjee, "Enhanced mobility PMOSFETs using tensile-strained Si1-yCy layers," IEEE Elec. Dev. Lett., 1999, v. 20(7), p. 338.
312. R.Sharma, J.Fretwell, T.Ngai and S.Banerjee, "Remote Plasma-assisted deposition of gate quality oxides without the use of a pre-oxidation step," J. Electrochem. Soc. , vol. 146, pp. 2229, 1999.
313. R.Sharma, J.Fretwell, T.Ngai and S.Banerjee, "Properties of gate quality silicon dioxide films deposited on Si-Ge using remote plasma –enhanced chemical vapor deposition," J. Vac. Sci. Tech. B, vol. 17, pp. 460, 1999.
314. S.Mudanai, G. Chindalore, W.-K. Shih, H. Wang, Q. Ouyang, A. F. Tasch, C.M. Maziar and S.K. Banerjee, "Models for Electron and Hole Mobilities in MOS Accumulation Layers," IEEE TED, vol. 46, no. 8, August 1999.
315. K.-C. Liu, E.J. Quinones, B. Anantharam, X.D. Chen, S.K. Ray, and S.K. Banerjee, "Electrical Characteristics of Deep-Submicron Vertical $Si_{1-x}Ge_x$ n-MOSFETs," *Proc. of Electrochemical Society*, v. 195, May, 1999.
316. S. John, E.Quinones, B.Ferguson, S.Ray, B.Ananthram, S. Middlebrooks, C.Mullins, J.Ekerdt, J.Rawlings, and S.Banerjee, "Properties of UHVCVD Grown Si1-x-yGexCy Epitaxial Films, J. Electrochem. Soc. Dec. 1999.
317. S. John, S. K. Ray, E. Quinones, S. K. Oswal, and S. K. Banerjee, "Heterostructure P-channel metal-oxide-semiconductor transistor utilizing a Si1-xGexCy channel," App. Phys. Lett. v. 74, No.6, pp. 847., 8 Feb, 1999.
318. S. John, S. K. Ray, E. Quinones, and S. K. Banerjee, "Strained Si n-channel metal-oxide-semiconductor transistor on relaxed Si1-xGex formed by ion implantation of Ge," Appl. Phys. Lett. v. 74, No. 14, pp. , 5 April 1999.
319. E. Quinones, S.K. Ray, K.C. Liu and S.K. Banerjee "Enhanced Mobility PMOSFET's Using Tensile-Strained $Si_{1-y}C_y$ Layers," Elec.Dev.Lett, July 1999.
320. D.Kencke, W.Chen, H.Wang, S.Mudanai, Q.Ouyang, A.Tasch and S.Banerjee, "Source-side barrier effects with very high-K dielectrics in 50 nm Si MOSFETs*,"* Dev. Res. Conf., 1999.
321. *S.Banerjee, "Tinkering with the well-tempered MOSFET: Engineering the source-channel barrier," SRC-NASA Ames Third Device Modeling Workshop, Aug., 1999.
322. K. C. Liu*, X. Wang, E. Quinones, X. Chen, X. D. Chen, D. Kencke, B. Anantharam, R. D. Chang, S. K. Ray, S. K. Oswal, C. Y. Tu, and S. K. Banerjee, "A Novel Sidewall Strained-Si Channel nMOSFET", DRC, 1999.
323. M.Downer, L.Mantese, J.Ekerdt and S.Banerjee, "In situ real time monitoring of SiGe CVD by spectroscopic ellipsometry and SHG," European MRS, Strasbourg France, June 1999.
324. K. C. Liu*, X. Wang, E. Quinones, X. Chen, X. D. Chen, D. Kencke, B. Anantharam, R. D. Chang, S. K. Ray, S. K. Oswal, C. Y. Tu, and S. K. Banerjee, "A Novel Sidewall Strained-Si Channel nMOSFET", IEDM, 1999.
325. W.Qi, R.Nieh, T.Ngai, S.Banerjee and J.Lee, "MOSCAP and MOSFET characteristics using ZrO2 gatte dielectric deposited directly on Si," IEDM 1999.

326. Di Li, Ganesh Balamurugan, Borna Obradovic, Geng Wang, Yang Chen, and Al F. Tasch, "Computationally Efficient Model for 2-D Ion Implantation", Fifth International Symposium on Process Physics and modeling in Semiconductor Device Manufacturing, Electrochemical Society, 195th Meeting, May 2-6, 1999, Seattle, WA.
327. T.Kim, X.Chen and S.Banerjee, "Growth of relaxed SiGe structures by RTCVD," ECS Meeting, Austin, Texas, Feb. 2000.
328. Xiangdong Chen, Xiangdong Wang, Kou-chen Liu, Dong-won Kim and Sanjay Banerjee " Scanning tunneling spectroscopy investigation of strained $Si_{1-x}Ge_x$ band structure" Journal of Material Research, (16)6,p. 1257, June, 2000.
329. *S.Banerjee, "High ramp rate rapid thermal annealing for ultra-shallow junctions", with P.Kohli, H.Li, T.Kirichenko, S.Ganguly,**Invited** talk and paper, Electrochem. Soc. Proc. , Toronto, 2000.
330. Xiangdong Chen, Xiangdong Wang, Kou-chen Liu, Dong-won Kim and Sanjay Banerjee " Scanning tunneling spectroscopy investigation of strained $Si_{1-x}Ge_x$-on Si band Offsets" presented at MRS, Spring 2000, San Francisco.
331. Qiqing Ouyang, Xiangdong Chen, S. Mudanai, Xin Wang, David Kencke, Al. F. Tasch, Leonard F. Register, and Sanjay Banerjee, " A Novel Si/SiGe Heterojunction pMOSFET with Reduced Short-Channel Effects and Enhanced Drive Current," IEEE Trans. on Electron Devices, Vol. 47, No 10, Oct., 2000.
332. T.Ngai, J.Lee, S.Banerjee, "Electrical Properties of ZrO2 Gate Dielectric on SiGe," Appl. Phys. Lett., 76(4), p. 502, Jan. 2000.
333. Zhonghai Shi, Xiangdong Chen, David Onsongo, Eduardo Quinones, and Sanjay K. Banerjee "Simulation and optimization of strained $Si_{1-x}Ge_x$ buried channel p-MOSFETs," Solid State Electronics, 44 (7): 1223-1228 JUL 2000.
334. E. Quinones, S. John, S.K. Ray and S.K. Banerjee "Design, Fabrication, and Analysis of SiGeC Heterojunction PMOSFETs," Trans.Elec.Dev., Sept. 2000.
335. H.J.Li, P.Kohli, S.Ganguly, T.Kirichenko, S.Banerjee, P.Zeitzoff, "B Diffusion in Si in presence of other species," Appl. Phys. Lett., 77(17), p. 2683, 2000.
336. T.Ngai, J.Lee, S.Banerjee, "Electrical Properties of ZrO2 Gate Dielectric on SiGe," DRC, 2000.
337. Q.Ouyang, X.Chen, ..A.Tasch, S.Banerjee, "Bandgap Engineering in Deep Submicron Vertical PMOSFETs," Dev. Res. Conf., 2000.Xiangdong Chen, QiqingOuyang, Kou-Chen Liu, Zhonghai Shi, Al Tasch and Sanjay Banerjee "Vertical P-MOSFETS with heterojunction between source/drain and channel," Dev.Res. Conf. 2000, Denver.
339. S. Mudanai, Y-Y Fan, Q. Ouyang, A. F. Tasch, F. Register, D. L. Kwong, and S. Banerjee, "Modeling of Direct Tunneling Current Through Gate Dielectric Stacks", SISPAD 2000, September, 2000.
340. "Modeling High-K Gate Current from p-type Si Inversion Layers", Y-Y Fan, S. Mudanai, Q.Li, J.Lee, A. F. Tasch, F. Register, and S. Banerjee, DRC June, 2000.
341. "Two-Dimensional Bandgap Engineering in a Novel Si/SiGe pMOSFET with Enhanced Device Performance and Scalability," Q. Ouyang, X. D. Chen, S. Mudanai, D. L. Kencke, X. Wang, A. F. Tasch, and L. F. Register, and S. K. Banerjee, SISPAD, September 2000.
342. "Two-Dimensional Bandgap Engineering in a Novel Si/SiGe pMOSFET," Q. Ouyang, X. D. Chen, S. Mudanai, D. L. Kencke, X. Wang, A. F. Tasch, and L. F. Register, and S. K. Banerjee, TECHCON, September 2000.
343. "Electron Transport Properties in Novel Orthorhombically-strained Si Material Explored by the Monte Carlo Method," Xin wang, D. L. Kencke, K. C. Liu, A. F. Tasch,Jr., L. F. Register and S. K. Banerjee, SISPAD 2000
344. "Monte Carlo study on electron transport properties in novel orthorhombically-strained Si material" Xin Wang, D. L. Kencke, K. C. Liu, A. F. Tasch,Jr. L. F. Register and S. K. Banerjee, SRC-TECHCON 2000

345. Y.Chen, G.Weng,D.Li, S.Oak, G.Srivasta, A.Tasch and S.Banerjee, "Universal model for implantation of any species into Si," SRC TECHCON, 2000.
346. D.Kencke, X.Wang, Q.Ouyang, S.Mudanai, A.Tasch and S.Banerjee, "Enhanced Secondary Electron Injection in Novel SiGe Flash Memory Devices," Int. Elec. Dev. Meet,. 2000.
347. W.Chen, Q.Ouyang, F.Register and S.Banerjee, "Quantum effects Along the Channel of Ultra-scaled Si MOSFETs?", Int. Elec. Dev. Meet,. 2000.
348. Hong-Jyh Li, Puneet Kohli, Swaroop Ganguly, Taras A. Kirichenko, Peter Zeitzoff, Kenneth Torres and Sanjay Banerjee, "Boron Diffusion and Activation in the Presence of Other Species" *IEDM 2000 Technical Digest pp.515-518, Dec. 2000, San Francisco*
349. S. Mudanai, Y-Y. Fan, Q. Ouyang, A. F. Tasch, D. L. Kwong, F. Register and S. Banerjee; Modeling of Direct Tunneling Current Through Gate Dielectric Stacks; TECHCON 2000, Semiconductor Research Corporation, Phoenix, Arizona, September 21-23, 2000.
350. X. Chen, Q. Ouyang, K-C. Liu, Z. Shi, A. Tasch and S. Banerjee; Sub-100nm Vertical P-MOSFETs with Heterojunction Between Source and Channel; TECHCON 2000, Semiconductor Research Corporation, Phoenix, Arizona, September 21-23, 2000.
351. Z. Shi, X. Chen, D. Onsongo, E. J. Quinones and S. K. Banerjee; Simulation and Optimization of Strained Si(1-x)Ge(x) Buried Channel p-MOSFETs; TECHCON 2000, Semiconductor Research Corporation, Phoenix, Arizona, September 21-23, 2000.
352. X.Chen, K.Liu, S.Ray and S.Banerjee, "Bandgap Engineering in Vertical PMOSFETs," IEEE Int. Conf.on, Communications, Computers and Devices, Kharagpur, 2000.
353. S.Ray, S.Maikap, S.Samanta, S.Banerjee and C.Maiti, "Charge Trapping Characteristics of Ultrathin Oxynitrides on Si/SiGeC/Si Heterolayers, IEEE Int. Conf.on, Communications, Computers and Devices, Kharagpur, 2000.
354. D. Onsongo, E. Quinones, Z. Shi, P. Williamson and S. Banerjee; Tensile-Strained Si(1-y)C(y) Alloy pMOSFETs on UHVCVD Epitaxial Films; TECHCON 2000, Semiconductor Research Corporation, Phoenix, Arizona, September 21-23, 2000.
355. S. K. Jayanarayanan, X. Chen, K-C. Liu and S. Banerjee; Hole and Electron Mobility Enhancement in Strained SiGe Vertical MOSFETs; TECHCON 2000, Semiconductor Research Corporation, Phoenix, Arizona, September 21-23, 2000.
356. Y-Y. Fan, S. Mudanai, W. Qi, J. C. Lee, A. F. Tasch, L. F. Register and S. K. Banerjee; Modeling Gate Current Through High K Stacked Dielectrics: Electron Tunneling from Inversion Layers; TECHCON 2000, Semiconductor Research Corporation, Phoenix, Arizona, September 21-23, 2000.
357. S. Maikap, L. K. Bera, S. K. Ray, S. John, S. K. Banerjee and C. K.Maiti, "Electrical characterization of Si/Si1-xGex/Si quantum well heterostuctures using a MOS capacitor", Solid-State. Electron., Vol. 44, pp. 1029-1034, 2000.
358. S. Maikap, S. K. Ray, S. John, S. K. Banerjee and C. K. Maiti, "Electrical characterization of ultra-thin gate oxides on Si/Si1-x-yGexCy/Si quantum well heterostructures", Semicond. Sci. Technol., 2000.
359. G.Kar, A.Dhar, S.ray, S.John and S.Banerjee, "Hall mobilities in B-doped strained SiGe and SiGeC layers grown by UHVCVD," J. Appl. Phys. 88(4), p. 2039, August 2000.
360. D. L. Kencke, Q. Ouyang, W. Chen, H. Wang, S. Mudanai, , A. Tasch, and S. K. Banerjee, "Tinkering with the well-tempered MOSFET: source-channel barrier modulation with high permittivity dielectrics", Superlattices and Microstructures, 27 (2/3), 2000.
361. S.Mudanai, G. Chindalore, W.-K. Shih, H. Wang, Q. Ouyang, A. F. Tasch, C.M. Maziar and S.K. Banerjee "Models for Electron and Hole Mobilities in MOS Accumulation Layers,", IEEE TED, vol. 46, no. 8, p. 1749, 2000.
362. S. Mudanai, Y.-Y. Fan, Q. Ouyang, A. F. Tasch, and S. K. Banerjee, "Modeling of Direct Tunneling Current Through Gate Dielectric Stacks," *IEEE TED, Computational Electronics: New Challenges and Directions*, pp. 1851-1857, Vol. 47, No. 10, October, 2000

363. Xiangdong Chen, QiqingOuyang, David M. Onsongo, S. K. Jayanarayanan, Al Tasch and Sanjay Banerjee "SiGe heterojunction vertical p-type metal-oxide-semiconductor field-effect transistor with Si cap," Applied Physics Letters, Vol 77, No. 11, Sep. 11, 2000

364. Xin Wang, D. L. Kencke, K. C. Liu, A. F. Tasch, Jr., L. F. Register, and S. K. Banerjee, "Monte Carlo Simulation on Electron Transport in simple Orthorhombically-strained Silicon", J. Appl. Phys. 88, 4717 (2000).

365. S. Mudanai, L. F. Register, A. F. Tasch, and S. K. Banerjee, "Understanding the effects of Wave Function Penetration on the Inversion Layer Capacitace of NMOSFETs," *IEEE Electron Device Letters,* pp. 145-147, Vol. 22, No. 3 March 2001.

366. S. Mudanai, L. F. Register, A. F. Tasch, and S. K. Banerjee, "A New and Accurate Quantum Mechanical Compact Model for NMOS Gate Capacitance," the *59th Annual Device Research Conference*, June 2001.

367. Qiqing (Christine) Ouyang, Xiangdong Chen, Al F. Tasch, Leonard F. Register, Sanjay K. Banerjee, Jack O Chu, and John A. Ott, "Fabrication of a Novel Vertical pMOSFET with Enhanced Drive Current and Reduced Short-Channel Effects and Floating Body Effects", VLSI Symp. Proc. July 2001.

368. T. Ngai, R. Sharma, J. Fretwell, X. Chen, J. Chen, W. Brookover, and S. Banerjee, "Remote plasma deposited gate dielectrics on Si and SiGe MOSFETs", Electrochemical Society Meeting, March 2001

369. T. Ngai, R. Sharma, J. Fretwell, X. Chen, J. Chen, and S. Banerjee, "Improvement of SiO2/SiGe Interface of SiGe pMOSFETs Using Water Vapor Annealing", 2001 Electronic Materials Conference

370. T. Ngai, K. Onishi, R. Choi, C. Kang, J. Fretwell, X. Chen, J. Chen, J.C. Lee, and S.K. Banerjee, "Electrical Properties of HfO2 Gate Dielectric on SiGe", 2001 Electronic Materials Conference

371. S.Oak, G.Shrivastava, Y. Chen, G. Wang, D. Li, A. F. Tasch, S.Banerjee, "Modeling of implant into photoresist," IWCE, Urbana, IL 2001.

372. Wang, B. Obradovic, Y. Chen, D. Li, S. Oak, G. Srivastav, S. Banerjee and A.Tasch, "*A Computationally Efficient Target Search Algorithm for A Monte Carlo Ion Implantation Simulator*", Journal of Technology Comuter Aided Design , http://www.ieee.org/products/online/journal/tcad/Wang-May01/search.pdf

373. G Shrivastav, G. Wang, Y. Chen, D Li, S. Oak A. Tasch and S. Banerjee, A Universal Analytical 1-D *Model for Ion Implantation into Single-Crystal Silicon Based on Legendre Polynomials*, IWCE, 2001.

374. Shrivastav, G, Wang, Y. chen, D Li, S. Oak, A. Tasch and S. Banerjee, *Monte Carlo modeling of ion implantation into SiGe,* Presented at EMC, June 2001.

375. Di Li, Geng Wang, Yang Chen, Gaurav Shrivastav, Stimit Oak, Al Tasch and Sanjay Banerjee, "A Computationally Efficient Model for Three-dimensional MonteCarlo Simulation of Ion Implantation into Complex Structures", SISPAD 2001 Athens, Greece.

376. Di Li, Geng Wang, Yang Chen, Gaurav Shrivastav, Stimit Oak, Al Tasch and Sanjay Banerjee, "A Computationally Efficient Model for Three-dimensional Monte Carlo Simulation of Ion Implantation into Complex Structures", IWCE 2001, Urbana, IL.

377. Hong-Jyh Li, Puneet Kohli, Swaroop Ganguly, Taras A. Kirichenko, Peter Zeitzoff, Kenneth Torres and Sanjay Banerjee, "Boron Diffusion and Activation in the Presence of Other Species" *International Conference on Computational Nanoscience, South Carolina March,* 2001 (ICCN 2001.)

378. Hong-Jyh Li, Xiao Chen, Peter Zeitzoff, Kenneth Torres, and Sanjay Banerjee, "Empirical Parameter-Free Recipe for Implantation and Annealing Modeling of N+ Source and Drain in the 180nm and 100nm Technology Node", *199th Electrochemical Society Conference, Washington, D.C.,* March 2001

379. Hong-Jyh Li, Taras A. Kirichenko, Swaroop Ganguly, Puneet Kohli, Sanjay Banerjee, David Sing, Peter Zeitzoff, Kenneth Torres, Steve McCoy, Kiefer Elliott "A Study of Rapid Thermal Annealing of Shallow BF_2 Implants", *Ultra Shallow Junctions-2001, Napa, California, April, 2001*

380. Hong-Jyh Li, Taras A. Kirichenko, Swaroop Ganguly, Puneet Kohli, Sanjay Banerjee, David Sing, Peter Zeitzoff, Kenneth Torres, Steve McCoy, Kiefer Elliott "A Study of Ultra-High Ramp Rate Thermal Annealing", *The ECS International Semiconductor Technology Conference (ISTC-2001), Shanghai, China, May, 2001*

381. Hong-Jyh Li, Sanjay Banerjee, Peter Zeitzoff, and Kenneth Torres, "TCAD Validation and Process Optimization Prediction Using Taguchi Method", *2001 Quality and Productivity Research Conference*

382. B.Choi, M.Meissl, M.Coburn, T.Bailey, P.Ruchoeft, S.Sreenivasan, F.Prins, S.Banerjee, J.Ekerdt and G.Willson, "Layer to layer alignment for step and flash lithography," SPIE, March 2001.

383. *S.Banerjee, "RPCVD oxides on SiGe," **Invited** talk, Electrochem. Soc. Proc. 2001. **Invited** paper with Tat Ngai, X.Chen and J. Chen.

384. P.Kohli, S.Ganguly, T.Kirichenko, H-J. Li, S.Banerjee,E.Graetz, M.Shevelev, "Microwave Annealing of P/N Ultra Shallow Junctions," USJ Workshop, 2001.

385. G. Wang, Y. Chen, D. Li, S. Oak, G. Shrivastav, S. Banerjee, A. Tasch, P. Merril*, R. Bleiler*,"Oxygen Recoil Effect During Ion Implantation Through Oxide", J APPL PHYS 89 (11): 5997-6001 Part 1 JUN 1 2001

386. Y. Chen, G. Wang, D. Li, Stimit Oak, Gaurav Shrivastav , A.F. Tasch and Sanjay Banerjee, "Monte Carlo Simulation Models for Ion Implantation into Silicon Nitride and Titanium Silicide," EMC,2001.

387. Ray SK, Maikap S, Samanta SK, S. Banerjee, Charge trapping characteristics of ultrathin oxynitrides on Si/Si1-x-yGexCy/Si heterolayers, SOLID STATE ELECTRON 45 (11): 1951-1955 NOV 2001

388. Ray SK, Kar GS, Banerjee SK,Characteristics of UHVCVD grown Si/Si1-x-yGexCy/Si quantum well heterostructure, APPL SURF SCI 182 (3-4): 361-365 Sp. Iss. SI OCT 22 2001

389. Chen XD, Liu KC, Ouyang QC, Banerjee SK, Hole and electron mobility enhancement in strained SiGe vertical MOSFETs, IEEE T ELECTRON DEV 48 (9): 1975-1980 SEP 2001

390. Kar GS, Ray SK, Kim T, Banerjee SK, Estimation of hole mobility in strained Si1-xGex buried channel heterostructure PMOSFET, SOLID STATE ELECTRON 45 (5): 669-676 MAY 2001

391. Ouyang QQC, Chen XD, Tasch AF, Banerjee SK, Built-in longitudinal field effects in sub-100-nm graded Si1-xGex channel PMOSFETs, IEEE T ELECTRON DEV 48 (6): 1245-1250 JUN 2001

392. Ngai T, Qi WJ, Sharma R, Banerjee SK, Transconductance improvement in surface-channel SiGe p-metal-oxide-silicon field-effect transistors using a ZrO2 gate dielectric, APPL PHYS LETT 78 (20): 3085-3087 MAY 14 2001

393. Maikap S, Ray SK, Banerjee SK, Electrical properties of O-2/NO-plasma grown oxynitride films on partially strain compensated Si/Si1-x-yGexCy/Si heterolayers, SEMICOND SCI TECH 16 (3): 160-163 MAR 2001

394. Li D, Wang G, Chen Y, Tasch AF, Banerjee SK, A computationally efficient simulator for three-dimensional Monte Carlo simulation of ion implantation into complex structures, NUCL INSTRUM METH B 184 (4): 500-508 DEC 2001

395. Chen XD, Liu KC, Ray S, Banerjee SK, Bandgap engineering in vertical P-MOSFETs, SOLID STATE ELECTRON 45 (11): 1939-1943 NOV 2001

396. Kim DW, Kim YH, Chen XD, Prins F, KWONG DL, Banerjee SK, Growth of germanium quantum dots on different dielectric substrates by chemical-vapor deposition, J VAC SCI TECHNOL B 19 (4): 1104-1108 JUL-AUG 2001

397. Chen XD, Ouyang QQ, Jayanarayanan SK, Prins F and Banerjee S, Vertical p-type high-mobility heterojunction metal-oxide-semiconductor field-effect transistors, APPL PHYS LETT 78 (21): 3334-3336 MAY 21 2001
398. Chen XD, Ouyang Q, Jayanarayanan SK, Banerjee SK, An asymmetric Si/Si1-xGex channel vertical p-type metal-oxide-semiconductor field-effect transistor, SOLID STATE ELECTRON 45 (2): 281-285 FEB 2001
399. Xiangdong Chen, Kou-Chen Liu, Sankaran Kartik Jayanarayanan, and Sanjay Banerjee,"Electron mobility enhancement in strained SiGe vertical n-type metal-oxide semiconductor field-effect transistors" Appl. Phys. Lett., 78(3), P.377, 2001.
400. Dong-Won Kim, Young-Hee Kim, Freek E. Prins, Dim-Lee Kwong, and Sanjay Banerjee, "Fabrication of Germanium Dots on Different Dielectric Substrates", 2001 Electrical Materials Conference, June 2001.
401. Dong-Won Kim, Freek Prins, Kil-Soo Ko, C. H. Lee, Dim-Lee Kwong, and Sanjay Banerjee, "The Characterization of Initial Growth of Polycrystalline Silicon Germanium Films on Zirconium Oxide." 2001 MRS Fall, Nov. 2001.
402. Sankaran Jayanarayanan, Freek Prins, Xiangdong Chen, Sanjay Banerjee, "Enhanced Mobility in 100 nm strained SiGe vertical PMOSFETs fabricated by UHVCVD," Materials Research Symposium, November 2001.
403. Di Li, Li Lin, Geng Wang, Yang Chen, Gaurav Shrivastav, Stimit Oak, Al F. Tasch, Sanjay K. Banerjee, "Monte Carlo Simulation of Ion Implantation (3-dimensional) and Defect Modeling During Implantation Process", International Electron Device Meeting, Technical Digest, December, 2001, Washington, DC.
404. L. F. Register, S. Mudanai and S. K. Banerjee, "A New and Accurate Quantum Mechanical Compact Model for NMOS Gate Capacitance," Compact Modeling Council Meeting, Texas Instruments, Dallas, TX, 2001.
405. S. K. Ray, G. S. Kar, S. Maikap and S. K. Banerjee, " Comparison of temperature dependent device parameters for strained-$Si_{1-x}Ge_x$ and partially strain compensated $Si_{1-x-y}Ge_xC_y$ heterostructure PMOSFETs", "First Int'l Workshop on New Group IV(Si-Ge-C) Semiconductors, 2001", Miyagi, Japan.
406. Qiqing C. Ouyang, Xiangdong Chen, S. K. Jayanarayanan, Freek Prins, Sanjay Banerjee "Performance enhancment in vertical sub-100nm nmosfets with graded doped channels", "Fourth IEEE International Caracas conference on devices, circuits and systems," April 2002, Aruba.
407. Di Li, Shyh Horng, Chuck Machala, Al F. Tasch and Sanjay K. Banerjee, "Sb implant Modeling into Si ", Simulation of Semiconductor Processes and Devices, 2002, Japan.
408. *S.Banerjee, "Two Ways to Mess up the Si MOSFET: SiGe Channels and High-k gate Dielectrics," Micron Distinguished Lecture Series, Boise, April 2002.
409. *S.Banerjee, "Two Ways to Mess up the Si MOSFET: SiGe Channels and High-k gate Dielectrics," IEEE EDS Distinguished Lecture Series, Portland, Maine, 2002.
410. *S.Banerjee, "Bandgap and Strain Engineered Planar and Vertical Si-Ge-C MOSFETs," Int. Symp. On Nano and Giga Microelectronics, Moscow, Russia, Sept. 2002.
411. *S.Banerjee, "SiGe MOSFETs with high dose Ge implantation," CAARI, Nov. 2002, Denton, TX.
412. *L.F.Register, W.Chen and S.Banerjee, "Phonon scattering in nanostructures: functions and challenges to modeling," IEEE Nano 2002, Arlington, WVA.
413. Y.Chen, D. Li, L.Lin, A.Tasch and S.Banerjee, "Quantum mechanical model of electronic stopping power for ions in a free electron gas over the entire energy range," 14th IIT, Taos, NM, Sept. 2002.
414. H.Li, T.Kirichenko, P.Kohli, E.Graetz, P.Zeitzoff, R.Tichy, L.Larson and S.Banerjee, "B Retarded Diffusion in the presence of In and Ge," 14th IIT, Taos, NM, Sept. 2002.
415. W.Chen, L.Register and S.Banerjee," Simulation of quantum effects along the channel of Ultra-scaled Si-based MOSFETs," DRC , Santa Barbara, 2002.

416. D.Kim, F.Prins, T.Kim, D.Kwong and S.Banrjee, "Charge retention Characteristics of SiGe Quantum Dot Flash Memories," DRC , Santa Barbara, 2002.
417. Z.Shi, D.Onsongo, X.Chen, R.Nieh and S.Banerjee, "Ni Silicidation Techniques for Strained SiGe/SiGeC/SiC Alloys," EMC , Santa Barbara, 2002.
418. D.Kim, S.Hwang, T.Edgar and S.Banerjee, "Characterization of initial nucleation of SiGe Dots on SiO2 and HfO2 substrates for nanoelectronic devices," EMC , Santa Barbara, 2002.
419. Kar GS, Dhar A, Bera LK, Banerjee SK, Effect of carbon on lattice strain and hole mobility in Si1-xGex alloys, J MATER SCI-MATER EL 13 (1): 49-55 2002
420. Kar GS, Maikap S, Ray SK, et al., Effective mobility and alloy scattering in the strain compensated SiGeC inversion layer SEMICOND SCI TECH 17 (5): 471-475 MAY 2002
421. Chen WQ, Register LF, Banerjee SK, Simulation of quantum effects along the channel of ultrascaled Si-based MOSFETs, IEEE T ELECTRON DEV 49 (4): 652-657 APR 2002
422. Ngai T, Chen X, Chen J, et al., Improving SiO2/SiGe interface of SiGe p-metal-oxide-silicon field-effect transistors using water vapor annealing, APPL PHYS LETT 80 (10): 1773-1775 MAR 11 2002
423. Kar GS, Maikap S, Banerjee SK, et al., Hole velocity overshoot in partially strain compensated Si0.793Ge0.2C0.007 inversion layers, ELECTRON LETT 38 (3): 141-142 JAN 31 2002
424. Kohli P, Ganguly S, Kirichenko T, et al. Microwave annealing for ultra-shallow junction formation, J ELECTRON MATER 31 (3): 214-219 MAR 2002
425. Ganguly S, Lin L, Kohli P, et al. Comparison of low energy BF2+, BCl2+, and BBr2+ implants for the fabrication of ultrashallow P+-N junctions, J APPL PHYS 91 (4): 2023-2027 FEB 15 2002
426. Li D, Shrivastav G, Wang G, Tasch A, Banerjee S, Accurate and computationally efficient analytical 1-D and 2-D ion implantation models based on Legendre polynomials, IEEE T ELECTRON DEV 49 (7): 1172-1182 JUL 2002.
427. Sanjay Banerjee, "Silicon-Germanium -Carbon Self Assembled Quantum Dot Growth and Applications in Electronic Memory Device." International Conference on Science and Technology of Interfaces, TMS, Seattle, Feb. 2002. **Invited** paper with Dong Kim.
428. Chen Y, Wang G, Li D, Banerjee SK et al. "A universal ion implantation model for all species into single-crystal silicon,"IEEE T ELECTRON DEV 49 (9): 1519-1525 SEP 2002.
429. Kar GS, Maikap S, Banerjee SK, et al., "Series resistance and mobility degradation factor in C-incorporated SiGe heterostructure p-type metal-oxide semiconductor field-effect transistors," SEMICOND SCI TECH 17 (9): 938-941 SEP 2002.
430. Kar GS, Dhar A, Bera LK, Banerjee SK, "Effect of carbon on lattice strain and hole mobility in Si1-xGex alloys," J MATER SCI-MATER EL 13 (1): 49-55 2002.
431. Li HJ, Kirichenko TA, Kohli P, Banerjee SK et al., "Boron retarded diffusion in the presence of indium or germanium," IEEE ELECTR DEVICE L 23 (11): 646-648 NOV 2002.
432. Wang X, Kencke DL, Liu KC, et al.,"Band alignments in sidewall strained Si/strained SiGe heterostructures," SOLID STATE ELECTRON 46 (12): 2021-2025 DEC 2002.
433. Fan YY, Nieh RE, Lee JC, Banerjee SK et al.,"Voltage- and temperature-dependent gate capacitance and current model: Application to ZrO2 n-channel MOS capacitor," IEEE T ELECTRON DEV 49 (11): 1969-1978 NOV 2002
434. Chen XD, Ouyang QC, Wang G, Banerjee SK et al.,"Improved hot-carrier and short-channel performance in vertical nMOSFETs with graded channel doping," IEEE T ELECTRON DEV 49 (11): 1962-1968 NOV 2002
435. Mudanai S, Li F, Samavedam SB, Banerjee SK et al., "Interfacial defect states in HfO2 and ZrO2 nMOS capacitors,"IEEE ELECTR DEVICE L 23 (12): 728-730 DEC 2002
436. Y.Chen, D. Li, L.Lin, A.Tasch and S.Banerjee, "Quantum mechanical model of electronic stopping power for ions in a free electron gas," 14th Int.Conf. on Ion Implant Technology, Taos, NM, Sept. 2002.

437. D.Kim, F.Prins, K.Ko, C.Lee, D.Kwong and S.Banerjee, "The Characteriation of initial growth of polycrystalline SiGe fims on ZrO2," MRS, v.686, 2002.
438. Li HJ, Bennett J, Zeitzoff P, Banerjee SK et al.,"Indium out-diffusion from silicon during rapid thermal annealing," IEEE ELECTR DEVICE L 24 (4): 221-223 APR 2003
439. Fan YY, Xiang Q, An J, Banerjee SK et al.,"Impact of interfacial layer and transition region on gate current performance for high-K gate dielectric stack: Its tradeoff with gate capacitance," IEEE T ELECTRON DEV 50 (2): 433-439 FEB 2003
440. Kim DW, Prins FE, Kim T, Banerjee SK et al.,"Reduction of charge-transport characteristics of SiGe dot floating gate memory device with ZrO2 tunneling oxide," IEEE T ELECTRON DEV 50 (2): 510-513 FEB 2003
441. Kim DW, Hwang SB, Edgar TF, Banerjee SK et al.,"Characterization of SiGe quantum dots on SiO2 and HfO2 grown by rapid thermal chemical deposition for nanoelectronic devices,"J ELECTROCHEM SOC 150 (4): G240-G243 APR 2003
442. Shi ZH, Onsongo D, Onishi K, Banerjee SK et al.,"Mobility enhancement in surface channel SiGePMOSFETs with HfO2 gate dielectrics," IEEE ELECTR DEVICE L 24 (1): 34-36 JAN 2003
443. Shi ZH, Onsongo D, Chen X, Banerjee SK et al.,"Nickel silicidation techniques for strained Si1-xGex, Si1-x-yGexCy, and Si1-yCy alloys material-device applications,"J ELECTRON MATER 32 (3): 184-190 MAR 2003
444. Banerjee SK, "Bandgap and Strain engineered SiGeC vertical and planar," MOSFETs, Microelectronic Eng. 69 (2-4): 106-117 SEP 2003. (**Invited** paper)
445. Xia TS, Register LE, Banerjee SK," Quantum transport in double-gate MOSFETs with complex band structure," IEEE T ELECTRON DEV 50 (6): 1511-1516 JUN 2003
446. S.Banerjee, "Quantum mechanical modeling of CV and IV behavior of SiO2 and high-k dielectrics," ECS Callinan Address, Paris, April 2003. (with L. Register, Y.Fan and S.Mudanai) (**INVITED**)
447. X.Chen, Z.Shi, J.Zhou, L.Rabenberg and S.Banerjee, "High resolution TEM of silicide formation and stability of Ni/Si and Ni/SiGe," TMS, Seattle, Feb. 2003
448. Z.Shi, D.Onsongo, and S.Banerjee, "Performance Enhancement in 70 nm channel length strained SiGe PMOSFETs," 1st SiGe workshop, Nagoya, Japan, Jan. 2003.
449. T.Kirichenko, D.Yu, S.Banerjee and G.Hwang, "Dynamics of intrinsic defects in Si (001) surfaces and Si/SiO2 interfaces: A first principles study," APS March Meeting, 2003, Austin, TX.
450. D.Kim, T.Kim, Y.Liu, L.Weltzer and S.Banerjee, "SiGe quantum dot memory devices with HfO2 tunneling oxide," DRC, Salt Lake, UT, June 2003.
451. F.Li, S.Mudanai, Y.Fan, L.Register and S.Banerjee, "Compact model of MOSFET electron tunneling current through ultra-thin SiO2 and high-k stacks," DRC, Salt Lake, UT, June 2003.
452. P.Kohli, A.Jain, H.Bu, S.Chakravarthi, CMachala, S.Dunham and S.Banerjee, "Effect of sidewall nitride spacer process of B dose loss in ultra-shallow junction formation," USJ 2003.
453. H.Li, P.Zeitzoff, R.Tichy, L.Larson and S.Banerjee, "B diffusion in Si with pre-amorphization of different species," USJ 2003.
454. D.Onsongo, Z.Shi and S.Banerjee, "Enhanced performance in strained SiGe surface channel and buried channel PMOSFETs," SRC TECHCON, Dallas, Aug. 2003.
455. F.Li, S.Mudanai, Y.Fan, L.Register and S.Banerjee, "Compact gate capacitance and gate current modeling of MOSFETs with high-k gate dielectrics," SRC TECHCON, Dallas, Aug. 2003.
456. H.Li, T.Rhoad, P.Zeitzoff, R.Tichy, L.Larson and S.Banerjee, "B diffusion in low energy B/BF2 implants with pre-amorphization of different species," MRS, April 2003.
457. F.Li, S.Mudanai, Y.Fan, L.Register and S.Banerjee, "A simulated annealing approach for automatic extraction of device and material parameters of MOS with SiO2/high-k gate stacks" UGIM, Bose, ID, June 2003.
458. J.Oh, S.Banerjee and J.Campbell, "Metal-Ge-metal photodetectors on heteroepitaxial Ge-on-Si with amorphous Ge Schottky barrier enhancement layers," LEOS 2003.

459. S.Banerjee, "SiGe MOS Technology," NSF Workshop on New Materials and Devices, Stanford Univ., Aug. 21, 2003 (**INVITED**)

460. B.Smith, N.Stacey, J.Donnelly, D.Onsongo, T.Bailey, C.Mackay, D.Resnick, W.Dauksher, D.Mancini, K.Nordquist, S.Sreenivasan, S.Banerjee, J.Ekerdt and C.Willson, "Employing Step and Flash Imprint Lithography for Gate Level Patterning of a MOSFET Device," ML 5037-124, SPIE 2003.

461. W. Chen, L. F. Register and S.K. Banerjee, "Two Dimensional Quantum Mechanical Simulation of Electron Transport in Nano-Scale Si-Based MOSFETs, Physica E 19, 28-32 (2003) (Proceedings of the Fourth International Symposium on Nanostructures and Mesoscopic Systems [NanoMES] 2003).

462. L. F. Register, W. Chen and Sanjay K. Banerjee, "Bridging the Gap Between Classical and Semiclassical Transport in Nanoscale MOSFETs: Schrödinger Equation Monte Carlo-2D," presented on The 15th Biennial IEEE University/Government/Industry Microelectronics Symposium (UGIM'03), Boise, Idaho, June 30-July 2, 2003 (**INVITED**).

463. W. Chen, L. F. Register, and S. K. Banerjee, "Scattering in a Nano-Scale MOSFET: A Quantum Transport Analysis," presented on IEEE Nano2003, San Francisco, CA, August 2003.

464. Chen X, Shi Z, Banerjee SK, Zhou JP, Rabenberg LK, "High-resolution transmission electron microscopy of silicide formation and morphology development of Ni/Si and Ni/Si1-xGex," J ELECTRON MATER 32 (11): 1171-1181 NOV 2003

465. Kim DW, Kim T, Banerjee SK, Memory characterization of SiGe quantum dot flash memories with HfO2 and SiO2 tunneling dielectrics," ELECTRON DEV 50 (9): 1823-1829 SEP 2003

466. Deen J, Marinov O, Onsongo D, Dey S, and Banerjee SK, "Low frequency noise in SiGeC-based pMOSFETs," Fluctuation and Noise Symposium in Maspalomas, Gran Canaria, Spain, May 2004

467. Register LF, Chen W and Banerjee SK, "SEMC-2D for simulation fo quantum transport and scattering in nanoscale non-classical CMOS," 5th Motorola Workshop on Computational Materials and Electronics, Austin, TX, 2004.

468. Kirichenko TA, Yu D, Banerjee SK and Hwang G, "Structure and dynamics of Si interstitials at Si (100) and Si(100)/SiO2, ECS Symp. Proc., San Antonio , 2004.

469. Kelly D, Onsongo D, Dey S, Wise R, Cleavelin R, and Banerjee SK, "Enhanced hot-electron performance of strained Si NMOS over unstrained Si, Proc. IRPS, 2004.

470. Banerjee SK and Register LF, "Quantum mechanical modeling of CV and IV behavior of SiO2 and high-k dielectrics," 5th Motorola Workshop on Computational Materials and Electronics, Austin, TX, 2004.

471. Kirichenko TA, Yu D, Hwang G, and Banerjee SK, "Behavior of vacancies, interstitials, and B-interstitail pairs at Si_a:SiO2 interface," MRS Symp. Proc., San Francisco , 2004.

472. Banerjee SK, Kim D, Kim T, Weltzer L, Liu Y, Tang S and Palard M, "Nanoparticle floating gate flash memories, DRC 2004, ***Invited*** *Talk.*

473. Banerjee SK, "SiGeC HFETs," International Conference on Physics of Semiconductors, Phoenix, July 2004, ***Invited*** *Tutorial.*

474. Tongsheng Xia, Leonard F. Register, and Sanjay K. Banerjee, "Complex band structure-based non-equilibrium Green's function (NEGF) transport studies for Ultra-scaled Carbon nanotube (CNT) transistors," DRC, 2004.

475. S.Jayanarayan, W.Bai, D.Kwong, S.Banerjee, "Si and SiGe Vertical MOSFETs with CVD HFO2 gate dielectric", EMC 2004.

476. S.Joshi, X.Chen, D.Kelly, T.Ngai, J.Chen and S.Banerjee, "MOS Capacitors on epitaxial Ge/SiGe with high-k dielectrics, EMC 2004.

477. S.Banerjee, Nanoelectronics **invited** short course and organizer, SEMI, Austin, 2004.

478. S.Banerjee, "Microelectronics: The End the Beginning or Beginning of the End," **Invited** talk to SEMATECH Board of Directors, San Jose, 2004

479. L.Weltzer and S.Banerjee, "Enhanced CHISEL programming in flash memory devices with SiGE buried layer," NVM Workshop, Nov. 2004.
480. S.Banerjee, "Nanocrystal Floating Gate Memory," ***Invited*** *talk* at SRC Forum on Non-volatile Memory, Stanford Univ., Nov. 2004.
481. Shi ZH, Onsongo D, Banerjee SK, "Mobility and performance enhancement in compressively strained SiGe channel PMOSFETs," APPL SURF SCI 224 (1-4): 248-253 MAR 15 2004
482. Oh J, Banerjee SK, Campbell JC, "Metal-germanium-metal photodetectors on heteroepitaxial Ge-On-Si with amorphous Ge Schottky barrier enhancement layers," IEEE PHOTONIC TECH L 16 (2): 581-583 FEB 2004
483. Quinones E, Onsongo D, Shi Z, Banerjee SK, "Evaluation of heterojunction MOSFETs using UHVCVD deposited tensile-strained Si1-yCy alloy layers," SOLID STATE ELECTRON 48 (3): 379-387 MAR 2004.
484. Xia TS, Register LF, Banerjee SK, "Quantum transport in carbon nanotube transistors: Complex band structure effects," J APPL PHYS 95 (3): 1597-1599 FEB 1 2004
485. Kohli P, Jain A, Bu H, Chakravarthi S, Machala C, Dunham S and Banerjee SK, "Effect of nitride sidewall spacer process on B dose loss in ultrashallow junction formation, J. Vac. Sci. Technol. B 22(1), 471-476, Jan/Feb. 2004.
486. Xia TS, Register LF, Banerjee, SK, Calculations and applications of the complex band structure for carbon nanotube field-effect transistors, PHYSICAL REVIEW B 70 (4): Art. No. 045322 JUL 2004
487. Kirichenko TA, Hwang GS, Banerjee SK "Interaction of neutral vacancies and interstitials with the Si(001) surface," Phys. Rev. B, 70 (4): Art. No. 045321 JUL 2004.
488. Kirichenko TA, Hwang GS, Banerjee SK, "Mechanisms of monovacancy annihilation and type-A defect creation on Si(001)-2x1," Surf. Sci. 555 (1-3): 187-192 APR 20 2004.
489. Fan X , Wang X, Winstead B, Register L, Ravaioli U, Banerjee SK, "Monte Carlo simulation of strained Si MOSFET," IEEE Trans. Elec. Dev. 51 (6): 962-970 JUN 2004.
490. Kirichenko TA, Banerjee SK, Hwang GS , "Surface chemistry effects on vacancy and interstitial annihilation on Si(001)," PHYSICA STATUS SOLIDI B-BASIC RESEARCH 241 (10): 2303-2312 AUG 2004
491. Chen JJH, Bojarczuk NA, Shang HL, Copel M, Hannon JB, Karasinski J, Preisler E, Banerjee SK, Guha S, "Ultrathin Al_2O_3 and HfO_2 gate dielectrics on surface-nitrided Ge," IEEE TRANSACTIONS ON ELECTRON DEVICES 51 (9): 1441-1447 SEP 2004
492. Chen X, Joshi S, Chen J, Ngai T, Banerjee SK , "MOS capacitors on epitaxial Ge-$Si_{1-x}Ge_x$ with high-kappa dielectrics using RPCVD,"IEEE TRANSACTIONS ON ELECTRON DEVICES 51 (9): 1532-1534 SEP 2004
493. Harrison SA, Yu D, Edgar TF, Hwang GS, Kirichenko TA, Banerjee SK, "Origin of vacancy and interstitial stabilization at the amorphous-crystalline Si interface," JOURNAL OF APPLIED PHYSICS 96 (6): 3334-3338 SEP 15 2004
494. Shi ZH, Onsongo D, Rai R, Samavedam SB, Banerjee SK, "Hole mobility enhancement and Si cap optimization in nanoscale strained Si1-xGexPMOSFETs," SOLID-STATE ELECTRONICS 48 (12): 2299-2306 DEC 2004
495. Lin L, Kirichenko T, Banerjee SK, Hwang GS, Boron diffusion in strained Si: A first-principles study," JOURNAL OF APPLIED PHYSICS 96 (10): 5543-5547 NOV 15 2004
496. Li H-J, Zeitzoff P, Larson L and Banerjee S, "B diffusion in Si with pre-amorphization of different species," J. Vac. Sci. and Tech. B 22(5), 2380-2383, Sept. 2004.
497. S.Jayanarayan, W.Bai, D.Kwong and S.Banerjee, "Si and SiGe vertical MOSFETs with CVD HFO_2 Gate Dielectric," TMS Letters, 2004.
498. Onsongo D, Kelly DQ, Dey S, Wise RL, Cleavelin CR, Banerjee SK, "Improved hot-electron reliability in strained-Si nMOS," IEEE TRANSACTIONS ON ELECTRON DEVICES 51 (12): 2193-2199 DEC 2004

499. Kohli P, Chakravarthi S, Jain A, Bu H, Mehrotra M, Dunham ST, Banerjee SK, "Fundamental characterization of the effect of nitride sidewall spacer process on boron dose loss in ultra-shallow junction formation," MATERIALS SCIENCE AND ENGINEERING B-SOLID STATE MATERIALS FOR ADVANCED TECHNOLOGY 114: 390-396 DEC 15 2004
500. Gate Oxide Reliability Studies for Strained Si on Relaxed SiGe MOS Devices: Sachin Joshi, Doreen Ahmad, Marylene Palard, David Q.Kelly, David Onsongo, Sagnik Dey, L. Fei, T. Torack, Mike Seacrist, Bruce Kellerman, Sanjay K. Banerjee, EMC, Santa Barbara, 2005.
501. $Ge_{1-y}C_y$ MOS Capacitors with HfO_2 Gate Dielectric and TaN Gate:David Quest Kelly; Joseph Patrick Donnelly; Sagnik Dey; Sachin Vineet Joshi; Sanjay K. Banerjee; EMC, Santa Barbara, 2005.
502. Theoretical Study of Boron Diffusion in Strained Si: Li Lin; Taras Kirichenko; Bhagawan Sahu; Joo Hwan Yoo; Sanjay Banerjee; EMC, Santa Barbara, 2005.
503. S.Guha, J.Chen, S.Banerjee, et. al., "Ge and high-k oxides for CMOS-materials challenges," MRS, 2005, **Invited** paper.
504. Carrier Confinement in Almost Pure Ge Channels Grown on Si Substrates by Rapidly Graded Si1-xGex Growth: Sachin Joshi; Sagnik Dey; Kevin Jones; Michelle Chaumont; Alan Campion; David Q. Kelly; Joseph Donnelly; Sanjay K. Banerjee; EMC, Santa Barbara, 2005.
505. Rownak Jyoti Zaman, Weize Xiong, Andrea Franke, Rudy Quintilla, Nirmal Chaudhury, Thomas Schultz, Rinn Cleavelin, Rick Wise, Mike Pas, Shaofeng Yu, Klaus Schruefer and Sanjay K. Banerjee; "A Detailed Study of Hydrogen Annealing Process Effects on Silicon (011) Nano Structures., Spring MRS 2005.
506. S.Banerjee, "Microelectronics: The End the Beginning or Beginning of the End," **Invited** talk to Nanosummit, Houston, 2005
507. Electrical Transport Modeling of CNTFETs, T.Xia, L.Register and S.Banerjee, EMC 2005
508. Tunnel Oxide Thickness Dependence of Activation Energy for SiGe Quantum Dot Flash Memory, Y. Liu, S. Tang, D. Yu, G. Hwang, and S. Banerjee, DRC, Santa Barbara, 2005.
509. Monte Carlo Study of Germanium N- and P- MOSFETs, B. Ghosh, X.-F. Fan, L. F. Register, and S. K. Banerjee, DRC, Santa Barbara, 2005.
510. Tongsheng Xia, Leonard F. Register, and Sanjay K. Banerjee, "Transmission of the band gap states in Schottky barrier carbon nanotube transistors", 2nd conference of NDSI (nanoscale devices & system integration), (April, 2005).
511. S.Ganguly, L.Register, S.Banerjee and A.MacDonald, "Bias-controlled magnetization switch in a magnetic semiconductor RTD," 2nd conference of NDSI (nanoscale devices & system integration), 2005. (April, 2005)
512. S.Stanley, S.Joshi, S.Banerjee and J.Ekerdt, "Directed Self-assembly of Si and Ge Nanocrystals on HfO_2 through Kinetically Driven Patterning," AiChE Annual Meeting-Engineering Sciences and Fundamentals, 2005.
513. S.Banerjee, J.Donnelly, J.Chen, S.Joshi, D.Kelly, D.Ahmad, SDey, S.Guha, **Invited** Talk, and ECS Proc. Paper, "Ge-on-Si MOSFETs with HfO2 gate dielectric," ECS, Quebec, May 2005
514. S.Banerjee, S.Joshi, D.Ahmad, M.Palard, D.Kelly, D.Onsongo, S.Dey, L.Fei, T.Toprack, M.Seacrist, B.Kellerman, and S.Banerjee, **Invited** Talk, and ECS Proc. paper "Oxide and hot carrier reliability studies for strained Si on relaxed SiGe MOS devices," ECS, Quebec, May 2005.
515. Tongsheng Xia, Leonard F. Register, and Sanjay K. Banerjee, "Simulation study of the carbon nanotube field effect transistors beyond the complex band structure region", Solid-State Electronics, Vol. 49, p860, 2005. (May, 2005)
516. Kohli P, Jain A, Chakravarthi S, Bu H, Dunham ST, Banerjee S, "Interactions of B dopant atoms and Si interstitials with SiO_2 films during annealing for ultra-shallow junction formation,"JOURNAL OF APPLIED PHYSICS 97 (7): Art. No. 073520 APR 1 2005
517. Ghosh B, Wang X, Fan XF, Register LF, Banerjee SK, "Monte Carlo study of germanium n- and pMOSFETs," IEEE TRANSACTIONS ON ELECTRON DEVICES 52 (4): 547-553 APR 2005

518. Xia TS, Register LF, Banerjee SK, "Simulation study of the carbon nanotube field effect transistors beyond the complex band structure effect," SOLID-STATE ELECTRONICS 49 (5): 860-864 MAY 2005
519. Wiemeri JC, Spencer TA, Banerjee SK, "Magnetic-field effects on Coulomb blockade conductance oscillations in a normal metal-insulator-normal metal double-barrier tunnel junction formed using atomic force microscope nanolithography," JOURNAL OF APPLIED PHYSICS 97 (8): Art. No. 084319 APR 15 2005
520. Li F, Mudanai S, Register LF, Banerjee SK, A physically based compact gate C-V model for ultrathin (EOT similar to 1 nm and below) gate dielectric MOS devices, IEEE TRANSACTIONS ON ELECTRON DEVICES 52 (6): 1148-1158 JUN 2005
521. Kirichenko TA, Yu D, Banerjee SK, Hwang GS, Silicon interstitials at Si/SiO2 interfaces: Density functional calculations, PHYSICAL REVIEW B 72 (3): Art. No. 035345 JUL 2005
522. Dey S, Joshi S, Banerjee SK, Current-crowding effect in multiple cantilever channel MOSFET, SOLID-STATE ELECTRONICS 49 (7): 1248-1250 JUL 2005
523. Kelly DQ, Dey S, Onsongo D, Banerjee SK,Considerations for evaluating hot-electron reliability of strained Si n-channel MOSFETs, MICROELECTRONICS RELIABILITY 45 (7-8): 1033-1040 JUL-AUG 2005, **INVITED** PAPER
524. Ganguly S, Register LF, Banerjee S, MacDonald AH, Bias-voltage-controlled magnetization switch in ferromagnetic semiconductor resonant tunneling diodes, PHYSICAL REVIEW B 71 (24): 245306 JUN 2005
525. Lin L, Kirichenko T, Sahu BR, Hwang GS, Banerjee SK, Theoretical study of B diffusion with charged defects in strained Si, PHYSICAL REVIEW B 72 (20): Art. No. 205206 NOV 2005
526. Yu D, Hwang GS, Kirichenko TA, Banerjee SK, Structure and diffusion of excess Si atoms in SiO2, PHYSICAL REVIEW B 72 (20): Art. No. 205204 NOV 2005
527. David Q. Kelly , Joseph P. Donnelly , Sachin V. Joshi , Sagnik Dey ,Domingo I. García Gutiérrez, Miguel José Yacamán , and Sanjay K. Banerjee, Drive Current Enhancement in High-κ/Metal Gate Germanium-Carbide pMOSFETs Fabricated Directly on Si Substrates, IEDM 2005.
528. David Kelly and Sanjay K. Banerjee, $Ge_{1-y}C_y$ MOS Devices with High-κ Gate Dielectrics and Metal Gates, SRC TECHCON Portland, Oct. 2005.
529. M.Oye, J.Hurst, .C.Shih, S.Banerjee, J.Campbell, A.Holmes and T.Mattord, AFM study of sapphire surfaces annealed with H2O flux from a baffled MBE effusion cell loaded with Al(OH)3, NAMBE 2005.
530. S. Joshi, S. Dey, D. Garcia-Gutierrez, M.Chaumont, M. Yacaman, A.Campion, D.Q. Kelly, J. Donnelly and S.K. Banerjee, Ge channel MOSFETs fabricated using thin Ge on strained SiGe epitaxial layers using bulk Si substrates, HfO_2 gate dielectric and TaN metal gate electrode, SRC TECHCON Portland, Oct. 2005.
531. S.Banerjee, High mobility Strained Ge MOSFETs with high-k gate dielectrics, ISDRS, Washington D.C., Dec. 2005. **Invited** talk (with J.Donnely, D.Kelly, S.Joshi, S.Dey, D.Shahrjerdi, I.Wiedeman and D.Ahmad)
532. Wanqiang Chen, , Leonard F. Register, and Sanjay K. Banerjee,"Schroedinger Equation Monte Carlo"-based simulation of nanoscale double gate MOSFETs, SRC TECHCON Portland, Oct. 2005.
533. S.Tang, C.Mao, … S.Banerjee, Nanocrystal flash memory made with protein mediated assembly, Washington D.C. IEDM 2005.
534. Bahniman Ghosh, Xiao-Feng Fan, Leonard F. Register and Sanjay K. Banerjee, Monte Carlo simulation study of III-V semiconductor PMOSFETs, TECHCON Portland, Oct. 2005.
535. Stanley SK, Joshi SV, Banerjee SK, Ekerdt JG , Ge interactions on HfO2 surfaces and kinetically driven patterning of Ge nanocrystals on HfO2, JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A 24 (1): 78-83 JAN-FEB 2006

536. Ghosh B, Fan XF, Register LF, Banerjee SK, Monte Carlo study of strained germanium nanoscale bulk pMOSFETs, IEEE TRANSACTIONS ON ELECTRON DEVICES 53 (3): 533-537 MAR 2006
537. Ghosh B, Chen JH, Fan XF, Register LF, Banerjee SK, Monte Carlo study of remote Coulomb and remote surface roughness scattering in nanoscale GePMOSFETs with ultrathin high-kappa dielectrics, SOLID-STATE ELECTRONICS 50 (2): 248-253 FEB 2006
538. Ganguly S, Register LF, MacDonald AH, Banerjee SK, Two-level voltage-controlled magnetization switch using a ferromagnetic semiconductor resonant-tunneling diode, IEEE TRANSACTIONS ON NANOTECHNOLOGY 5 (1): 30-36 JAN 2006
539. Ganguly S, MacDonald AH, Register LF, Banerjee S, Intrinsic Curie temperature bistability in ferromagnetic semiconductor resonant tunneling diodes, PHYSICAL REVIEW B 73 (3): Art. No. 033310 JAN 2006
540. Xia TS, Register LF, Banerjee SK, Transmission through the band-gap states in Schottky-Barrier carbon nanotube transistors, IEEE TRANSACTIONS ON NANOTECHNOLOGY 5 (2): 80-83 MAR 2006
541. Stanley SK, Joshi SV, Banerjee SK, Ekerdt JG, Surface reactions and kinetically-driven patterning scheme for selective deposition of Si and Ge nanoparticle arrays on HfO2, SURFACE SCIENCE 600 (5): L54-L57 MAR 1 2006
542. Kelly DQ, Donnelly JP, Dey S, Joshi SV, Gutierrez DIG, Yacaman MJ, Banerjee SK, BC high-kappa/metal gate Ge/C alloy pMOSFETs fabricated directly on Si (100) substrates, IEEE ELECTRON DEVICE LETTERS 27 (4): 265-268 APR 2006
543. Schricker AD, Joshi SV, Hanrath T, Banerjee SK, Korgel BA,Temperature dependence of the field effect mobility of solution-grown germanium nanowires, JOURNAL OF PHYSICAL CHEMISTRY B 110 (13): 6816-6823 APR 6 2006
544. Kelly DQ, Wiedmann I, Donnelly JP, Joshi SV, Dey S, Banerjee SK, Garcia-Gutierrez DI, Jose-Yacaman M, Thin germanium-carbon alloy layers grown directly on silicon for metal-oxide-semiconductor device applications, APPLIED PHYSICS LETTERS 88 (15): Art. No. 152101 APR 10 2006
545. Jayanarayanan SK, Dey S, Donnelly JP, Banerjee SK, A novel 50 nm vertical MOSFET with a dielectric pocket, SOLID-STATE ELECTRONICS 50 (5): 897-900 MAY 2006
546. Oye MM, Hurst JB, Shahrjerdi D, Kulkarni NN, Muller A, Beck AL, Sidhu R, Shih CK, Banerjee SK, Campbell JC, Holmes AL, Mattord TJ, Reifsnider JM, Atomic force microscopy study of sapphire surfaces annealed with a H2O flux from a baffled molecular-beam epitaxy effusion cell loaded with Al(OH)(3), JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B 24 (3): 1572-1576 MAY-JUN 2006
547. Liu YR, Tang S, Banerjee SK, Tunnel oxide thickness dependence of activation energy for retention time in SiGe quantum dot flash memory, APPLIED PHYSICS LETTERS 88 (21): Art. No. 213504 MAY 22 2006
548. Li F, Mudanai SP, Fan YY, Register LF, Banerjee SK, Physically based quantum-mechanical compact model of MOS devices substrate-injected tunneling current through ultrathin (EOT similar to 1 nm) SiO2 and high-k gate stacks, IEEE TRANSACTIONS ON ELECTRON DEVICES 53 (5): 1096-1106 MAY 2006
549. Shahrjerdi D, Oye MM, Holmes AL, Banerjee SK, Unpinned metal gate/high-kappa GaAs capacitors: Fabrication and characterization, APPLIED PHYSICS LETTERS 89 (4): Art. No. 043501 JUL 24 2006
550. Li F, Tseng HH, Register LF, Tobin PJ, Banerjee SK, Asymmetry in gate capacitance-voltage (C-V) behavior of ultrathin metal gate MOSFETs with HfO2 gate dielectrics, IEEE TRANSACTIONS ON ELECTRON DEVICES 53 (8): 1943-1946 AUG 2006
551. Dey S, Joshi S, Garcia-Gutierrez D, Chaumont M, Campion A, Jose-Yacaman M, Banerjee SK, Pure germanium epitaxial growth on thin strained silicon-germanium graded layers on bulk

silicon substrate for high-mobility channel metal-oxide-semiconductor field-effect transistors, JOURNAL OF ELECTRONIC MATERIALS 35 (8): 1607-1612 AUG 2006

552. Y.Kim, T.Kirichenko. G.Hwang and S.Banerjee, "Ab initio study of B diffusion retardation in SiGe," MRS San Francisco, Spring, 2006.

553. Scott K. Stanley, Yueran Liu, Sanjay K. Banerjee, John G. Ekerdt, Core-shell Ge nanoparticles for enhanced interface stability, MRS Spring 2006.

554. Coffee SS, Stanley SK, Winkenwerder WA, Shahrjerdi D, Banerjee SK, Ekerdt JG, Using self-assembly and selective chemical vapor deposition for precise positioning of individual germanium nanoparticles on hafnia, MRS Spring 2006.

555. B.Sahu, L.Kleinman and S.Banerjee, Density functional investigation of magnetism in Mn doped Si, MRS, Fall, 2005.

556. Z.Huang, N.Kong, J.Oh, S.Banerjee and J.Campbell, Effectiveness of SiGe buffer layers in reducing dark current in Ge-on-Si photodetectors, Univ. Park, EMC, 2006.

557. M.Oye, D.Shahrejerdi, .. J.Harris, A.Holmes and S.Banerjee, GaAs growth on Si substrates using thin (~80 nm) SiGe step-graded buffer layer for high-k III-V MOSFET applications, Univ. Park, EMC 2006.

558. D.Kelly, ….. S.Banerjee, "Thin Germanium-Carbon Layers on Silicon for Metal-Oxide-Semiconductor Devices" 3rd International Silicon Germanium Technology and Device Meeting, Princeton, NJ, May 2006.

559. D.Basu, M.Gilbert, and S.Banerjee, "Effect of Elastic Processes and Ballistic Recovery in Si Nanowire transistors," Int. Workshop on Computational Electronics, Vienna, May 2006

560. S.Banerjee, "Strained channel Si-Ge-C MOSFETs," SEMICON, Seoul Korea, Feb. 2006. **Invited** talk

561. S.Banerjee, "An overview of alternative charge and magnetic moment based devices," AVS ICMI conference, Austin, March 2006, **Invited** talk.

562. M. Gilbert and S.Banerjee, Ballistic recovery in III-V nanowire transitors," AVS ICMI conference, Austin, March 2006.

563. D.Basu, M.Gilbert and S.Banerjee, "Surface roughness exacerbated performance degradation in Si nanowire transistors," AVS- ICMI conference, Austin, March 2006.

564. D.Kelly, …M.Yacaman and S.Banerjee, "Thin Ge-C alloy layers on Si for improved hole mobility in buried channel pMOSFETs," AVS ICMI conference, Austin, March 2006.

565. D. Shahrjerdi, J. Sarkar, X. Gao, D. Q. Kelly, S. K. Banerjee, Fabrication of Self-Assembled Ni Nanocrystal Flash Memories Using a Polymeric Template, Univ. Park DRC 2006.

566. J.Sarkar, S.Dey, Y.Liu, D.Shahrjerdi, D.Kelly and S.Banerjee, Vertical (3_D) Flash Memory with SiGe nanocrystal Floating Gate, DRC 2006

567. Yueran Liu, Shan Tang, Chuanbin Mao and Sanjay Banerjee, SiC Nanocrystal Flash Memory Fabricated with Protein-mediated Assembly, DRC 2006.

568. D. Shahrjerdi, J. Sarkar, S. K. Banerjee, Fabrication of Dense Ordered Arrays of Metal Dots for Flash Memory Application, MRS 2006.

569. Bahniman Ghosh, Xiao-Feng Fan, Leonard F. Register and Sanjay K. Banerjee, Monte Carlo simulation study of III-V semiconductor PMOSFETs, SRC Symp. 2006

570. Bahniman Ghosh, Xiao-Feng Fan, Leonard F. Register and Sanjay K. Banerjee, Monte Carlo study of remote Coulomb and remote surface roughness scattering in nanoscale Ge PMOSFETs with ultrathin high-k dielectrics, SISPAD 2006

571. Xiao-Feng Fan, Bahniman Ghosh, Leonard F. Register and Sanjay K. Banerjee, Scalability of Biaxially Strained Si NMOS on Technology Roadmap, SISPAD 2006

572. T.Kirichenko, D.Yu, S.Banerjee and G.Hwang, Vacancy at Si-SiO2 Interface: Ab-Initio Study, SISPAD 2006

573. X.Fan, F.Register and S.Banerjee, Hole mobility enhancement with <110> uniaxial stress in Si up to 2GPa, SRC Symp. 2006.

574. Y.Kim, S.Harrison, S.Lee, S.Banerjee and G.Hwang, Ab-initio calculation of As-vacancy deactivation and interstitial-meddiated As diffusion in strained Si, SISPAD 2006

575. David Kelly and Sanjay K. Banerjee, Thin $Ge_{1-y}C_y$ layers grown directly on Si for MOS Device Applications, SRC Symp. 2006. (**BEST PAPER AWARD.)**

576. S. Joshi, S.Dey, .. and S.K. Banerjee, Strained Si and Ge MOSFETs fabricated using multiple thin SiGe dislocation blocking layers, SRC Symp. 2006.

577. S.Banerjee, Ge-C MOSFETs, ECS Meeting, Cancun Mexico, Oct. 2006. **Invited** talk (with D.Kelly, D.Garcia and M.Yacaman)

578. Z.Huang, Kong, J.Oh, S.K. Banerjee and J.Campbell, Interdigitated photodiode fabricated in high quality Ge with thin SiGE buffer layers, IEEE LEOS Summer, 2006.

579. J. Na, C. Krug, S. Joshi, D. Heh, P. Sivasubramani, P. D. Kirsch, R. Choi, B. H. Lee, R. Jammy, S. K. Banerjee, and J. C. Lee,Improved passivation and characterization of the Ge/HfSiO interface enabling surface channel Ge pMOSFETs, SISC, 2006.

580. Sachin Joshi, Sagnik Dey, Michelle Chaumont, Alan Campion and Sanjay K. Banerjee, Ultra-thin Si1-xGex dislocation blocking layers for Ge /strained Si CMOS devices¡±, International Symposium on Advanced Gate Stack Technology, September 2006

581. Swaroop Ganguly, L.F. Register, A.H. MacDonald, and S.K. Banerjee, "Scattering Dependence of Magnetization Switching in Ferromagnetic Resonant Tunneling Diodes", *European Materials Research Society Fall Meeting*, Warsaw, September 2006.

582. Garcia-Gutierrez DI, Jose-Yacaman M, Lu SF, Kelly DQ, Banerjee SK , Carbon segregation as a strain relaxation mechanism in thin germanium-carbon layers deposited directly on silicon, JOURNAL OF APPLIED PHYSICS 100 (4): Art. No. 044323 AUG 15 2006

583. Li F, Register LF, Hasan MM, Banerjee SK A program for device model parameter extraction from gate capacitance and current of ultrathin SiO2 and high-k gate stacks, IEEE TRANSACTIONS ON ELECTRON DEVICES 53 (9): 2118-2127 SEP 2006

584. Z.Huang, Kong, Duan, S.K. Banerjee and J.Campbell, 21GHz Bandwidth Ge on Si photodiode using thin SiGe buffers, Sel. Topics J. Quantm Elec. 12 (6): 1450-1454 Part 2, NOV-DEC 2006

585. Ganguly S, MacDonald AH, Register LF, Banerjee SK, Scattering dependence of bias-controlled magnetization switching in ferromagnetic resonant tunneling diodes PHYSICAL REVIEW B 74 (15): OCT 2006

586. Basu D, Gilbert MJ, Banerjee SK, Surface roughness exacerbated performance degradation in silicon nanowire transistors, JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B 24 (5): 2424-2428 SEP-OCT 2006

587. Liu YR, Dey S, Tang S, Kelly DQ, Sarkar J, Banerjee SK, Improved performance of SiGe nanocrystal memory with VARIOT tunnel barrier, IEEE TRANSACTIONS ON ELECTRON DEVICES 53 (10): 2598-2602 OCT 2006

588. Schrodinger Equation Monte Carlo-3D for Simulation of Nanoscale MOSFETs, Liu KM, Chen WQ, Register LF, Banerjee SK, 7th IEEE Conference on Nanotechnology, AUG 02-05, 2007 Hong Kong, PEOPLES R CHINA, **2007 7TH IEEE CONFERENCE ON NANOTECHNOLOGY, VOL 1-3** Pages: **1128-1133** Published: **2007**

589. High performance pMOSFETs using Si/Si1-xGex/Si quantum wells with high-k/metal gate stacks and additive uniaxial strain for 22 nm technology node, Suthram S, Majhi P, Sun G, Kalra P, Harris HR, Choi KJ, Heh D, Oh J, Kelly D, , Cho BJ, Hussain MM, Smith C, Banerjee S, Tsai W, Thompson SE, Tseng HH, Jammy R, IEEE International Electron Devices Meeting, DEC 10-12, 2007 Washington, DC

590. Protein-mediated assembly of nanocrystal floating gate in a vertical flash cell Sarkar J, Tang S, Garcia D, Banerjee SK, 22nd IEEE Non-Volatile Semiconductor Memory Workshop, Monterey, CA Pages: 34-35 Aug. 2007

591. Joshi S, Sahu B, Banerjee SK, Ciucivara A, Kleinman L, Wise R, Cleavelin R, Pinto A, Seacrist M, Ries M, Theoretical and experimental investigation of valence band offsets for direct silicon bond hybrid orientation technology, APPLIED PHYSICS LETTERS 90 (4): Art. No. 043503 JAN 22 2007
592. Fan XF, Register LF, Winstead B, Foisy MC, Chen WQ, Zheng X, Ghosh B, Banerjee SK, Hole mobility and thermal velocity enhancement for uniaxial stress in Si up to 4 GPa, IEEE TRANSACTIONS ON ELECTRON DEVICES 54 (2): 291-296 FEB 2007
593. Kelly DQ, Wiedmann I, Garcia-Gutierrez DI, Jose-Yacaman M, Banerjee SK, Thin germanium-carbon layers deposited directly on silicon for metal-oxide-semiconductor devices, SEMICONDUCTOR SCIENCE AND TECHNOLOGY 22 (1): S204-S207 Sp. Iss. SI, JAN 2007
594. Kong N, Banerjee SK, Kirichenko TA, Anderson SGH, Foisy MC, Enhanced and retarded diffusion of arsenic in silicon by point defect engineering, APPLIED PHYSICS LETTERS 90 (6): Art. No. 062107 FEB 5 2007
595. Gilbert MJ, Banerjee SK, Ballistic recovery in III-V nanowire transistors, JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B 25 (1): 189-193 JAN-FEB 2007
596. Tang S, Mao CB, Liu YR, Kelly DQ, Banerjee SK, Protein-mediated nanocrystal assembly for flash memory fabrication, IEEE TRANSACTIONS ON ELECTRON DEVICES 54 (3): 433-438 MAR 2007
597. Gilbert M and Banerjee SK, Ballistic to Diffusive Crossover in III-V Nanowire Transistors, IEEE TRANSACTIONS ON ELECTRON DEVICES 54 (4): 645-653, APRIL 2007
598. Hongki Min, B.R. Sahu, Sanjay K. Banerjee, A.H. MacDonald, Ab Initio Theory of Gate Induced Gaps in Graphene Bilayers, PHYSICAL REVIEW B 75 (15): Art. No. 155115 APR 2007
599. Adrian Ciucivara, B. R. Sahu, Sachin Joshi, Sanjay K. Banerjee, and Leonard Kleinman, Density functional study of Si(001)/Si(110) and Si(100)/Si(110) interfaces, PHYSICAL REVIEW B 75 (11): Art. No. 113309 MAR 2007
600. Huang ZH, Oh J, Banerjee SK, Campbell JC, Effectiveness of SiGe buffer layers in reducing dark currents of Ge-on-Si photodetectors, IEEE JOURNAL OF QUANTUM ELECTRONICS 43 (3-4): 238-242 MAR-APR 2007
601. Sarkar J, Dey S, Shahrjerdi D, Banerjee SK, Vertical Flash memory cell with nanocrystal floating gate for ultradense integration and good retention IEEE ELECTRON DEVICE LETTERS 28 (5): 449-451 MAY 2007
602. Joshi S, Krug C, Heh D, Na HJ. Harris HR, Oh JW, Kirsch PD, Majhi P, Lee BH, Tseng HH, Jammy R, Lee JC, Banerjee SK, Improved Ge surface passivation with ultrathin SiOx enabling high-mobility surface channel pMOSFETs featuring a HfSiO/WN gate stack, IEEE ELECTRON DEVICE LETTERS 28 (4): 308-311 APR 2007
603. Joshi S, Dey S, Chaumont M, Campion A, Banerjee SK,Ultra-thin Si1-xGex dislocation blocking layers for Ge/strained SiCMOS devices, JOURNAL OF ELECTRONIC MATERIALS 36 (6): 641-647 JUN 2007
604. Oye MM, Shahrjerdi D, Ok I, Hurst JB, Lewis SD, Dey S, Kelly DQ, Joshi S, Mattord TJ, Yu X, Wistey MA, Harris JS, Holmes AL, Lee JC, Banerjee SK, Molecular-beam epitaxy growth of device-compatible GaAs on silicon substrates with thin (similar to 80 nm) Si1-xGex step-graded buffer layers for high-kappa III-V metal-oxide-semiconductor field effect transistor applications, JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B 25 (3): 1098-1102 MAY-JUN 2007
605. Sarkar, Joy, Tang, Shan, Shahrjerdi, Davood, Banerjee, Sanjay K., Vertical flash memory with protein-mediated assembly of nanocrystal floating gate, APPLIED PHYSICS LETTERS 90 (10): Art. No. 103512 MAR 5 2007
606. S. Dey, Sachin Joshi, P.Majhi and S.K. Banerjee, Gate-all-around (GAA) fully depleted (FD) cantilever channel MOSFET with high-k and metal Gate, Materials Research Society Spring Meeting, 2007

607. S.-H. Lee, S. Dey, Sachin Joshi , P. Majhi and S. K. Banerjee, SiGe cantilever channel gate-all-around (GAA) fully depleted (FD) PMOSFET with high-k and metal gate, Device Research Conference, 2007
608. Doreen Ahmad, Sagnik Dey, Marylene Palard, Fahmida Ferdousi, Mustafa Jamil, Emanuel Tutuc and Sanjay K. Banerjee, Nano-Imprint Lithography to fabricate Nanowire Field Effect Transistor (NWFET), EMC 2007.
609. M. Liu, W. Chen, L. F. Register and S. Banerjee, "Schrödinger Equation Monte Carlo-3D for Simulation of Nanoscale MOSFETs," IEEE Review of Advances on Micro, Nano, and Molecular Systems, IEEE-NANO 2007, Hong Kong Aug. 2-5, 2007.
610. Yonghyun Kim, Taras A. Kirichenko, Ning Kong, Larry Larson, and Sanjay K. Banerjee, Stability and Diffusion of Small Arsenic Interstitial Complexes in Crystalline Si: First-principle Studies, Int. Conf. Defects in Semicond. 2007.
611. Ning Kong, Taras A. Kirichenko, Gyeong S. Hwang, Mark C. Foisy, Steven G. H. Anderson, Sanjay K. Banerjee,"An experimental and simulation study of arsenic diffusion behavior in point defect engineered silicon" 2007 MRS Proceeding 0994-F10-02.
612. Sanjay Banerjee, Strain and Bandgap Engineered High Channel Mobility MOSFETs, Keynote talk, ASME, Austin, June 2007.
613. *Sanjay Banerjee, Shan Tang, Joy Sarkar, Davood Shahrjerdi, Chang Lee, Flash Memory with Nanoparticle Floating Gate, Toronto, Particles Aug. 2007, **Invited**
614. Sanjay Banerjee, Materials, devices, and heterogeneous integration for new functions, GOMAC, Orlando, FL, Jan. 2007, **Invited**.
615. S.Banerjee, Retrospect and Prospects of Nanocrystal Floating Gate Memories, MARCO MSD e-workshop, July 2007.
616. Shan Tang, C. H. Lee, X. Gao and Sanjay Banerjee, "Flash Memory Fabricated with Protein-Mediated PbSe Nanocrystal Assembly as Floating Gate," IEEE Device Research Conference (DRC) 2007, p93-94.
617. Sarkar, Shan Tang, D. Garcia and Sanjay Banerjee, "Protein-mediated assembly of nanocrystal floating gate in a vertical flash cell," 22nd IEEE Non-Volatile Semiconductor Memory Workshop 2007.
618. S.Banerjee, Future of Microelectronics: The beginning of the end or the end of the beginning? Plenary talk, April 2007, TAMEST Conference, Austin.
619. S.Banerjee, New Materials and Structures for Transistors based on Spin, Charge and Wavefunction Phase Control, NIST, Gaithersburg, MD, March, 2007, **Invited**.
620. S.Banerjee, Computational Aspects of Nanowire FETs, NCN NRI Meeting, Indianolpolis, Feb. 2007, **Invited**.
621. S.Banerjee, Beyond CMOS, Brussels, April 2007, **Invited**.
622. S.Banerjee (with N.Peppas and K.Roy), How Microelectronics will Impact and Improve Drug Discovery and Delivery, Plenary Talk, Pharma Conf. Austin, Jan. 2007.
623. Sachin Joshi, C. Krug, D. Heh, H. J. Na, R. Harris, J. Oh, P. D. Kirsch, P. Majhi, B. H. Lee, R. Jammy and S. K. Banerjee, Improved Ge Interface Passivation with Ultrathin SiOx Enabling High Mobility Surface Channel PMOSFETs Featuring a HfSiO / WN gate stack, 34th Conference on the Physics and Chemistry of Semiconductor Interfaces, Salt Lake City, Jan 2007, (Young Scientist Award at PCSI 2007.)
624. Sachin Joshi, Adrian Ciucivara, Bhagwan Sahu, Leonard Kleinman, Rick Wise, Mike Seacrist, Rinn Cleavelin, Angelo Pinto, J-T. Huang and Sanjay Banerjee, "Theoretical and experimental investigations of valence band offsets in a Direct Silicon Bond hybrid orientation technology", 34th Conference on the Physics and Chemistry of Semiconductor Interfaces, Jan 2007 (Young Scientist Award at PCSI 2007).
625. Angelo Pinto, Sachin Joshi, Y.-T. Huang, Rick Wise, Rinn Cleavelin, Mike Seacrist, Mike Ries, Manfred Ramin, Melissa Freeman, Billy Nguyen, Kenneth Matthews, Bruce Wilks, Charles

Stager, Mike Ma, C.-T. Lin and Sanjay K. Banerjee, Bonded layer thickness optimization for a DSB-HOT Technology, Materials Research Society meeting, Spring 2007.

626. Sachin Joshi, S Dey, C Krug, S Lee, P Kirsch, W Wang, A Campion, D Heh, H Harris, P Majhi, B H Lee, H H Tseng, R Jammy, J Lee, S Banerjee, 3X hole mobility enhancement in epitaxially grown SiGe PMOSFETs on (110) Si substrates for hybrid orientation technology, Device Research Conference, 2007.

627. M.Oye,…. S.Banerjee, et. al. Effects of different plasma species on optical properties of dilute nitrides grown by plasma MBE, EMC 2007

628. D.Sharjedi, T.Aykol, D. Shahrjerdi, T. Akyol, M. Oye, G. Balakrishnan, A. Khoshakhlagh, E. Tutuc, D. Huffaker and S. K. Banerjee, "Atomic layer deposition of Al2O3 and HfO2 gate dielectrics on GaAs for MOSFET applications", presented at EMC 2007.

629. H.Min, B.Sahu, S.Banerjee, A.MacDonald, Bilayer Graphene, APS March meeting, 2007. (A28.00009)

630. B.Sahu and S.Banerjee, Computational study of local meta-magnetic states in Mn doped SI, APS March meeting, 2007. (L14.00001)

631. A.Ciucivara, B.Sahu, S.Banerjee and L.Kleinman, Expt. and theoretical study of Si (001)/(110) junctions, APS March meeting, 2007. (N39.00007)

632. *S.Banerjee, SWAN overview, Int. Assoc. Nano, San Francisco, Oct. 2006, **Invited**

633. Kelly DQ, Lee S, Kalra P, Harris R, Oh J, Kirsch P, Banerjee SK, Majhi P, Tseng H, Jammy R, Interrelationship between electrical and physical properties of subcritical Si-Ge layers grown directly on silicon for short channel high-performance pMOSFETs, MICROELECTRONIC ENGINEERING 84 (9-10): 2054-2057 SEP-OCT 2007

634. D. Shahrjerdi, E. Tutuc and S. K. Banerjee, "Impact of surface chemical treatment on capacitance-voltage characteristics of GaAs metal-oxide-semiconductor capacitors with Al_2O_3 gate dielectric", APPLIED PHYSICS LETTERS 91, 1 (2007)

635. Sanjay K. Banerjee, Emanuel Tutuc, Joseph Donnely and Davood Shahrjerdi, Enhanced Channel Mobility Materials for MOSFETs on Si Substrates, The Electro-Chemical Society (ECS) Transactions, October 2007. (**Invited**)

636. S. Suthram, P. Majhi, G. Sun, P. Kalra, R. Harris, K. J. Choi, D. Heh, J. Oh, D. Kelly, R. Choi, B.J. Cho, M. M. Hussain, C. Smith, S. Banerjee, W. Tsai, S. E. Thompson, H. H. Tseng, R. Jammy Demonstration of High Performance PMOSFETs Using $Si/S_{ix}G_{e1-x}/Si$ Quantum Wells with High-k/Metal Gate Stacks and Uniaxial Strain Additivity for 22 nm Technology and Beyond, IEDM 2007

637. L.F. Register, M.M. Hasan, F. Li, and S.K. Banerjee, "Efficient Gate Capacitance and Current Modeling of High-k Gate Stacks," The Electro-Chemical Society (ECS) Transactions, Physics and Technology of High-k Gate Dielectrics 5, Oct. 2007.(***Invited*** *talk by Banerjee*)

638. D. Basu, M. J. Gilbert, L. F. Register, and S. K. Banerjee, Effect of Elastic Processes in Silicon Nanowire Transistors, SRC TECHCON, Austin, Sept, 2007.

639. Sanjay Banerjee,"How might the nanoscale transistors of the future be made?" NanoTEX, Dallas, Oct. 2007, **Invited**. Also two panel discussion talks on memory and beyond CMOS.

640. Ning Kong, Taras A. Kirichenko, Gyeong S. Hwang, Mark C. Foisy, Steven G. H. Anderson, Sanjay K. Banerjee,"Arsenic diffusion in point defect engineered silicon" SRC TECHCON, Austin, 2007.

641. Shan Tang, C. H. Lee, X. Gao and Sanjay Banerjee, "Bio-Nano Fabrication of Flash Memories with PbSe Nanocrystal Floating Gates," SRC TECHCON. Austin 2007.

642. H.Chen, M.J. Gilbert, L.F. Register, and S.K. Banerjee, Rashba Effect in a Gate-controlled Aharonov-Bohm Device, SRC TECHCON, Austin, Oct. 2007

643. Y.Kim, Taras A. Kirichenko, Ning Kong, Larry Larson, S.Banerjee, Stability and Diffusion of Small Arsenic Interstitial Complexes in Crystalline Silicon: First-principle Studies, SRC TECHCON, Austin, Oct. 2007

644. Sanjay Banerjee, Shan Tang, C. B. Mao, J. Sarkar, H. Liu, D. Shahrjerdi, C. H. Lee and J. D. Trent, "Bio-Nano Approaches to Fabrication of Quantum Dot Floating Gate Flash Memories," International Conference on Solid State Devices and Materials (SSDM) 2007, **invited** paper; also S.Banerjee, Bio-nano Fabrication of Nanoparticle floating gate Memory, Panasonic Research Center, Sept. 2007, Nara, Japan, **Invited**.

645. Tackhwi Lee, Jack C. Lee and Sanjay K. Banerjee "Characterization of Dysprosium oxide (Dy2O3) incorporated HfO_2 gate oxide devices, " SISC 2007.

646. Hai Liu, Wyatt Winkenwerder, Yueran Liu, Scott K. Stanley, John G. Ekerdt, Sanjay K. Banerjee, "Core-shell Germanium-Silicon Nanoparticle Structure for High K Nonvolatile Memory Applications," International Semiconductor Device Research Symposium 2007.

647. D. Shahrjerdi*, N. Nuntawong, T. Akyol, G. Balakrishnan, A. Khoshakhlagh, S. Dey, S. R. Bank, E. Tutuc, D. Huffaker and S. K. Banerjee, "Fabrication of Unpinned Metal Gate/ High-k GaAs MOS capacitors on Ge/ Si/_1-x /Ge/_x // Si Substrates", /North American Conference on Molecular Beam Epitaxy/, 2007

648. Improved Electrical Characteristics of Ge-on-Si Field-Effect Transistors With Controlled Ge Epitaxial Layer Thickness on Si Substrates, Jungwoo Oh; Majhi, P.; Lee, H.; Oooksang Yoo; Banerjee, S.; Chang Yong Kang; Ji-Woon Yang; Harris, R.; Hsing-Huang Tseng; Jammy,R.; Electron Device Letters, IEEE Volume 28 (11), Nov. 2007 Pp:1044 - 1046

649. Junction Passivation for Direct Silicon Bond Hybrid Orientation Technology, Joshi, S.; Pinto, A.; Huang, Y.-T.; Wise, R.; Cleavelin, R.; Seacrist, M.; Ries, M.; Ramin, M.; Freeman, M.; Nguyen, B.; Matthews, K.; Wilks, B.; Denning, L.; Johnson, C.; Bennet, J.; Ma, M.; Lin, C.-T.; Banerjee, S.K., Electron Devices, IEEE Transactions on Volume 54, Issue 8, Aug. 2007 Page(s):2045 – 2050.

650. Fabrication of Ni nanocrystal flash memories using a polymeric self-assembly approach, Shahrjerdi D, Garcia-Gutieffez DI, Banerjee SK, IEEE ELECTRON DEVICE LETTERS Volume: 28 Issue: 9 Pages: 793-796 SEP 2007

651. Trigate FET Device Characteristics Improvement Using a Hydrogen Anneal Process With a Novel Hard Mask Approach, Zaman, R.J.; Mathews, K.; Xiong Weize; Banerjee, S.K.;Electron Device Letters, IEEE, Volume 28, Issue 10, Oct. 2007 Page(s):916 – 918

652. GaAs metal-oxide-semiconductor capacitors using atomic layer deposition of HfO2 gate dielectric: Fabrication and characterization, Shahrjerdi D, Garcia-Gutierrez DI, Akyol T,, S. R. Bank, E. Tutuc, J. C. Lee, Banerjee S., APPLIED PHYSICS LETTERS Volume: **19** Article Number: 193503, NOV 5 2007

653. Selective silicon nanoparticle growth on high-density arrays of silicon nitride Author(s): Coffee SS, Shahrjerdi D, Banerjee SK, Ekerdt J., JOURNAL OF CRYSTAL GROWTH Volume: 308 Issue: 2 Pages: 269-277 Published: OCT 15 2007

654. First-principles studies of di-arsenic interstitial and its implications for arsenic-interstitial diffusion in crystalline silicon, Kim Y, Kirichenko TA, Kong N,Larson L, Banerjee SK, PHYSICA B-CONDENSED MATTER Volume: 401 Pages: 144-147, DEC 15 2007

655. Effect of edge roughness on electronic transport in graphene nanoribbon channel metal-oxide-semiconductor field-effect transistors, Basu D, Gilbert MJ, Register LF, Macdonald A, Banerjee SK, APPLIED PHYSICS LETTERS Volume: 92 Issue: 4 Article Number: 042114, JAN 28 2008

656. High mobility strained Ge PMOSFETs with high-kappa gate dielectric and metal gate on Si substrate, Donnelly JP, Kelly DQ, Garcia-Gutierrez DI, Jose-Yacaman M, Banerjee SK, ELECTRONICS LETTERS Volume: 44 Issue: 3 Pages: 240-U24, JAN 31 2008

657. Schrodinger equation Monte Carlo in two dimensions for simulation of nanoscale metal-oxide-semiconductor field effect transistors, Chen WQ, Register LF, Banerjee SK, JOURNAL OF APPLIED PHYSICS Volume: 103 Issue: 2 Article Number: 024508 JAN 15 2008

658. Demonstration of high-performance PMOSFETs using Si-SixGe1-x-Si quantum wells with high-kappa/metal-gate stacks, Majhi P, Kalra P, Harris R, Choi KJ, Heh D, Oh J, Kelly D,

Choi R, Cho BJ, Banerjee S, Tsai W, Tseng H, Jammy R, IEEE ELECTRON DEVICE LETTERS, Vol: 29 (1), pp. 99-101, JAN 2008.

659. Effects of Non-Ideal Edges in Graphene Nanoribbons, D. BASU, M.J. GILBERT, L.F. REGISTER, S.K. BANERJEE, APS March Meeting 2008, New Orleans.

660. Evidence of Real-Space Transfer in Buried-Channel Ge*x*C1-*x* Devices EN-SHAO LIU, DAVID KELLY, JOSEPH DONNELLY, EMANUEL TUTUC, SANJAY BANERJEE, APS March Meeting 2008, New Orleans.

661. Ferromagnetism in Mn-implanted Ge and epitaxial GeC, SAMARESH GUCHHAIT, JOHN MARKERT, MUSTAFA JAMIL, SANJAY BANERJEE, APS March Meeting 2008, New Orleans.

662. Electronic properties of one-dimensional graphene bi-layer ribbons, BHAGAWAN SAHU, HONGKI MIN, ALLAN MACDONALD, SANJAY BANERJEE, APS March Meeting 2008, New Orleans.

663. Tackhwi Lee, Yonghyun Kim, and Sanjay K. Banerjee, "Potential Approach to grow Epitaxial Graphene by using Carbon Implant on the Si(111) Substrate" MRS Spring 2008.

664. A Comprehensive Study of Growth Techniques & Characterization of Epitaxial $Ge_{1-x}C_x$ (111) Layers Grown Directly on Si (111) for MOS Applications, Mustafa Jamil, Joseph P. Donnelly, Se-Hoon Lee, Davood Shahrjerdi, Emanuel Tutuc and Sanjay K. Banerjee, MRS Spring 2008.

665. S.Banerjee, "Microelectronics: The End the Beginning or Beginning of the End?" **Invited** talk to SRC Board of Directors, March 2008, Washington DC. Also Congressional panel on Nanotechnolgy.

666. N.Jain, E.Tutuc, S.Banerjee, L.Register, Performance Analysis of Ge Tunneling Field Effect Transistors, DRC Santa Barbara 2008

667. E-S.Liu, N.Jain, K.Varahramyan, J.Nah, S.Banerjee, E.Tutuc, Impact of metal contact depth on device performance in back gated semiconductor nanowire FET, DRC 2008

668. F.Ferdousi, J.Sarkar, T.Aykol, D.Shahredji, J.Donnely, E.Tutuc and S.Banerjee, Vertical Flash Memory with Protein Assembled Nanoparticle Floating Gate and Al2O3 Direlectric, DRC 2008.

669. H.Zhao, D.Shahrjerdi, F.Zhu, I.Ok, H.Kim, S.Banerjee, J.Lee, ALD Al2O3 Gate Dielectrics on InP using S Passivation, EMC 2008

670. J.Mustafa, S.Guchhait, J.Markert, E.Tutuc and S.Banerjee, Ferromagnetism is Epi Grown GeC layers on Si (100), EMC 2008.

671. D. Shahrjerdi, N. Nuntawong, G. Balakrishnan, D. I. Garcia-Gutierrez , A. Khoshakhlagh, E. Tutuc, D. Huffaker, J. C. Lee and S. K. Banerjee, "Fabrication and characterization of metal-oxide-semiconductor GaAs capacitors on Ge/Si_1-x Ge_x /Si substrates with Al_2 O_3 gate dielectric", J. Vacuum Science Tech B. v. 26(3), May 2008

672. Oh, Jungwoo,Majhi, Prashant, Lee, Banerjee, Sanjay, Harris, Rusty, Tseng, Hsing-Huang, Jammy, Raj Combined effects of an epitaxial Ge channel and Si substrate on Ge-on-Si metal-oxide-semiconductor capacitors and field effect transistors JAPANESE JOURNAL OF APPLIED PHYSICS Volume: 47 Issue: 4 Pages: 2656-2659 Part: Part 2 APR 2008

673. Oh, Jungwoo, Majhi, Prashant, Tseng, Hsing-Huang, Jammy, Raj, Kelly, David Q., Banerjee, Sanjay K., Campbell, Joe C., Interface characteristics of ZrO2 high-k gate dielectrics on epitaxial Ge capacitor layers after thermal desorption of Ge native oxide and Ge nitridation, THIN SOLID FILMS Vol: 516 (12), p. 4107-4110 APR 2008

674. Bhagawan Sahu, Sanjay K. Banerjee and Leonard Kleinman, Density functional study of bulk silicon lightly doped with manganese, PHYSICAL REVIEW B Volume: 77 Issue: 15 Article 155202 APR 2008

675. Shahrjerdi, D.,Akyol, T., Ramon, M., Garcia-Gutierrez, D. I., Tutuc, E., Banerjee, S. K. Self-aligned inversion-type enhancement-mode GaAs metal-oxide-semiconductor field-effect

transistor with Al2O3 gate dielectric, APPLIED PHYSICS LETTERS Volume: 92 Issue: 20 Article Number: 203505 MAY 19 2008

676. Shahrjerdi, Davood, Rotter, Thomas, Balakrishnan, Ganish, Huffaker, Diana, Tutuc, Emanuel, Banerjee, Sanjay K. Fabrication of self-aligned enhancement-mode In0.53Ga0.47As MOSFETs with TaN/HfO2/AlN gate stack, IEEE ELECTRON DEVICE LETTERS Volume: 29 Issue: 6 Pages: 557-560 JUN 2008

677. Zhao, Han, Shahrjerdi, Davood, Zhu, Feng, Zhang, Manhong, Kim, Hyoung-Sub, Ok, Injo, Yum, Jung Hwan, Park, Sung Il, Banerjee, Sanjay K., Lee, Jack C. Gate-first inversion-type InP metal-oxide-semiconductor field-effect transistors with atomic-layer-deposited Al2O3 gate dielectric, APPLIED PHYSICS LETTERS Volume: 92 Issue: 23 Article Number: 233508 JUN 9 2008

678. Shahrjerdi, D., Garcia-Gutierrez, D. I., Tutuc, E., Banerjee, S. K. Chemical and physical interface studies of the atomic-layer-deposited Al2O3 on GaAs substrates, APPLIED PHYSICS LETTERS Volume: 92 Issue: 22 Article Number: 223501 JUN 2 2008

679. Zhao, Han, Shahrjerdi, Davood, Zhu, Feng, Kim, Hyoung-Sub, Ok, Injo, Zhang, Manhong, Yum, Jung Hwan, Banerjee, Sanjay K., Lee, Jack C. Inversion-type InP MOSFETs with EOT of 21 angstrom using atomic layer deposited Al2O3 gate dielectric, ELECTROCHEMICAL AND SOLID STATE LETTERS Volume: 11 Issue: 8 Pages: H233-H235 2008

680. Zhao, Han, Shahrjerdi, Davood, Zhu, Feng, Kim, Hyoung-Sub, Ok, Injo, Zhang, Manghong, Yum, Jung Hwan, Banerjee, Sanjay K., Lee, Jack C. Inversion-type indium phosphide metal-oxide-semiconductor field-effect transistors with equivalent oxide thickness of 12 angstrom using stacked HfAlOx/HfO2 gate dielectric, APPLIED PHYSICS LETTERS Volume: 92 Issue: 25 Article Number: 253506 JUN 23 2008

681. Kong, Ning, Kirichenko, Taras A., Kim, Yonghyun, Foisy, Mark C., Banerjee, Sanjay K.Physically based kinetic Monte Carlo modeling of arsenic-interstitial interaction and arsenic uphill diffusion during ultrashallow junction formation, JOURNAL OF APPLIED PHYSICS Volume: 104 Issue: 1 Article Number: 013514 JUL 1 2008

682. Sahu, Bhagawan, Min, Hongki, MacDonald, A. H., Banerjee, Sanjay K. Energy gaps, magnetism, and electric-field effects in bilayer graphene nanoribbons, PHYSICAL REVIEW B Volume: 78 Issue: 4 Article Number: 045404 JUL 2008

683. Ning Kong, Taras A. Kirichenko, Gyeong S. Hwang, and Sanjay K. Banerjee, Interstitial-based boron diffusion dynamics in amorphous silicon, Appl. Phys. Lett. 93, 082109 (2008)

684. D. Shahrjerdi, D. I. Garcia-Gutierrez, and S. K. Banerjee, "Fabrication of Self-aligned Enhancement-mode n-channel GaAs MOSFETs Employing a Wet Clean Process for GaAs Substrates", 214th Int. Electrochemical Society meeting, Hawaii, 2008

685. S. Kim, J. Nah, I. Jo, D. Shahrjerdi, L. Colombo, Z. Yao, E. Tutuc, S. Banerjee, CARRIER MOBILITY IN GRAPHENE DEVICES WITH HIGH-κ DIELECTRICS, SRC TECHCON, 2008

686. J.Mustafa, S.Guchhait, D.Ferrer, E.Tutuc, J.Markert, L.Colombo and S. Banerjee, Ferromagnetism in Mn-implanted Epitaxially Grown GeC on (100) Si, SRC TECHCON, 2008

687. H.Chen, L. Register, M.Gilbert, S. Banerjee, Resonant Tunneling enhanced FET for low voltage switching: concept and quantum transport simulation, SRC TECHCON, 2008

688. F.Ferdousi, J.Sarkar, S.Tang, D. Shahrjerdi, E. Tutuc, S. Banerjee, Improved Memory Operation of Vertical Flash Devices with Al2O3 control oxide and nanocrystal floating gate, SRC TECHCON, 2008

689. H.Liu, .. , S. Banerjee, Fabrication of Ni Nanocrystal Flash Memory using Protein-Induced Assembly, SRC TECHCON, 2008

690. N.Shi, F.Register, S.Banerjee, A Full-Band Monte Carlo Simulator with Quantum-Confinement-Enhanced Scattering, SRC TECHCON, Austin, TX, 2008

691. D. Shahrjerdi, E. Tutuc, and S. K. Banerjee, "Self-aligned Enhancement-mode GaAs MOSFETs with Al_2 O_3 gate dielectric", SRC TECHCON, Austin, TX, 2008

692. Dipanjan Basu, L.Register, M.Gilbert, A.Macdonald and S.Banerjee, Effect of Non-Ideal Edges on Electronic Transport in Graphene Nanoribbon Channel Metal Oxide Semiconductor Field-Effect Transistors, SRC TECHCON, 2008
693. E.Tutuc, S.Banerjee, J.Nah, K.Vahramyan, N.Jain and D.Ferrer, Opportunities for Group IV nanowire devices in Si CMOS tehnology, **Invited**, Transactions of ECS, Oct. 2008.
694. M.Ramon, D. Shahrjerdi, C.Young, D. Garcia-Gutierrez, T. Akyol, S. Banerjee, Ultra short pulsed IV Characterization of GaAs FET with Al2O3 Gate dielectric, SISC, Dec. 08.
695. T.Lee and S.Banerjee, Device Peformance of HfON charge trap layer NAND flash memory, SISC, 2008.
696. T.Lee, S.Park, J.Lee and S.Banerjee, Breakdown mechanism for thin EOT Dy2O3/HfO2 dielectric, IEEE IRW Conf. Oct. 2008.
697. N.Shi, L.Register and S.Banerjee, On strain and scattering in deeply-scaled NMOSFETs: a quantum corrected semiclassical Monte Carlo analysis, IEDM 2008.
698. S.H. Lee, P.Mahji,…S.K.Banerjee and R.Jammy, "Demonstration of 55 nm pMOSFETs with Si/Si0.25Ge075 channels, high ON/OFF and controlled SCE," IEEE Elec. Dev. Lett. 29(9), p. 1017, Sept. 2008.
699. "Doping of Ge-Si_xGe_{1-x} core-shell nanowires using low energy ion implantation", Junghyo Nah*, K. Varahramyan, E.-S. Liu, S.K. Banerjee, E. Tutuc, Appl. Phys. Lett. 93, 203108 (2008).
700. Core-Shell Germanium-Silicon Nanocrystal Floating Gate for Nonvolatile Memory Applications, Liu H, Winkenwerder W, Liu YR, Ferrer D, Shahrjerdi D, Stanley SK, Ekerdt JG, S.Banerjee, IEEE TRANSACTIONS ON ELECTRON DEVICES Vol: 55 (12) Pg: 3610-3614, DEC 2008
701. Schrodinger equation Monte Carlo in three dimensions for simulation of carrier transport in three-dimensional nanoscale metal oxide semiconductor field-effect transistors, Liu KM, Chen WQ, Register LF, S.K.Banerjee, JOURNAL OF APPLIED PHYSICS v. (11): 114515, DEC 1 2008
702. S.Banerjee, F.Register, E.Tutuc, A.Macdonald, D.Reddy and D.Basu, Microelectronics: the Beginning of the end or the end of the beginning?", *Invited Keynote*, ACM TAU workshop, Austin, TX, Feb. 2009.
703. Vth Variation and Strain Control of High Ge% Thin SiGe Channels by Millisecond Anneal Realizing High Performance pMOSFET beyond 16nm node, S.Lee, …S.Banerjee, R.Jammy, VLSI Symp. Kyoto, 2009.
704. High-Mobility Dual-gated Graphene Field-Effect Transistors with Al2O3 Dielectric, Seyoung Kim, Junghyo Nah, Insun Jo, Davood Shahrjerdi, Luigi Colombo, Zhen Yao, Emanuel Tutuc and Sanjay K. Banerjee, APS March Meeting 2009.
705. Epitaxial Growth and Characterization of Void-Free 3C-SiC Films on Germanium-Modifed Si Substrates using RTCVD, DOMINGO FERRER, SHAGANDEEP KAUR, SAYAN SAHA, SEYOUNG KIM, EMANUEL TUTUC, SANJAY BANERJEE, APS March Meeting 2009.
706. Top-gate Ge-Si*x*Ge1*;x* core-shell nanowire field effect transistors with highly doped source and drain, JUNGHYO NAH, E.-S. LIU, D. SHAHRJERDI, K. M. VARAHRAMYAN, S. K. BANERJEE, E. TUTUC, APS March Meeting 2009.
707. Epitaxial growth of Ge-Si*x*Ge1-*x* core-shell nanowireheterostructures with tunable shell content, KAMRAN VARAHRAMYAN, DOMINGO FERRER, EMANUEL TUTUC, SANJAY BANERJEE, APS March Meeting 2009.
708. Prospects of Spin Injection in Germanium Nanowires, EN-SHAO LIU, KAMRAN VARAHRAMYAN, JUNGHYO NAH, SANJAY BANERJEE, EMANUEL TUTUC, APS March Meeting 2009.
709. Mn-implanted GeC: An Amorphous Ferromagnetic Material, SAMARESH GUCHHAIT, M. JAMIL, D. FERRER, E.TUTUC, J. MARKERT, S. BANERJEE,A. LI-FATOU, L. COLOMBO, APS March Meeting 2009.

710. Negative Differential Resistance in Buried-Channel GexC1-x pMOSFETs, Liu ES, Kelly DQ, Donnelly JP, Tutuc E, Banerjee, Sanjay, IEEE ELECTRON DEVICE LETTERS Vol: 30 (2), pg: 136-138, FEB 2009
711. S.K.Banerjee, L.Register, E.Tutuc, D.Reddy and A.Macdonald, "Bilayer pseudoSpin Field Effect Transistor (BiSFET): a proposed new logic device," IEEE Elec. Dev. Lett. P. 157, 30(2), Feb. 2009.
712. Protein-Assembled Nanocrystal-Based Vertical Flash Memory Devices with Al2O3 Integration Ferdousi F, Sarkar J, Tang S, E.Tutuc and S.K.Banerjjee, JOURNAL OF ELECTRONIC MATERIALS Vol. 38 (3) Pg: 438-442, MAR 2009
713. Realization of dual-gated Ge-SixGe1-x core-shell nanowire field effect transistors with highly doped source and drain, Nah J, Liu ES, Shahrjerdi D, Varahramyan, K. M., Banerjee, S. K., Tutuc, E., APPLIED PHYSICS LETTERS Vol: 94 (6) Article Number: 063117, FEB 9 2009
714. Realization of a high mobility dual-gated graphene field-effect transistor with Al2O3 dielectric, Kim S, Nah J, Jo I, Shahrjerdi, Davood, Colombo, Luigi, Yao, Zhen, Tutuc, Emanuel, Banerjee, Sanjay K., APPLIED PHYSICS LETTERS Volume: 94 (6) Article Number: 062107, FEB 9 2009
715. First-principles studies of small arsenic interstitial complexes in crystalline silicon, Yonghyun Kim, Taras A. Kirichenko, Ning Kong, Graeme Henkelman, and Sanjay K. Banerjee, Phys. Rev. B, Volume: 79 (7), FEB 2009
716. Rownak Jyoti Zaman, Kenneth Matthews, Mohammad Mehedi Hasan, Weize Xiong, Leonard Franklin Register, and Sanjay K. Banerjee, "A Novel Low-Cost Trigate Process Suitable for Embedded CMOS 1T-1C Pseudo-SRAM Application, IEEE TRANSACTIONS ON ELECTRON DEVICES, VOL. 56, NO. 3, MARCH 2009
717. Shape- and Size-Controlled Fabrication of Lead Chalcogenide Nanocrystals for Information Storage Devices, Domingo Ferrer, Hai Liu, Erik Taylor and Sanjay Banerjee, MRS Spring 2009.
718. Sun, H. C. Floresca, J. G. Wang, J. Mustafa, S. Guchhait, D. Ferrer, S. K. Banerjee, G. Lian, L. Colombo and M. J. Kim, "Amorphous Structure and Stability of Mn Implanted GeC Ferromagnetic Semiconductor," Microscopy and Microanalysis, 2009 (in press).
719. Large-Area Synthesis of High-Quality and Uniform Graphene Films on Copper Foils, Li XS, Cai WW, An JH, Kim S, Nah J, Yang DX, Piner R, Velamakanni A, Jung I, Tutuc E, Banerjee, SK, Colombo L, Ruoff RS, Science, Vol: 324 Issue: 5932 Pages: 1312-1314, JUN 5 2009.
720. Band engineered epitaxial Ge-SixGe1-x core-shell nanowire heterostructures, Varahramyan KM, Ferrer D, Tutuc E, Banerjee, SK, APPLIED PHYSICS LETTERS Volume: 95(3) , JUL 20 2009
721. Shahrjerdi, J. Nah, T. Akyol, M. Ramon, E. Tutuc, and S. K. Banerjee, Accurate Inversion Charge and Mobility Measurements in Enhancement-mode GaAs Field-Effect Transistors with High-k Gate Dielectrics, DRC, 2009
722. J.Nah, E.Liu,.., SBanerjee, E.Tutuc, Top Gated Ge-SixGe1-x core shell NWFETs with highly doped S/D, DRC, 2009.
723. Bilayer pseudoSpin Field Effect Transistor (BiSFET)- a proposed logic device and circuits, Dharmendar Reddy, Leonard F. Register, Emanuel Tutuc, Allan MacDonald and Sanjay K. Banerjee, DRC, 2009.
724. Jamil, E. Liu, F. Ferdousi, J. Donnelly, E. Tutuc, L. Colombo, and S. Banerjee, Effect of Si-Cap Thickness on Device Performance of Buried Channel Si/Ge1-xCx/Si Devices, Electronic Materials Conference, 2009.
725. J. Oh, I. Ok, C. Kang, M. Jamil, S. Lee, W. Loh, J. Huang, B. Sassman, L. Smith, S. Parthasarathy, B. E. Coss, W. Choi, H.. Lee, M. Cho, S. Banerjee, P. Majhi, P. Kirsch, H. Tseng and R. Jammy, Mechanisms for Low On-State Current of Ge (SiGe) nMOSFETs: A Comparative Study on Gate Stack, Resistance, and Orientation-Dependent Effective Masses, Symposium on VLSI Technology, 2009 .

726. Effects of Extension profile Engineering to suppress B TED on reliability of high-k metal gate SiGe PMOSFETs, M.Park,… S.Banerjee, Ra.Jammy, Int. Gate Stack Meeting, CA, 2009.
727. Growth and Electronci Properties of Ge-SiGe core shell NW heterostructures, E.Tutuc, K.Varahahmyan, J.Nah, E.Liu, D.Shahredji, S.Banerjee, **invited**, SPIE, 2009.
728. Comprehensive Design Methodology of Extension Profile to Suppress Boron TED in High Performance High-k/ Metal SiGe pMOSFETs, C. Y. Kang, Y. H. Kim, M. S. Park, J. W. Oh, B. G. Min, K. S. Lee, S. K. Banerjee, P. Majhi, H. H. Tseng and R. Jammy, *SSDM,* Japan, 2009.
729. S.Banerjee, L.Colombo and E.Tutuc, High-k materials on alternative substrates: Ge, GaAs and graphene, **Invited** talk, ECS Fall meeting, Vienna, Austria Oct. 2009.
730. S.Banerjee, "Nanocrystal Floating Gate Memories," **Invited** talk, Chip on the Dunes, Brazil, Sept. 2009.
731. Resonant Injection Enhanced Field Effect Transistor for Low Voltage Switching: Concept and Quantum Transport Simulation, Hui Chen, L.F. Register, S.K. Banerjee, SISPAD Sept. 2009
732. Semiclassical Monte Carlo with quantum-confinement enhanced scattering: Quantum correction and application to short-channel device performance vs. mobility for biaxial-tensile-strained silicon nMOSFETs, Ningyu Shi, Leonard F. Register and Sanjay K. Banerjee, SISPAD 2009.
733. Atomistic simulation of band-to-band tunneling in III-V nanowire field-effect transistors, Dipanjan Basu, Leonard F. Register1, Matthew J. Gilbert and Sanjay K. Banerjee, SISPAD, 2009.
734. Atomistic Kinetic Monte Carlo (KMC) Modeling for Self-Interstitial Clusters and Boron-Interstitial Clusters in SiGe, Yonghyun Kim, T.Kirichenko, N.King, S.Banerjee, SRC TECHCON, 2009,
735. Interlayer Tunneling Across Coupled Graphene Nanoribbons Dipanjan Basu, L.Register, A.MacDonald, S.Banerjee, SRC TECHCON, Austin, 2009.
736. Low-Temperature Rapid Thermal Chemical Vapor Deposition of 3C-SiC on Si using Thin Ge Buffer Layer Shagandeep Kaur, .. E.Tutuc, S.Banerjee, SRC TECHCON, Austin, 2009.
737. Arsenic-Defect Complexes at SiO_2/Si Interfaces, Ning Kong, Taras. A. Kirichenko, Gyeong S. Hwang, Sanjay. K. Banerjee, SRC TECHCON, Austin, 2009.
738. Bilayer pseudoSpin Field Effect Transistor (BiSFET)- a proposed logic device and circuits, Dharmendar Reddy, Leonard F. Register,Emanuel Tutuc, Allan MacDonald, Sanjay K. Banerjee, SRC TECHCON, Austin, 2009.
739. Jamil, D. Ferrer, S. Kaur, E. Tutuc, and S. K. Banerjee, "Electrical Characteristics and Thermal Stability Study of TaN/Al_2O_3/GeO_2/Ge (111) MOS Capacitors," MRS Fall Meeting 2009.
740. Arsenic defect complexes at SiO2/Si interfaces: A density functional theory study , Kong N, Kirichenko TA, Hwang GS, Banerjee SK,PHYSICAL REVIEW B Volume: 80 Issue: 20 Article Number: 205328, NOV 2009
741. Physical and electrical characterizations of metal-oxide-semiconductor capacitors fabricated on GaAs substrates with different surface chemical treatments and Al2O3 gate dielectric, Garcia-Gutierrez DI, Shahrjerdi D, Kaushik V, Banerjee SK, JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B Volume: 27 Issue: 6 Pages: 2390-2395, NOV 2009
742. Flicker-Noise Improvement in 100-nm L-g Si0.50Ge0.50 Strained Quantum-Well Transistors Using Ultrathin Si Cap Layer, Li F, Lee SH, Fang Z, Banerjee SK, Datta S, IEEE ELECTRON DEVICE LETTERS Volume: 31 Issue: 1 Pages: 47-49, JAN 2010
743. Scaling Properties of Ge-SixGe1-x Core-Shell Nanowire Field-Effect Transistors, Nah J, Liu ES, Varahramyan KM, Banerjee SK, Tutuc E,IEEE TRANSACTIONS ON ELECTRON DEVICES Volume: 57 Issue: 2 Pages: 491-495 Published: FEB 2010
744. Effects of magnetism and electric field on the energy gap of bilayer graphene nanoflakes, Sahu B, Min HK, Banerjee SK, PHYSICAL REVIEW B Volume: 81 Issue: 4 Article Number: 045414, JAN 2010

745. Role of Metal-Semiconductor Contact in Nanowire Field-Effect Transistors, Liu ES, Jain N, Varahramyan KM, Banerjee SK, Tutuc E, IEEE TRANSACTIONS ON NANOTECHNOLOGY Volume: 9 Issue: 2 Pages: 237-242, MAR 2010
746. Bilayer Pseudospin Field-Effect Transistor: Applications to Boolean Logic, Reddy D, Register LF, Tutuc E, Banerjee SK, IEEE TRANSACTIONS ON ELECTRON DEVICES Volume: 57 Issue: 4 Pages: 755-764, APR 2010
747. Effects of Si-cap thickness and temperature on device performance of Si/Ge1-xCx/Si p-MOSFETs, Jamil M, Liu ES, Ferdousi F, Tutuc E, Banerjee SK, SEMICONDUCTOR SCIENCE AND TECHNOLOGY Volume: 25 Issue: 4 Article No: 045005, APR 2010
748. Analytical Model of Short-Channel Double-Gate JFETs, Chang, J.; Kapoor, A. K.; Register, L. F, Banerjee, S. K.; IEEE Transactions on Elec. Dev, Volume: 57 , Issue: 8, Aug. 2010.
749. Tight-binding study of electron-hole pair condensation in graphene bilayers: Gate control and system-parameter dependence, Basu D, Register LF, Reddy, Macdonald AH, Banerjee SK, PHYSICAL REVIEW B Volume: 82 Issue: 7 Article Number: 075409 : AUG 10 2010
750. S. Kim, I. Jo, J. Nah, S. K. Banerjee and E. Tutuc, "Independently-contacted Graphene Bilayers: Towards pseudospin-based graphene logic devices," The Sixth International Nanotechnology Conference on Communications and Cooperation, May 2010, Grenoble, France
751. Effects of InP barrier layer thicknesses and different ALD oxides on device performance of $In_{0.7}Ga_{0.3}As$ MOSFETs, Han Zhao, Ning Kong, Yen-Ting Chen, Yanzhen Wang, Fei Xue, Fei Zhou, Sanjay K. Banerjee and Jack C. Lee, DRC 2010
752. Ge-Si_xGe_{1-x} Core-Shell Nanowire Tunneling Field-Effect Transistors, J. Nah, Y. Kim, E.–S. Liu, K. M. Varahramyan, S. K. Banerjee, and E. Tutuc, DRC 2010
753. Characterization and Modeling of Exfoliated and CVD Graphene Field Effect Transistors, S. Banerjee, E. Tutuc and L.F.Register, GOMAC Inv. Talk, 2010.
754. Changing Front-End Dielectric Requirements for End-of-the-Roadmap CMOS and Beyond, Leonard. F. Register, Dipanjan Basu, Mohammad M. Hasan, Dhamendar Reddy, Ningyu Shi, and Sanjay K. Banerjee, ECS Inv. Talk, 2010.
755. Characterization and Modeling of Exfoliated and CVD Graphene FETs, S. Banerjee, E. Tutuc, L.F.Register, R.Ruoff, S.Kim, D.Basu and L.Colombo, MRS Inv. Talk, April 2010.
756. Epitaxial GeSiGe core Shell NW heterostructures and high performance FETs, E.Tutuc, J.Nah, K. Varahramyan, E.Liu, D.Ferrer and S.Banerjee, **Invited** MRS talk, April 2010.
757. Bandgap engineering by magnetism and external electric fields in multilayer graphene sheets, B.Sahu, H.Min, S.Banerjee and A.Macdoanld, MRS April 2010.
758. Retention modeling of nanocrystalline flash memories: A Monte Carlo approach, Bahniman Ghosh and Sanjay K. Banerjee, Singapore, 2010.
759. Shape dependency of magnetic properties of FePt nanostructures, S.Guchhait, D.Ferrer, H.Liu, F.Ferdousi, C.Corbet and S.K. Banerjee, APS March Meeting, 2010.
760. Lateral spin injection in Ge nanowires, E.Liu, J.Nah, K. Varahramyana, S.Banerjee and E.Tutuc, APS March Meeting, 2010.
761. Graphene and its Applications, S.Banerjee, F. Register, E.Tutuc, Nikkei Electronics Symp. **Invited** talk, Tokyo, 2010.
762. Hole band anisotropy effect on ON state performance of biaxial compressive strained SiGe short channel QW pMOSFETs, S.H.Lee, ….S.Banerjee and R.Jammy, VLSI TSA, Taiwan, 2010.
763. Coulomb Drag in Independently Contacted Graphene Bilayers, Seyoung Kim,Insun Jo, Junghyo Nah, Zhen Yao, Sanjay K. Banerjee, Emanuel Tutuc SRC TECHCON, Austin, **Best paper**, Sept. 2010
764. Growth of Epitaxial Ge:C on Si(111) by Ultra High Vacuum Chemical Vapor Deposition for CMOS Applications, M. Jamil, D. Ferrer, M. Ramon, J. Mantey E. Tutuc, L. Colombo, and S. K. Banerjee, SRC TECHCON, Austin, Sept. 2010

765. Stepped broken-gap Hetero-barrier Tunnel Field Effect Transistor (HetTFET) for ultra-low power and high speed, Mohammad M. Hasan, Leonard F. Register and Sanjay K. Banerjee, SRC TECHCON, Austin, Sept. 2010
766. Nanomagnets for Spin Torque Memory Devices, D.Ferrer, ….S.K.Banerjee, SRC TECHCON, Austin, Sept. 2010
767. Graphene FETs and Beyond, Sanjay Banerjee, L.Register, E.Tutuc, R.Ruoff, A.MacDonald, L.Colombo[*], G.Carpenter[#], S.Kim. D.Basu, D.Reddy, **Invited** talk, Carbon Electronics Workshop, Albany, NY, Sept. 2010
768. Electron transport in dual-gated mono and bilayer graphene devices with high-k, E.Tutuc, S.Kim, B.Fallah, K.Lee, J.Nah, S.K.Banerjee, AVS Oct. 2010, **Invited**.
769. Graphene for Beyond Scaled CMOS, Luigi Colombo,S. Kim, E. Tutuc, R. Ruoff, L. Register, S.K. Banerjee, SEMATECH Int. Gate Stack Workshop, Sept.2010, **Invited**.
770. Effects of edge magnetism and external electric field on energy gaps in multilayer graphene nanoribbons, Sahu B, Min HK, Banerjee SK, PHYSICAL REVIEW B Volume: 82 Issue: 11 Article Number: 115426, SEP 14 2010
771. Retention modeling of nanocrystalline flash memories: A Monte Carlo approach, Ghosh B, Liu H, Winstead B, Foisy, M, Banerjee SK, SOLID-STATE ELECTRONICS Volume: 54 Issue: 11 Pages: 1295-1299, NOV 2010
772. Graphene for CMOS and Beyond CMOS Applications, S. K. Banerjee, L.F.Register, E. Tutuc, D.Basu, S.Kim, D.Reddy and A.H. MacDonald, Proceedings of IEEE, Dec. 2010, vol. 98(12), pg. 2032, **Invited** paper.
773. "The Future of the Semiconductor Industry," S.K.Banerjee, Keynote speech to Semiconductor Industry Association and Federal Reserve, Austin TX, Dec. 2010.
774. "Nanoelectronics Research Initiative," S.Banerjee, Keynote, NSF, Dec. 2010.
775. Magnetism in bulk and finite size graphene multilayers and its effect on the band gaps, APS March Meeting, Dallas, 2011
776. Coulomb Drag in Independently Contacted Graphene Bilayers, APS March Meeting, Dallas, 2011
777. Dependence of Condensate Formation in Graphene Bilayers on Relative Layer Orientation, APS March Meeting, Dallas, 2011
778. First-principles study of polarization in graphene, APS March Meeting, Dallas, 2011
779. Tunneling between two independently contacted graphene layers Effect of Dielectric Materials on the Topological Insulator Bi2Se3 Surface States, APS March Meeting, Dallas, 2011
780. Numerical simulation of time-dependent transport in graphene, APS March Meeting, Dallas, 2011
781. Ferromagnetism in Mn-implanted HOPG, APS March Meeting, Dallas, 2011
782. Device characteristics of HfON charge-trap layer nonvolatile memory, Lee T, Banerjee SK, JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B Volume: 28 Issue: 5 Pages: 1005-1010, SEP-OCT 2010
783. High-Mobility TaN/Al2O3/Ge(111) n-MOSFETs With RTO-Grown Passivation Layer, Jamil M, Oh J, Ramon M, Kaur S, Majhi P, Tutuc E, Banerjee SK, IEEE ELECTRON DEVICE LETTERS Volume: 31 Issue: 11 Pages: 1208-1210, NOV 2010
784. Hall mobility measurements in enhancement-mode GaAs field-effect transistors with Al2O3 gate dielectric, Shahrjerdi D, Nah J, Hekmatshoar B, Akyol T, Ramon M, Tutuc E, Banerjee SK, APPLIED PHYSICS LETTERS Volume: 97 Issue: 21 Article Number: 213506, NOV 22 2010
785. Reduced Gate-Leakage Current and Charge Trapping Characteristics of Dysprosium-Incorporated HfO2 Gate-Oxide n-MOS Devices, Lee T, Banerjee SK, IEEE TRANSACTIONS ON ELECTRON DEVICES , Volume: 58 Issue: 2 Pages: 562-566, FEB 2011

786. Low-Frequency Acoustic Phonon Temperature Distribution in Electrically Biased Graphene, Jo I, Hsu IK, Lee YJ, Sadeghi MM, Kim S, Cronin S, Tutuc E, Banerjee SK, Yao Z, Shi L, NANO LETTERS Volume: 11 Issue: 1 Pages: 85-90 , JAN 2011
787. Quantum Transport Simulation of Strain and Orientation Effects in Sub-20 nm Silicon-on-Insulator FinFETs, Liu KM, Register LF, Banerjee SK, IEEE TRANSACTIONS ON ELECTRON DEVICES Volume: 58 Issue: 1 Pages: 4-10, JAN 2011
788. ON-State Performance Enhancement and Channel-Direction-Dependent Performance of a Biaxial Compressive Strained Si0.5Ge0.5 Quantum-Well pMOSFET Along < 110 > and < 100 > Channel Directions, Lee SH, Nainani A, Oh J, Jeon K, Kirsch PD, , Register LF, Banerjee SK, Jammy R, IEEE TRANSACTIONS ON ELECTRON DEVICES Volume: 58 Issue: 4 Pages: 985-995, APR 2011
789. Atomic layer deposited beryllium oxide: Effective passivation layer for III-V metal/oxide/semiconductor devices, Yum JH, Akyol T, Lei M, Hudnall T, Bersuker G, Downer M, Bielawski CW, Lee JC, Banerjee SK, JOURNAL OF APPLIED PHYSICS Volume: 109 Issue: 6 Article Number: 064101,MAR 15 2011
790. Mechanism of V-FB/V-TH shift in Dysprosium incorporated HfO2 gate dielectric n-Type Metal-Oxide-Semiconductor devices, Lee T, Choi K, Ando T, Park DG, Gribelyuk MA, Kwon U, Banerjee SK, JOURNAL OF VACUUM SCIENCE & TECHNOLOGY, Volume: 29 Issue: 2, Number: 021209, MAR 2011
791. "Role of Metal-Semiconductor Contact in Nanowire Field-Effect Transistors", J. Nah, E.-S. Liu, N. Jain, K. M. Varahramyan, J. Nah, S. K. Banerjee, E. Tutuc, IEEE Transactions on Nanotechnology 9, 237 (2010).
792. "Graphene Field-Effect Transistors using Large-Area Monolayer Graphene Grown by Chemical Vapor Deposition on Co Thin Films," Michael E. Ramon,…S.Banerjee, SRC Techcon, Austin, TX, September 13, 2011.
793. "Tunneling Resistance Between Independently Contacted Graphene Layers" Chris M Corbet,… E.Tutuc, S.Banerjee, SRC Techcon, Austin, TX, September 13, 2011.
794. "Spin Torque Switching of a Tilted Spin Valve Structure with Co/Pt/Co/Ni Multilayer," Urmimala Roy, F.Ferdousi …, S.Banerjee, SRC Techcon, Austin, TX, September 13, 2011
795. Effect of Dielectric Materials on the Topological Insulator Bi(2)Se(3) Surface States," Jiwon Chang, B.Sahu, F.Register, S.Banerjee, SRC Techcon, Austin, TX, September 13, 2011
796. "Graphene FETs Using Large-Area Monolayer Graphene Grown by CVD on Co Thin Films", M.Ramon, A.Gupta, C. Corbet, D. A. Ferrer, H.C.P. Movva, G. Carpenter, L. Colombo, G. Bourianoff, M. Doczy, D. Akinwande,E.Tutuc, S.Banerjee, DRC Santa Barbara, 2011.
797. Introduction of ALD Beryllium Oxide Gate Dielectric for III-V MOS Devices, T.Akyol, J.H.Yum, D. A. Ferrer, M. Lei, M. Downer, C. W. Bielawski, T. W. Hudnall, G. Bersuker,J.Lee and S.Banerjee, DRC Santa Barbara, 2011.
798. Device and Circuit Performance Evaluation and Improvement of SiGe Tunnel FETs Mishra R, Ghosh B, Banerjee SK, Conference Information: International Conference on Enabling Science and Nanotechnology, DEC 01-03, 2010 Kuala Lumpur City Ctr, Kuala Lumpur, MALAYSIA ENABLING SCIENCE AND NANOTECHNOLOGY Book Series: AIP Conference Proceedings Volume: 1341 Pages: 185-192 Published: 2011
799. Neural Network Modeling of Degradation of Solar Cells Gupta H, Ghosh B, Banerjee SK, Conference Information: International Conference on Enabling Science and Nanotechnology, DEC 01-03, 2010 Kuala Lumpur City Ctr, Kuala Lumpur, MALAYSIA ENABLING SCIENCE AND NANOTECHNOLOGY Book Series: AIP Conference Proceedings Volume: 1341 Pages: 249-253 Published: 2011
800. Coulomb drag of massless fermions in graphene Kim Seyoung; Jo Insun; Nah Junghyo; Yao, Z ; Banerjee, S. K.; Tutuc, E, PHYSICAL REVIEW B Volume: 83 Issue: 16 PhysRevB.83.161401 APR 8 2011

801. Fullerene-Based Hybrid Devices for High-Density Nonvolatile Memory Ferdousi F.; Jamil M.; Liu H.; Kaur, S.; Ferrer, D ; Colombo, L ; Banerjee SK, IEEE TRANSACTIONS ON NANOTECHNOLOGY Volume: 10 Issue: 3 Pages: 572-575 TNANO.2010.2053215 MAY 2011
802. Stepped Broken-Gap Heterobarrier Tunneling Field-Effect Transistor for Ultralow Power and High Speed, Register Leonard F.; Hasan Mohammad M.; Banerjee Sanjay K. IEEE ELECTRON DEVICE LETTERS Volume: **32** Issue: **6** Pages: 743-745 LED.2011.2126038 JUN 2011
803. Density functional study of ternary topological insulator thin films, Chang Jiwon; Register Leonard F.; Banerjee Sanjay K.; Sahu B. PHYSICAL REVIEW B Volume: 83 Issue: 23 PhysRevB. 83.235108 JUN 6 2011
804. Inversion type InP metal oxide semiconductor field effect transistor using novel atomic layer deposited BeO gate dielectric, Yum, JH ; Akyol, T ; Lei, M ; Ferrer, DA ; Hudnall, TW ; Downer, M ; Bielawski, CW ; Bersuker, G ; Lee, JC ; Banerjee, S. K., APPLIED PHYSICS LETTERS Volume: 99 Issue: 3 Article Number: 033502 DOI: 10.1063/1.3614446 Published: JUL 18 2011
805. 3D-Monte Carlo study of short channel tri-gate nanowire MOSFETs David J. K.; Register L. F.; Banerjee S. K.; SOLID-STATE ELECTRONICS Volume: 61 Issue: 1 Pages: 7-12 DOI: 10.1016/j.sse.2010.12.013 JUL 2011
806. Origin of shape anisotropy effects in solution-phase synthesized FePt nanomagnets Ferrer D. A.; Guchhait S.; Liu H.; Ferdousi, F ; Corbet, C ; Xu, H ; Doczy, M ; Bourianoff, G ; Mathew, L ; Rao, R ; Saha, S ; Ramon, M ; Ganguly, S ; Markert, JT ;Banerjee, S. K. JOURNAL OF APPLIED PHYSICS Volume: 110 Issue: 1 Article Number: 014316 DOI: 10.1063/1.3608109 JUL 1 2011
807. Effect of interlayer bare tunneling on electron-hole coherence in graphene bilayers Author(s): Basu D.; Register L. F.; MacDonald A. H.;Banerjee SK, PHYSICAL REVIEW B Volume: 84 Issue: 3 Article Number: 035449 DOI: 10.1103/PhysRevB.84.035449 JUL 28 2011
808. Ferromagnetism in Mn-implanted epitaxially grown Ge on Si(100) Author(s): Guchhait S.; Jamil M.; Ohldag H.; Mehta, A ; Arenholz, E ; Lian, G ; LiFatou, A ; Ferrer, DA ; Markert, JT ; Colombo, L ; Banerjee, S. K. PHYSICAL REVIEW B Volume: 84 Issue: 2 Article Number: 024432 DOI: 10.1103/PhysRevB.84.024432 JUL 29 2011
809. Graphene field-effect transistors, Reddy Dharmendar; Register Leonard F.; Carpenter Gary D.; Banerjee SK, JOURNAL OF PHYSICS D-APPLIED PHYSICS Volume: 44 Issue: 31 Article Number: 313001 DOI: 10.1088/0022-3727/44/31/313001 AUG 10 2011
810. Edge saturation effects on the magnetism and band gaps in multilayer graphene ribbons and flakes, Sahu Bhagawan; Min Hongki; Banerjee Sanjay K. PHYSICAL REVIEW B Volume: 84 Issue: 7 Article Number: 075481 DOI: 10.1103/PhysRevB.84.075481 AUG 16 2011
811. Tackhwi Lee, and Sanjay K. Banerjee, "*V_{TH} shift Mechanism in Dysprosium (Dy)incorporated HfO2 gate nMOS devices",* IEEE IRPS 2011. (International Reliability and Physics Symposium)
812. Metal-Ge-metal photodetectors integrated with dielectric waveguides, J.Cervantes-Gonzalez, D.Ahn, A Torres-Jacome, S.K.Banerjee and I. Zaldivar-Huerta, Int. Commision for Optics, Puebla, Mexico, Aug. 2011.
813. Graphene Nanoelectronics, S.Banerjee, L.F.Register, E.Tutuc, D.Akinwande, L.Colombo and G.Carpenter, TechConnect World Conf, Boston, June 2011, **Invited** talk.
814. Graphene nanoelectronics: a simulation perspective, L.F. Register, D.Basu, X.Mou, D.Reddy, G.Carpenter, A.Hassibi.A.Macdonald, and S.Banerjee, TechConnect World Conf, Boston, June 2011, **Invited** talk.

815. Tunnel FETs, S.Banerjee, L.F.Register, E.Tutuc, D.Reddy, D.Basu, M.Hasan and H.Chen, SEMATECH TFET Workshop, Austin, **Invited** talk.
816. Dielectric deposition and electron transport in graphene devices, E.Tutuc, B.Fallahazad, S.Kim, K.Lee, M.Ramon, S.Banerjee and L.Colombo, ECS May, 2011, **Invited**.
817. Monocrystalline Si solar cell technology, R.Rao, L.Mathew, S.Saha, … E.Oneyagam, D.Jawarani, J.Fossum and S.Banerjee, 37th IEEE Photovoltaic Specialists Conf. Washington DC. July 2011
818. Exfoliated 40 micron Ge cost effective photovoltaic cell, E.Oneyagam, J.Mantey, R.Rao, L.Mathew, M.Hilali, S.Saha, D.Jawarani, S.Sreenivasan and S.Banerjee, 37th IEEE Photovoltaic Specialists Conf. Washington DC., July 2011
819. Novel low cost 25 micron thin exfoliated monocrystalline Si solar cell technology, R.Rao, L.Mathew, S.Saha,..D.Jawarani, E.Oneyagam, S.Banerjee and J.Fossum, European PVSC, Hamburg, Germany, Sept. 2011.
820. A Proposed Novel Graphene Switch: Bilayer Pseudospin Field Effect Transistor, Sanjay Banerjee, Frank Register and Emanuel Tutuc, ICCAD, Nov. 2011, San Jose, **Invited** talk
821. ALD dielectrics for electronic devices, S.Banerjee, Cambridge Nanotech Fall ALD Symposium, Atlanata, GA, Nov. 2011, **Invited**.
822. ALD Beryllium Oxide as a High-k Gate Dielectric for III-V MOS Devices, J. H. Yum, T. Akyol, M. Lei, D. A. Ferrer, Todd. W. Hudnall, M. Downer, C. W. Bielawski, G. Bersuker, J. C. Lee, and S. K. Banerjee, AVS-ALD Conf. 2011
823. ALD Beryllium Oxide: Novel Barrier Layer for High Performance Gate Stacks on Si and HIgh Mobility Substrates, J. H. Yum, T. Akyol, M. Lei, D. A. Ferrer, Todd. W. Hudnall, M. Downer, C. W. Bielawski, G. Bersuker, J. C. Lee, and S. K. Banerjee, IEDM 2011
824. Direct Measurement of the Fermi Energy in Graphene Using a Double Layer Structure, SEYOUNG KIM, INSUN JO, DAVID DILLEN, DOMINGO FERRER, BABAK FALLAHAZAD, ZHEN YAO, SANJAY BANERJEE, EMANUEL TUTUC, APS March Meeting, 2012
825. Ab-initio study of dilute nitride substitutional and split-interstitial impurities in gallium antimonide (N-GaSb), PRIYAMVADA JADAUN, HARI P. NAIR, SETH R. BANK, SANJAY BANERJEE, APS March Meeting, 2012.
826. Spinglass Dynamics of Amorphous Ferromagnetic Ge:Mn, Samaresh Guchhait, Sanjay Banerjee, Raymond Orbach, APS March Meeting, 2012.
827. Impact of Millisecond Flash-Assisted Rapid Thermal Annealing on SiGe Heterostructure Channel pMOSFETs With a High-k/Metal Gate, Lee Se-Hoon; Majhi Prashant; Ferrer Domingo A., Hung, Pui-Yee, Huang, Jeff, Oh, Jungwoo, Loh, Wei-Yip, Sassman, Barry, Byoung-Gi, Tseng, Hsing-Huang, Harris, Rusty, Gennadi Bersuker, Kirsch, Paul D., Jammy, Raj Banerjee, Sanjay K., IEEE TRANSACTIONS ON ELECTRON DEVICES Volume: 58 Issue: 9 Pages: 2917-2923, SEP 2011
828. High-Performance Ge nMOSFETs With n(+)-p Junctions Formed by "Spin-On Dopant" Jamil M.; Mantey J.; Onyegam E. U.; Carpenter, G. D., Tutuc, E., Banerjee, S. K, IEEE ELECTRON DEVICE LETTERS Volume: 32 Issue: 9 Pages: 1203-1205, SEP 2011
829. CMOS-Compatible Synthesis of Large-Area, High-Mobility Graphene by Chemical Vapor Deposition of Acetylene on Cobalt Thin Films Ramon Michael E.; Gupta Aparna; Corbet Chris; Ferrer, Domingo A, Movva, Hema C. P., Carpenter, Gary, Colombo, Luigi, Bourianoff, George, Doczy, Mark Akinwande, Deji, Tutuc, Emanuel Banerjee, Sanjay K., ACS NANO Volume: 5 Issue: 9 Pages: 7198-7204, SEP 2011
830. Dielectric capping effects on binary and ternary topological insulator surface states Author(s): Chang Jiwon; Jadaun Priyamvada; Register Leonard F.; Banerjee, Sanjay K., Sahu, Bhagawan, PHYSICAL REVIEW B Volume: 84 Issue: 15 Article Number: 155105, Published: OCT 10 2011

831. A study of highly crystalline novel beryllium oxide film using atomic layer deposition Author(s): Yum J. H.; Akyol T.; Lei M.; Ferrer, D. A. Hudnall, Todd. W., Downer, M, Bielawski, C. W. Bersuker, G. Lee, J. C.; Banerjee, S. K. Source: JOURNAL OF CRYSTAL GROWTH Volume: 334 Issue: 1 Pages: 126-133 Published: NOV 1 2011

832. Comparison of the self-cleaning effects and electrical characteristics of BeO and Al(2)O(3) deposited as an interface passivation layer on GaAs MOS devices Author(s): Yum J. H.; Akyol T.; Ferrer D. A.; Lee, J. C., Banerjee, S. K., Lei, M., Downer, M. Hudnall, Todd. W., C. W. Bersuker, G., Source: JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A Volume: 29 Issue: 6 Article Number: 061501 Published: NOV 2011

833. Epitaxial ALD BeO: Efficient Oxygen Diffusion Barrier for EOT Scaling and Reliability Improvement, Yum Jung Hwan; Bersuker Gennadi; Akyol Tarik; (Ferrer, D. A, Lei, Ming, Park, Keun Woo; Hudnall, Todd W., Downer, Mike C., Bielawski, Christopher W, Yu, Edward T, Price, Jimmy, Lee, Jack C.; Banerjee, Sanjay K., IEEE TRANSACTIONS ON ELECTRON DEVICES Volume: 58 Issue: 12 Pages: 4384-4392 Published: DEC 2011

834. Density functional theory based study of graphene and dielectric oxide interfaces , Jadaun Priyamvada; Banerjee Sanjay K.; Register Leonard F.; Banerjee, SK, Sahu, B, Source: JOURNAL OF PHYSICS-CONDENSED MATTER Volume: 23 Issue: 50 Article Number: 505503 Published: DEC 21 2011

835. Role of Confinement on Carrier Transport in Ge-Si(x)Ge(1-x) Core-Shell Nanowires, Nah Junghyo; Dillen David C.; Varahramyan Kamran M.; Banerjee, SK, Tutuc E, Source: NANO LETTERS Volume: 12 Issue: 1 Pages: 108-112 Published: JAN 2012

836. Direct Measurement of the Fermi Energy in Graphene Using a Double Layer Structure, Seyoung Kim, Insun Jo, D. C. Dillen, D. A. Ferrer, B. Fallahazad, Z. Yao, S. K. Banerjee, E. Tutuc, Phys Rev. Lett, 2012.

837. U. Onyegam, D. Sarkar, M. Hilali, S. Saha, R.A. Rao, L. Mathew, D. Jawarani, S. Smith, S.K. Banerjee, "Exfoliated Thin, Flexible Monocrystalline Germanium Heterojunction Solar Cells." 38th IEEE PVSC 2012, Austin, TX

838. Sarkar, E.U. Onyegam, S. Saha, A. Rao, L. Mathew, R.S. Smith, D. Xu, D. Jawarani, R. Garcia, S.K. Banerjee, "Remote Plasma Chemical Vapor Depositon for High Efficiency Ultra Thin ~25 Microns Crystalline Si Solar Cells." Presented at 38th IEEE PVSC 2012, Austin, TX.

839. R. Rao, L. Mathew, D. Sarkar, S. Smith, S. Saha, R. Garcia, R. Stout, A. Gurmu, M. Ainom, E. Onyegam, D. Xu, D. Jawarani, U. Das, S. Banerjee, J. Fossum, "A low-Cost Kerfless Thin Exfoliated Si Solar Cell Technology." Presented at 38th IEEE PVSC 2012, Austin, TX.

840. L. Mathew, R. Rao, D. Sarkar, S. Banerjee, D. Jawarani, J. Fossum, R. Garcia, S. Smith, D. Xu, M. Ainom, E. Onyegam, R. Stout, S. Saha, A. Gurmu, A Novel Low-Cost ~25μm-Thin Monocrystalline Silicon Bifacial Solar Cell Technology with Flexible and Rigid Form-Factor and Electroplated Contacts." Presented at 38th IEEE PVSC 2012, Austin, TX.

841. Integration and Reliability of Ultrathin Silicon Solar Cells and Modules Fabricated using SOM Technology, D. Jawarani, D. Xu, R. S. Smith, R. S. A. Rao, L. Mathew, S. Saha, D. Sarkar, C. Vass, S. K. Banerjee, P. S. Ho, 38th IEEE PVSC, June, 2012.

842. Integration and Reliability of Thin Silicon Solar Cells and Modules Fabricated using SOM® Technology, D. Jawarani, D. Xu, R. S. Smith, S. Saha, R. S. A. Rao, L. Mathew, D. Sarkar, E. U. Onyegam, M. Ainom, R. S. Garcia, A. Gurmu, R. S. Stout, C. Vass, S. K. Banerjee, P. S. Ho, J. G. Fossum, 27th EU PVSEC, September, 2012

843. Electrical and physical characteristics for crystalline atomic layer deposited beryllium oxide thin film on Si and GaAs substrates,Yum J. H.; Akyol T.; Lei M.; et al.Banerjee SK, THIN SOLID FILMS Volume: **520** Issue: **7** Pages: 3091-3095, JAN 31 2012

844. Theoretical approach to evaluating beryllium oxide as a gate dielectric considering electromagnetics and thermal stability, Yum J. H.; Bersuker G.; Oh J.; et al. Banerjee SK, APPLIED PHYSICS LETTERS Volume: 100 Issue: 5 Article Number: 053501, JAN 30 2012

845. A path-sum Monte Carlo approach for many-electron systems within a tight-binding basis, David J. K.; Register L. F.; Banerjee S. K. Source: JOURNAL OF COMPUTATIONAL ELECTRONICS Volume: 11 Issue: 2 Pages: 172-181, JUN 2012
846. Band offsets of atomic layer deposited Al2O3 and HfO2 on Si measured by linear and nonlinear internal photoemission, Lei M.; Yum J. H.; Banerjee S. K.; et al. Source: PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS Volume: 249 Issue: 6 Pages: 1160-1165, JUN 2012
847. Spin-transfer-torque switching in spin valve structures with perpendicular, canted, and in-plane magnetic anisotropies, Roy U.; Seinige H.; Ferdousi F.; et al, Banerjee SK, JOURNAL OF APPLIED PHYSICS Volume: 111 Issue: 7 Article Number: 07C913, APR 1 2012
848. Semiclassical Monte Carlo Analysis of Graphene FETs, David J. K.; Register L. F.; Banerjee S. K., IEEE TRANSACTIONS ON ELECTRON DEVICES Volume: 59 Issue: 4 Pages: 976-982, APR 2012
849. Spectroscopic evaluation of band alignment of atomic layer deposited BeO on Si(100), Lei Ming; Yum J. H.; Price J.; et al., Banerjee SK, APPLIED PHYSICS LETTERS Volume: 100 Issue: 12 Article Number: 122906, MAR 19 2012
850. Density functional theory studies of interactions of graphene with its environment: Substrate, gate dielectric and edge effects, Jadaun, Priyamvada, Sahu, Bhagawan R, Register, Leonard F. Banerjee, Sanjay K, SOLID STATE COMMUNICATIONS Volume: 152 Issue: 15 Special Issue: SI Pages: 1497-1502, AUG 2012
851. D. Akinwande, K. N. Parrish, M. E. Ramon, L. Tao, S. Banerjee, "Wafer-scale graphene technology and GHz nanoelectronics," International Semiconductor Device Research Symposium, 2011. (**Invited**)
852. Ramon, K. N. Parrish, J. Lee, C. W. Magnuson, L. Tao, R. S. Ruoff, S. K. Banerjee, D. Akinwande, "Graphene Frequency Doubler with Record 3GHz Bandwidth and the Maximum Conversion Gain Prospects," IEEE MTT-S International Microwave Symposium, June 2012
853. M. Ramon, K. N. Parrish, Sk. F. Chowdhury, C. W. Magnuson, H. C. P. Movva, R. S. Ruoff, S. K. Banerjee, D. Akinwande, "3GHz Graphene Frequency Doubler on Quartz Operating Beyond the Transit Frequency," IEEE Transactions on Nanotechnology, 10.1109/TNANO.2012.2203826.
854. M. Ramon, K. N. Parrish, Sk. F. Chowdhury, C. W. Magnuson, H. C. P. Movva, R. S. Ruoff, S. K. Banerjee, D. Akinwande, "3GHz Graphene Frequency Doubler on Quartz Operating Beyond the Transit Frequency," Semiconductor Research Corporation TECHCON, 2012.
855. H. C. P. Movva, M. E. Ramon, C. M. Corbet, Sk. F. Chowdhury, G. Carpenter, E. Tutuc, S. K. Banerjee, "Self-aligned graphene field-efffect transistors with chemically doped source/drain access regions," Semiconductor Research Corporation TECHCON, 2012.
856. H. C. P. Movva, M. E. Ramon, C. M. Corbet, Sk. F. Chowdhury, G. Carpenter, E. Tutuc, S. K. Banerjee, "Graphene field-effect transistors with self-aligned spin-on-doping of source/drain access regions," 70th Device Research Conference, June 2012.
857. K. N. Parrish, M. E. Ramon, S. K. Banerjee, D. Akinwande, "A Compact Model for Graphene FETs for Linear and Non-linear Circuits," 17th International Conference on Simulation of Semiconductor Processes and Devices, September 2012.
858. J. Chang, L. F. Register, S. K. Banerjee, "Atomistic Quantum Transport Simulation of Topological Insulator Bi2Se3Tunnel FETs", SISPAD, Sep 5-7 , 2012, Denver, CO, U.S.A.
859. J. Chang, L. F. Register, S. K. Banerjee, "Possible Applications of Topological Insulator for Tunnel FETs", DRC, Jun 18-20 , 2012, University Park, PA, U.S.A.
860. J. Chang, L. F. Register, S. K. Banerjee, "Computational Study of Tunnel FETs Based on Topological Insulator Bi2Se3", Techcon, Sep 10-11, 2012, Austin, TX. U.S.A.
861. Self-aligned graphene field-effect transistors with chemically doped source/drain access regions, Hema C.P. Movva, Michael E. Ramón, Chris M. Corbet, Sk. Fahad Chowdhury, Gary Carpenter, Emanuel Tutuc and Sanjay K. Banerjee, Techcon, Sep 10-11, 2012, Austin, TX. U.S.A.

862. D.Reddy, F.Register, S.Banerjee, Bilayer Graphene Vertical TFET, Techcon, Sep 10-11, 2012, Austin, TX. U.S.A.
863. D. Reddy, P. Jadaun, A. Valsaraj, L. F. Register, S. K. Banerjee,"Time Dependent Quantum Transport in Graphene," SISPAD 2012, Sept. 5 - Sept. 7, 2012.
864. Jadaun, Hari P. Nair, Seth R. Bank, S. K. Banerjee,"Ab-initio study of dilute nitride substitutional and split-interstitial impurities in gallium antimonide (N-GaSb)" APS March Meeting, Feb 27 - Mar 2,2012
865. S. Kim, I. Jo, D. Dillen, B. Fallahazad, D. Ferrer, Z. Yao, S. K. Banerjee, E. Tutuc, “"Direct Measurement of the Fermi Energy in Graphene Using a Double Layer Structure"”, APS March Meeting Conference, Boston (2012).
866. S.Gucchait, S. K. Banerjee, R.Orbach, “Spinglass Dynamics in FM Ge:Mn”, APS March Meeting Conference, Boston (2012)
867. J.. Mantey, W. Hsu, M. Jamil, E. U. Onyegam, E Tutuc, and S. K. Banerjee, “Germanium nMOSFETs with GeO2 Passivation and n+/p Junctions Formed by Spin-on Dopants”, Inter. SiGe Tech. and Dev. Meeting (ISTDM) Session 3.5, June 4-6, 2012 (2012).
868. D.Reddy, F.Register, S.Banerjee, Bilayer Graphene Vertical TFET, DRC, 2012.
869. D. Koh, J. H. Yum, T. Akyol, D. A. Ferrer, M. Lei, Todd. W. Hudnall, M. C. Downer, C. W. Bielawski, R.Hill, G. Bersuker and S. K. Banerjee, Novel atomic layer deposited thin film beryllium oxide for InGaAs MOS Devices, IRPM, 2012.
870. S. K. Banerjee, L. F. Register, E. Tutuc, D. Reddy, S. Kim, D. Basu, C. Corbet, L. Colombo, G. Carpenter, A. H. MacDonald, “Novel Double Layer Graphene Transistors-Bilayer Pseudospin FETs and 2D-2D Tunnel FETs”, 70th Device Research Conference (2012) (**invited**).
871. Leonard F. Register, D. Reddy, X. Mau, W. Jung, I. Sodemann, D. Pesin, A. Hassibi, A. H. MacDonald, and S. K. Banerjee, “Bilayer PseudoSpin Field Effect Transistor (BiSFET): Concepts and Critical Issues for Realization,” 221st ECS Meeting - Seattle, Washington, May 6 - May 10, 2012; ECS Transactions Vol. 45, No. 4, pp 3-14,**Invited**
872. Leonard F. Register and Sanjay K. Banerjee, “Southwest Academy of Nanotechnology (SWAN),” The Eight International Nanotechnology Conference on Communication and Cooperation, Tsukuba, Japan, May 8-11, 2012, **Invited**
873. Sanjay. Banerjee, Leonard F. Register, Emanuel Tutuc, Dharmendar Reddy, Dipanjan Basu, Mohammad Mehedi Hasan, and Hui Chen, “Tunnel FETs,” SEMATECH TFET Workshop, Austin Texas, **Invited**
874. S.Banerjee, SWAN, GOMAC Las Vegas, March 2012, **Invited**
875. Novel Transistor Concepts Based on 2D Systems- Graphene and Topological Insulators, Sanjay Banerjee and Frank Register, NSF/AFOSR 2D Workshop, Washington DC, May 2012, **Invited**.

A. H. MacDonald, D. Pesin, I. Sodemann, L. F. Register, and S. K. Banerjee, “Physical Properties of Bilayer Exciton Condensates,” 221st ECS Meeting - Seattle, Washington, May 6 - May 10, 2012, **Invited**

876. B.Doering and S.Banerjee, Beyond CMOS, SPIE Lithography Meeting, Williamsburg, VA, June 2012, **Invited**.
877. Electron Transport and Strain Mapping in Ge-Si_xGe_{1-x} Core-Shell Nanowire Heterostructures, D. C. Dillen, J. Nah, K. M. Varahramyan, S. K. Banerjee, and E. Tutuc, ECS Meeting, 2012, **Invited**
878. ETB-QW InAs MOSFET with scaled body for improved electrostatics, T.Kim, et. al., IEDM, 2012
879. S.Banerjee, …., BiSFET, SISC, Dec. 2012, **Invited**.
880. D. Jawarani, R.S. Smith, S. Saha, R.A. Rao, L. Mathew, M. Ainom, R. Garcia, A. Gurmu, R. Stout & C. Vass, D. Xu, E.U. Onyegam, S. Banerjee & P.S. Ho, , D. Sarkar & J.G. Fossum, Integration and Reliability of Thin Silicon Solar Cells and Modules Fabricated Using SOM® Technology, EU PVSC, 2012, Germany.

881. L. Mathew, R.-A. Rao, S. Saha, S. Smith, R. Garcia, R. Stout, A. Gurmu, M. Ainom, D. Xu & D. Jawarani, D. Sarkar & J. Fossum, E. Onyegam & S. Banerjee, A Novel Low Cost ~25µm Thin Monocrystalline Silicon Bi-Facial Solar Cell Technology with Flexible and Rigid Form-Factors and Electroplated Contacts, EU PVSC, 2012, Germany.

882. Yujia Zhai, Marylene Palard, Leo Mathew, Muhammad Mustafa Hussain, C. Grant Willson, Emanuel Tutuc and Sanjay K. Banerjee, Fabrication of Three-Dimensional MIS Nano-Capacitor Based on Nanoimprinted Single Crystal Silicon Nanowire Arrays, Micro and Nanosystems, 2012, 4

883. Self-aligned graphene field-effect transistors with polyethyleneimine doped source/drain access regions, Movva, HCP ; Ramon, ME ; Corbet, CM ; Sonde, S ; Chowdhury, SF ; Carpenter, G ; Tutuc, E ; Banerjee, SK , APPLIED PHYSICS LETTERS Volume: 101 Issue: 18, OCT 29 2012

884. Zhai, Yujia; Mathew, Leo; Rao, Rajesh; Xu, Dewei; Banerjee, Sanjay, "High Performance Flexible Thin-Film Transistors Exfoliated from Bulk Wafer," Nano Letters, 2012. Also **Best Paper** at DARPA conference.

885. Mohamed M Hilali, Shuqiang Yang, Mike Miller, Frank Xu,Sanjay Banerjee and S V Sreenivasan, Enhanced photocurrent in thin-film amorphous silicon solar cells via shape controlled three-dimensional nanostructures, Nanotechnology 23 405203, Sept. 2012.

886. First principles study of Stage-1 graphene intercalates, IBr and ICl, PRIYAMVADA JADAUN, LEONARD F. REGISTER, SANJAY K. BANERJEE, APS March Meet, 2013.

887. Topological Classification of Crystalline Insulators with Point Group Symmetry, DI XIAO, PRIYAMVADA JADAUN, QIAN NIU, SANJAY BANERJEE, APS March Meet, 2013.

888. Growth of topological insulators on Si(111)-(7_7) surfaces by molecular beam epitaxy, ANUPAM ROY, SUSHANT SONDE, SAMARESH, GUCHHAIT, SANJAY BANERJEE, APS March Meet, 2013.

889. A study of capping layers for sulfur monolayer doping on III-V junctions, Yum, JH ; Shin, HS ; Hill, R ; Oh, J ; Lee, HD ; Mushinski, RM ; Hudnall, TW ; Bielawski, CW ; Banerjee, S. K.; Loh, WY ; Wang, WE ; Kirsch, P, APPLIED PHYSICS LETTERS Volume: 101 Issue: 25: DEC 17 2012

890. Germanium metal-semiconductor-metal photodetectors evanescently coupled with upper-level silicon oxynitride dielectric waveguides, Cervantes-Gonzalez, JC ; Ahn, D ; Zheng, XG ; Banerjee, Sanjay K.; Jacome, AT ; Campbell, JC ; Zaldivar-Huerta, IE, APPLIED PHYSICS LETTERS Volume: 101 Issue: 26: DEC 24 2012

891. Topological insulator Bi2Se3 thin films as an alternative channel material in metal-oxide-semiconductor field-effect transistors, Chang, Jiwon; Register, Leonard F.; Banerjee, Sanjay K, JOURNAL OF APPLIED PHYSICS Volume: 112 Issue: 12: DEC 15 2012

892. Uniform Wafer-Scale Chemical Vapor Deposition of Graphene on Evaporated Cu (111) Film with Quality Comparable to Exfoliated Monolayer, Tao, L; Lee, J ; Holt, M ; Chou, H ; McDonnell, SJ ; Ferrer, DA ; Babenco, MG ; Wallace, RM] ; Banerjee, Sanjay K.; Ruoff, RS ; Akinwande, D, JOURNAL OF PHYSICAL CHEMISTRY C Volume: 116 Issue: 45 Pages: 24068-24074: NOV 15 2012.

893. Fast and slow transient charging in various III-V field-effect transistors with atomic-layer-deposited-Al2O3 gate dielectric, Ramon, ME ; Akyol, T; Shahrjerdi, D; Young, CD; Cheng, JL ; Register, LF; Banerjee, Sanjay K, APPLIED PHYSICS LETTERS Volume:102 Issue:2 Article Number:022104, JAN 14 2013

894. Exfoliated, thin, flexible germanium heterojunction solar cell with record FF=58.1%, Onyegam, EU; Sarkar, D; Hilali, M; Saha, S; Rao, RA; Mathew, L; Jawarani, D; Mantey, J; Ainom, M; Garcia, R; James, W;Banerjee, S. K., SOLAR ENERGY MATERIALS AND SOLAR CELLS Volume:111 Pages:206-211 APR 2013

895. Single heterojunction solar cells on exfoliated flexible similar to 25 mu m thick mono-crystalline silicon substrates, Saha, S; Hilali, MM; Onyegam, EU;Sarkar, D; Jawarani, D; Rao, RA; Mathew, L; Smith, RS; Xu, DW; Das, UK; Sopori, B; Banerjee, Sanjay K, APL, 2013
896. Two-dimensional weak anti-localization in Bi2Te3 thin film grown on Si(111)-(7x7) surface by molecular beam epitaxy, Roy, A; Guchhait, S; Sonde, S; Dey, R; Pramanik, T; Rai, A;Movva, HCP; Colombo, L; Banerjee, Sanjay K, APPLIED PHYSICS LETTERS Volume:102 Issue:16 Article Number:163118 APR 22 2013
897. Ultra-smooth epitaxial Ge grown on Si(001) utilizing a thin C-doped Ge buffer layer, Mantey, J; Hsu, W; James, J; Onyegam, EU; Guchhait, S;Banerjee, S. K., APPLIED PHYSICS LETTERS Volume:102 Issue:19 Article Number:192111 MAY 13 2013
898. Micromagnetic study of spin-transfer-torque switching of a ferromagnetic cross towards multi-state spin-transfer-torque based random access memory, Roy, U ; Pramanik, T; Tsoi, M; Register, LF;Banerjee, Sanjay K., JOURNAL OF APPLIED PHYSICS Volume:113 Issue:22 Article Number:223904 JUN 14 2013
899. Novel atomic layer deposited thin film beryllium oxide for InGaAs MOS Devices, Koh, D; Yum, JH; Akyol, T; Ferrer, DA; Lei, M Hudnall, TW;Downer, M; Bielawski, CW;Hill, R; Bersuker, G;Banerjee, S. K, 2012 INTERNATIONAL CONFERENCE ON INDIUM PHOSPHIDE AND RELATED MATERIALS (IPRM) Book Series:International Conference on Indium Phosphide and Related Materials Pages:163-166 2013
900. A Comparative Study of Gate First and Last Processes Using ALD Beryllium Oxide as an Interface Passivation Layer for Si MOSFETs, J. H. Yum, H. S. Shin, Ryan M. Mushinski, Todd. W. Hudnall, J. Oh, P. Kirsch, R. Jammy, R. J. W. Hill, W. Y. Loh, C. W. Bielawski, G. Bersuker, S. K. Banerjee, and W. Wang, VLSI TSA, 2013
901. A Novel Low-Cost Method for Fabricating Bifacial Solar Cells**,** S. Saha, R. A. Rao, L. Mathew, M. Ainom and S. K. Banerjee**,** PVSC, 2013
902. Amorphous/Crystalline Silicon Heterojunction Cells Realized via Remote Plasma Chemical Vapor Deposition: Influence of Hydrogen Dilution, RF power, and Sample Z-height Position, E. U. Onyegam, S. Saha, R. Rao, L. Mathew, M. Hilali, William James and S.K. Banerjee, PVSC 2013
903. ALD Gate Dielectrics for High Mobility and Tunnel Transistors J.Mantey, C.Corbet, F.Chowdhury, D.Koh, J.Yum, H.Movva, M.Ramon, D.Reddy, L.F.Register and S.K. Banerjee, MRS **Invited** talk, 2013
904. Interactions between two contacted graphene layers, C. Corbet, E,Tutuc, S.Banerjee, FCMN NIST 2013.
905. Intercalated bilayer graphene heterostructures towards the BISFET, H.Movva, P.Jadaun, F.Register and S.Banerjee, INC9, Germany, 2013
906. Design and verification of PECVD multilayer nanoscale PV device, S.Hajimirza, J. Howell, M.Holt, S.Saha, D. Akinwande and S.Banerjee, ASME HT 2013
907. Full band quantum transport simulation of MoS2 transistors, J.Chang, F.Register, S.Banerjee, DRC 2013
908. Novel Graphene Devices, C. Corbet, M. Ramon, H. Movva, D. Reddy, S.Kang, F.Chowdhury, D.Akinwande,E. Tutuc, F.Register and S. K. Banerjee, ECS **Invited**, Oct. 2013
909. Quantum Transport Simulation of Bilayer Pseudospin Field-Effect Transistor (BisFET) on Tightbinding Hartree-Fock Model, Xuehao Mou, Leonard F. Register, and Sanjay K. Banerjee, SISPAD, Scotland, 2013.
910. Comparison of Ballistic Transport Characteristics of Monolayer Transition Metal Dichalcogenides (TMDs) MX2 (M = Mo, W; X = S, Se, Te) n-MOSFETs, Jiwon Chang, Leonard F. Register, and Sanjay K. Banerjee, SISPAD 2013
911. Xuehao Mou, Leonard F. Register and Sanjay K. Banerjee, "Quantum Transport Simulations on the Feasibility of the Bilayer PseudoSpin Field Effect Transistor (BiSFET)", IEDM 2013, Washington, D. C., Dec. 2013

912. Sub-100 nm InGaAs Quantum-Well (QW) Tri-Gate MOSFETs with Al2O3/HfO2 (EOT < 1 nm) for Low-Power Logic Applications, T.-W. Kim, D.-H. Kim, D.H. Koh, H.M. Kwon, R.H. Baek, D. Veksler, C. Huffman, K. Matthews, S. Oktyabrsky, A. Greene, Y. Ohsawa, A. Ko, H. Nakajima, M. Takahashi, T. Nishizuka, H. Ohtake, S. K. Banerjee, S.H. Shin, D.-H. Ko, C. Kang, D. Gilmer, R.J.W. Hill, W. Maszara,C. Hobbs and P.D. Kirsch, IEDM 2013

913. Xuehao Mou, Dax M. Crum, Dipanjan Basu, Leonard F. Register, Sanjay K. Banerjee, "On the Possibility of Sub-k_BT/q Switching in BiSFETs: Quantum Transport Simulations in Graphene Bilayers with Many-body Exchange Interactions", Techcon 2013, Austin, Texas, Sep. 2013

914. Tanmoy Pramanik, U.Roy, M.Tsoi, Leonard F. Register, Sanjay K. Banerjee, "Micromagnetic study of spin–transfer-torque switching of a ferromagnetic cross towards multi-state spin-transfer-torque based random access memory", Techcon 2013, Austin, Texas, Sep. 2013

915. Chris Corbet, S. McDonnell, S. Sonde, B. Fallahazad, S. Larentis, D. Hinojos, R. Wallace, E. Tutuc, S.K. Banerjee, Fabrication and characterization of large arrays of graphene tunneling field effect transistors (TFETs), Techcon 2013, Austin, Texas, Sep. 2013

916. Topological classification of crystalline insulators with space group symmetry, Jadaun, P, Xiao, D ; Niu, Q; Banerjee, Sanjay K., PHYSICAL REVIEW B Volume:88 Issue:8 Article Number:085110, :AUG 8 2013

917. Strained-Si/strained-Ge type-II staggered heterojunction gate-normal-tunneling field-effect transistor, William Hsu, Jason Mantey, Leonard F. Register, and Sanjay K. Banerjee, APL, 27 August 2013

918. Theory and synthesis of bilayer graphene intercalated with ICl and IBr for low power device applications, Priyamvada Jadaun, Hema C. P. Movva, Leonard F. Register, and Sanjay K. Banerjee, J. Appl. Phys. 114, 063702 (2013); Aug. 2013.

919. Atomistic full-band simulations of monolayer MoS2 transistors, Chang, Jiwon; Register, Leonard F.; Banerjee, Sanjay K, APPLIED PHYSICS LETTERS Volume: 103 Issue: 22, NOV 25 2013

920. Low interface defect density of atomic layer deposition BeO with self-cleaning reaction for InGaAs metal oxide semiconductor field effect transistors H. S. Shin, J. H. Yum, D. W. Johnson, H. R. Harris, Todd. W. Hudnall, J. Oh, P. Kirsch, W.-E. Wang, C. W.Bielawski, S. K. Banerjee, J. C. Lee, and H. D. Lee, Applied Physics Letters 103, 223504 (2013)

921. Reliability study of methods to suppress boron transient enhanced diffusion in high-k/metal gate Si/SiGe channel pMOSFETs, Park, MS, Kim, Y; Lee, KT Kang, CY; Min, BG; Oh, J; Majhi, P; Tseng, HH;; Banerjee, Sanjay K.; Lee, JS; Jammy, R; Jeong, YH, MICROELECTRONIC ENGINEERING Volume:112 Special Issue:SI Pages:80-83, DEC 2013

922. Magnetic ordering of implanted Mn in HOPG substrates, Guchhait, S; Ohldag, H; Arenholz, E; Ferrer, DA; Mehta, A; Banerjee, Sanjay K., PHYSICAL REVIEW B Volume:88 Issue:17 NOV 27 2013

923. Evidence for hydrogen two-level systems in atomic layer deposition oxides, Khalil, MS; Stoutimore, MJA; Gladchenko, S ; Holder, AM; Musgrave, CB; Kozen, AC; Rubloff, G; Liu, YQ;Gordon, RG; Yum, JH; Banerjee, S. K.; Lobb, CJ; Osborn, KD, APPLIED PHYSICS LETTERS Volume:103 Issue:16, OCT 14 2013

924. The Bilayer Pseudospin Field-Effect Transistor: Overview and Quantum Transport Simulation, Leonard F. Register, Xuehao Mou, Sanjay K. Banerjee, ECS Orlando, 2014,**Invited**

925. Improving the electrical characteristics of graphene field effect transistors by hexamethyldisilazane interaction SK. CHOWDHURY, SOMAYYEH RAHIMI, SUSHANT SONDE, LI TAO, SANJAY BANERJEE, DEJI AKINWANDE, APS March Meeting 2014

926. Electronic and optical properties of GaSb:N from first principles, PRIYAMVADA JADAUN, HARI NAIR, VINCENZO LORDI, SETH BANK, SANJAY BANERJEE, APS March Meeting 2014

927. Transfer-free growth of atomically thin hexagonal boron nitride, SUSHANT SONDE, NING LU, MOON KIM, LUIGI COLOMBO, SANJAY K. BANERJEE, APS March Meeting 2014
928. Novel Low Power Transistors in 2D Dirac Materials: Graphene and Topological Insulators, Sanjay Banerjee and Leonard Frank Register, NanoGiga, ASU**, Plenary talk**, March 2014
929. Novel Low Power Transistors in 2D Dirac Materials: Graphene and Topological Insulators, Sanjay Banerjee and Leonard Frank Register, ISVLSI**, Florida, Plenary talk**, July 2014
930. Graphene Transfer Using Sacrificial PIB Layer onto 1nm Al2O3/TiOPc/Graphene Gate Stacks, Jun Hong Park, Hema Chandra Prakash Movva, Erich W. Kinder, Hao Lu, Deji Akinwande, Iljo Kwak, Susan K. Fullerton, Sanjay K.Banerjee, Andrew Kummel, MRS 2014
931. Characterization of ALD Beryllium Oxide as a Potential High-k Gate Dielectric for Low-Leakage AlGaN/GaN MOSHEMTs , Johnson, Derek W.; Yum, Jung Hwan; Hudnall, Todd W.; … SK.Banerjee, R.Harris, JOURNAL OF ELECTRONIC MATERIALS Volume: 43 Issue: 1 Pages: 151-154,JAN 2014
932. Improved Cleaning Process for Textured similar to 25 mu m Flexible Mono-Crystalline Silicon Heterojunction Solar Cells with Metal Backing , Saha, Sayan; Hilali, Mohamed M.; Onyegam, Emmanuel U.; …S.K.Banerjee, ECS JOURNAL OF SOLID STATE SCIENCE AND TECHNOLOGY Volume: 3 Issue: 7 Pages: Q142-Q145 Published: 2014
933. Atomic layer etching of BeO using BCl3/Ar for the interface passivation layer of III-V MOS devices, Min, K. S.; Kang, S. H.; Kim, J. K…; Bielawski, CW; Banerjee, S. K. ; Bersuker, G ; Jhon, MS, MICROELECTRONIC ENGINEERING, Volume: 114, Pages: 121-125, FEB 2014
934. Impact of contact and access resistances in graphene field-effect transistors on quartz substrates for radio frequency applications, Ramon, ME; Movva, HCP ; Chowdhury, SF; Parrish, KN; Rai, A; Magnuson, CW ; Ruoff, RS; Akinwande, D; Banerjee, SK, APPLIED PHYSICS LETTERS, Volume: 104 (7), FEB 17 2014
935. Poly(methyl methacrylate) as a self-assembled gate dielectric for graphene field-effect transistors Sanne, A.; Movva, H. C. P.; Kang, S.; …SK Banerjee, APPLIED PHYSICS LETTERS Volume: 104 Issue: 8 FEB 24 2014
936. Ballistic performance comparison of monolayer transition metal dichalcogenide MX2 (M = Mo, W; X = S, Se, Te) metal-oxide-semiconductor field effect transistors, Chang, Jiwon; Register, Leonard F.; Banerjee, Sanjay K. JOURNAL OF APPLIED PHYSICS Volume: 115 Issue: 8 Article Number: 084506 FEB 28 2014
937. Atomistic simulation of the electronic states of adatoms in monolayer MoS2, Chang, Jiwon; Larentis, Stefano; Tutuc, Emanuel; L.Register, SK.Banerjee, APPLIED PHYSICS LETTERS Volume: 104 Issue: 14 Article Number: 141603 APR 7 2014
938. Realization of dual-heterojunction solar cells on ultra-thin similar to 25 mu m, flexible silicon substrates, Onyegam, Emmanuel U.; Sarkar, Dabraj; Hilali, Mohamed M.; ....SK Banerjee, APPLIED PHYSICS LETTERS Volume: 104 Issue: 15 Article Number: 153902 APR 14 2014
939. L-g=100 nm In0.7Ga0.3As quantum well metal-oxide semiconductor field-effect transistors with atomic layer deposited beryllium oxide as interfacial layer, Koh, D.; Kwon, H. M.; Kim, T-W; …SK.Banerjee, APPLIED PHYSICS LETTERS Volume: 104 Issue: 16 Article Number: 163502 APR 21 2014
940. Investigation of atomic layer deposited beryllium oxide material properties for high-k dielectric applications, Koh, Donghyi; Yum, Jung-Hwan; Banerjee, Sanjay K.; et al, JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B Volume: 32 Issue: 3 Article Number: 03D117 MAY 2014
941. Micromagnetic simulations of spin-wave normal modes and the spin-transfer-torque driven magnetization dynamics of a ferromagnetic cross, Pramanik, Tanmoy; Roy, Urmimala; Tsoi, Maxim; L.Register, SK.Banerjee, JOURNAL OF APPLIED PHYSICS Volume: 115 Issue: 17 Article Number: 17D123 MAY 7 2014

942. Strong spin-orbit coupling and Zeeman spin splitting in angle dependent magnetoresistance of Bi2Te3, Dey, Rik; Pramanik, Tanmoy; Roy, Anupam; L.Colombo, F.Register, SK.Banerjee, APPLIED PHYSICS LETTERS Volume: 104 Issue: 22 Article Number: 223111, JUN 2 2014

943. Improvement of graphene field-effect transistors by hexamethyldisilazane surface treatment, Sk. Fahad Chowdhury, Sushant Sonde, Somayyeh Rahimi, Li Tao, Sanjay Banerjee and Deji Akinwande, Appl. Phys. Lett. 105, 033117, July 2014.

944. The Bilayer Pseudospin Field-Effect Transistor: Overview and Quantum Transport Simulation,Leonard F. Register, Xuehao Mou, and Sanjay K. Banerjee, ECS 2014 **Invited.**

945. Effect of HfO2 and Al2O3 on monolayer MoS2 electronic structure, A. Valsaraj, J. Chang, L. F. Register, and S. K. Banerjee, Dev. Res. Conf. 2014.

946. Intra- and Inter-layer Current Flow within Exciton Condensate in Bilayer Graphene Systems, Xuehao Mou, Leonard F. Register and Sanjay K. Banerjee, Int.Conf. Phys. Semi. Austin, TX, Aug. 2014.

947. Proposal of a multi-state memory using voltage controlled magnetic anisotropy of a cross-shaped ferromagnet, Tanmoy Pramanik, Urmimala Roy, Nima Asoudegi, Leonard F. Register and Sanjay K. Banerjee, Int.Conf. Phys. Semi. Austin, TX, Aug. 2014.

948. Characteristics of Cerium Oxide Based Resistive Random Access Memories, Cheng-Chih Hsieh, Anupam Roy, Amritesh Rai, Sanjay Banerjee, Int.Conf. Phys. Semi. Austin, TX, Aug. 2014.

949. Oxidized titanium as a graphene gate dielectric and its conduction mechanisms, Chris Corbet, Connor McClellan, Kyoungwhan Kim, Sushant Sonde, Emanuel Tutuc, Sanjay Banerjee, Int.Conf. Phys. Semi. Austin, TX, Aug. 2014.

950. DFT Study of Effect of HfO2 on Monolayer MoS2, Amithraj Valsaraj, Jiwon Changb, Leonard F. Registera, and Sanjay K. Banerjee, Int.Conf. Phys. Semi. Austin, TX, Aug. 2014.

951. Evidence of Strong Spin-Orbit Coupling & Effects of Zeeman Spin Splitting in Angle-Dependent Anisotropic Magnetoresistance of Topological Insulator Bi_2Te_3 Thin Film, Rik Dey, Tanmoy Pramanik, Anupam Roy, Amritesh Rai, Samaresh Guchhait, Sushant S Sonde, Hema CP Movva, Luigi Colombo, Leonard F Register and Sanjay K Banerjee, Int.Conf. Phys. Semi. Austin, TX, Aug. 2014.

952. Numeric Technique for Pauli-Exclusion Principle in Monte Carlo Simulation, Dax M. Crum, A. Valsaraj, J.K. David, L. F. Register, and S. K. Banerjee, Int.Conf. Phys. Semi. Austin, TX, Aug. 2014.

953. Quantum-Corrected Semi-Classical Ensemble Monte Carlo Simulator for Nano-Scale III-V $In_{0.53}Ga_{0.47}As$ Tri-Gate FinFET, Dax M. Crum, A. Valsaraj, J.K. David, B. Sahu, Z. Krivokapic, L. F. Register, and S. K. Banerjee, Int.Conf. Phys. Semi. Austin, TX, Aug. 2014.

954. Oxidized Titanium as a Graphene Gate Dielectric and Its Conduction Mechanisms, C.Corbet, E.Tutuc, S.Banerjee, SRC TECHCON, Sept. 2014 **(Best paper)**

955. Improving the Electrical Characteristics of Graphene Field-Effect Transistors by Hexamethyldisilazane Interaction, S.F. Chowdhury, S.Banerjee, D.Akinwande, SRC TECHCON, Sept. 2014

956. Device Applications of Exciton Condensates in Bilayer Graphene Systems, X.Mou, X.Wu, F.Register and S.Banerjee, SRC TECHCON, Sept. 2014

957. Self Assembled Ordered Phthalocyanine Monolayers on 2D Semiconductors for Subnanometer dielectric ALD Nucleation, Jun Hong Park, Iljo Kwak, Pabitra Choudhury, Kasra Sardashti, Hema Chandra Prakash, Sanjay Banerjee, Susan Fullerton§ Andrew C. Kummel, SRC TECHCON, Sept. 2014

958. Density-Functional-Theory-Based Study of Monolayer MoS2 on Oxide"A. Valsaraj, L.F. Register, S.K. Banerjee and J. Chang, SISPAD 2014, Japan.

959. Semi-Classical Ensemble Monte Carlo Simulator Using Innovative Quantum Corrections for Nano-Scale n-Channel FinFETs" D.M. Crum, A. Valsaraj, L.F. Register, and S.K. Banerjee, SISPAD 2014, Japan.
960. Interplay among Bilayer PseudoSpin Field-Effect Transistor (BiSFET) Performance, BiSFET Scaling and Condensate Strength", X. Mou, L.F. Register, and S.K. Banerjee, SISPAD 2014, Japan.
961. Leonard F. Register, Urmimala Roy, Rik Dey, Tanmoy Primanik, Jiwon Chang* and Sanjay K. Banerjee, "Topological insulators in electronic and spintronic applications," Workshop on Innovative Nanoscale Devices and Systems (WINDS) 2014, Big Island, Hawaii, 12/1/2014-12/5/2014. (**Invited talk**)
962. Light trapping in ultrathin 25 mu m exfoliated Si solar cells , Hilali, Mohamed M.; Saha, Sayan; Onyegam, Emmanuel; Rao, Rajesh; Mathew, Leo; Banerjee, SK, APPLIED OPTICS Volume: 53 Issue: 27 Pages: 6140-6147 SEP 20 2014
963. Electronics based on two-dimensional materials, Fiori, Gianluca; Bonaccorso, Francesco; Iannaccone, Giuseppe; Palacios, TomasNeumaier, Daniel; Seabaugh, Alan; Banerjee, Sanjay K.; Colombo, L, NATURE NANOTECHNOLOGY Volume: 9 Issue: 10 Pages: 768-779 OCT 2014
964. Oxidized Titanium as a Gate Dielectric for Graphene Field Effect Transistors and Its Tunneling Mechanisms, Corbet, Chris M.; McClellan, Connor; Kim, Kyounghwan; Sonde, Sushant; Tutuc, Emanuel; Banerjee, SK ACS NANO Volume: 8 Issue: 10 Pages: 10480-10485 OCT 2014
965. Thin, relaxed Si1-xGex virtual substrates on Si grown using C-doped Ge buffers, Hsu, William; Mantey, Jason; Hsieh, Cheng-Chih; Roy, Anupam); Banerjee, SK, APPLIED PHYSICS LETTERS Volume: 105 Issue: 15 Article Number: 152107 OCT 13 2014
966. Vertical finFET with Salicide Contact for Potential Power Applications, Zhai, YJ ; Mathew, L ; Rao, R; Sreenivasan, SV; Willson, CG; Banerjee, SK ECS JOURNAL OF SOLID STATE SCIENCE AND TECHNOLOGY, Volume: 3 , Issue: 10 ,Pages: Q203-Q206; Published: 2014
967. High-Performance Vertical Gate-All-Around Silicon Nanowire FET With High-kappa/Metal Gate, Zhai, YJ; Mathew, L ; Rao, R ; Palard, M; Chopra, S; Ekerdt, JG; Register, LF; Banerjee, Sanjay K., IEEE TRANSACTIONS ON ELECTRON DEVICES, Volume: 61, Issue: 11, Pages: 3896-3900, DOI: 10.1109/TED.2014.2353658, NOV 2014
968. Magnetic and magneto-transport studies of MBE grown Cr2Te3 thin films with perpendicular magnetic anisotropy, Anupam Roy, Samaresh Guchhait, Rik Dey, Tanmoy Pramanik, Cheng-Chih Hsieh, Amritesh Rai, Sanjay Banerjee, Bulletin of the American Physical Society 60 (2015), APS March Meeting 2015 at San Antonio, Texas, USA (March 2-6, 2015)
969. Bilayer Graphene-Hexagonal Boron Nitride Heterostructure Negative Differential Resistance Interlayer Tunnel FETs, S.Kang…,F.Register, E.Tutuc, SK. Banerjee, APS Meeting, San Antonio, March 2015.
970. Resonant Tunneling in Double Bilayer Graphene Heterostructures, B.Fallahazad,… F.Register,SK. Banerjee, E.Tutuc, APS Meeting, San Antonio, March 2015.
971. Low temperature magnetoresistance studies in MBE grown topological insulator thin films, Rik Dey, Anupam Roy, Tanmoy Pramanik, Samaresh Guchhait, Sushant Sonde, Amritesh Rai, Sarmita Majumder, Bahniman Ghosh, Leonard Register, Sanjay Banerjee, Bulletin of the American Physical Society 60 (2015), APS March Meeting 2015 at San Antonio, Texas, USA (March 2-6, 2015)
972. Air stable doping of MoS2 FETs using TiOx sol-gel, Amritesh Rai, Rudresh Ghosh, Anupam Roy, Amithraj Valsaraj, Hema C P Movva, Sangwoo Kang, Emanuel Tutuc, Leonard Register, Sanjay Banerjee, Bulletin of the American Physical Society 60 (2015), APS March Meeting 2015 at San Antonio, Texas, USA (March 2-6, 2015)

973. Van der Waals epitaxy of Bismuth Telluro-Sulfide nanosheets and magnetotransport in devices, T.Trivedi… SK. Banerjee, APS Meeting, San Antonio, March 2015.
974. Ambipolar conduction in MoS_2/WSe_2 hetero-bilayers, H.Movva… SK. Banerjee, APS Meeting, San Antonio, March 2015.
975. Rhenium Disulfide Depletion-Load Inverter, C.McClellan…. E.Tutuc, SK. Banerjee, APS Meeting, San Antonio, March 2015.
976. Ultra Low Energy Switching of Ferromagnet with Perpendicular Anisotropy on Topological Insulator by Voltage Controlled Magnetic Anisotropy, B.Ghosh… F.Register, SK. Banerjee, APS Meeting, San Antonio, March 2015.
977. Magnetization switching of a nanomagnet by spin polarized surface states of a topological insulator, U.Roy….F.Register, SK. Banerjee, APS Meeting, San Antonio, March 2015.
978. Semiconducting Behavior, Schottky Barriers and Field Effect Transistors in Ultrathin Rhenium DiSulfide, C.Corbet… E.Tutuc, SK. Banerjee, APS Meeting, San Antonio, March 2015.
979. Gate-Tunable Resonant Tunneling in Double Bilayer Graphene Heterostructures, B. Fallahazad ;K. Lee; S. Kang; ..LF Regsiter, SK Banerjee and E.Tutuc, NANO LETTERS Volume: 15 Issue: 1 Pages: 428-433 Published: JAN 2015
980. Field Effect Transistors with Current Saturation and Voltage Gain in Ultrathin ReS2, Corbett, Chris M.; McClellan, Connor; Rai, Amritesh; E.Tutuc; SK Banerjee, ACS NANO Volume: 9 Issue: 1 Pages: 363-370 Published: JAN 2015
981. Comment on "Assessment of field-induced quantum confinement in heterogate germanium electron-hole bilayer tunnel field-effect transistor" [Appl. Phys. Lett. 105, 082108 (2014)], Hsu, William; Mantey, Jason; Register, Leonard F.; SK Banerjee, APPLIED PHYSICS LETTERS Volume: 106 Issue: 2 Article Number: 026102 Published: JAN 12 2015
982. Top-gated chemical vapor deposited MoS2 field-effect transistors on Si3N4 substrates, Sanne, A.; Ghosh, R.; Rai, A.; …. SK Banerjee, APPLIED PHYSICS LETTERS Volume: 106 Issue: 6 Article Number: 062101 Published: FEB 9 2015
983. Air Stable Doping and Intrinsic Mobility Enhancement in Monolayer Molybdenum Disulfide by Amorphous Titanium Suboxide Encapsulation, Rai, Amritesh; Valsaraj, Amithraj; Movva, Hema C. P.; … LF Register, E. Tutuc, SK Banerjee, NANO LETTERS Volume: 15 Issue: 7 Pages: 4329-4336 Published: JUL 2015
984. On the Electrostatic Control of Gate-Normal-Tunneling Field-Effect Transistors, Hsu, William; Mantey, Jason; Register, Leonard F.; SK. Banerjee, IEEE TRANSACTIONS ON ELECTRON DEVICES Volume: 62 Issue: 7 Pages: 2292-2299 Published: JUL 2015
985. Perpendicular Magnetic Anisotropy and Spin Glass-like Behavior in Molecular Beam Epitaxy Grown Chromium Telluride Thin Films, Roy, Anupam; Guchhait, Samaresh; Dey, Rik; … SK. Banerjee, ACS NANO Volume: 9 Issue: 4 Pages: 3772-3779 Published: APR 2015
986. Bilayer Graphene-Hexagonal Boron Nitride Heterostructure Negative Differential Resistance Interlayer Tunnel FET, Kang, Sangwoo; Fallahazad, Babak; Lee, Kayoung; et al. Movva, Hema, Kim, Kyounghwan, Corbet, Chris M, Taniguchi, Takashi, Watanabe, Kenji, Colombo, Luigi, Register, Leonard F, Tutuc, Emanuel, Banerjee, Sanjay K., IEEE ELECTRON DEVICE LETTERS Volume: 36 Issue: 4 Pages: 405-407 Published: APR 2015
987. Magnetization switching of a metallic nanomagnet via current-induced surface spin-polarization of an underlying topological insulator, Roy, Urmimala; Dey, Rik; Pramanik, Tanmoy; LF. Register, SK. Banerjee, JOURNAL OF APPLIED PHYSICS Volume: 117 Issue: 16 Article Number: 163906 Published: APR 28 2015
988. Characteristics and mechanism study of cerium oxide based random access memories, Hsieh, Cheng-Chih; Roy, Anupam; Rai, Amritesh;… SK. Banerjee, APPLIED PHYSICS LETTERS Volume: 106 Issue: 17 Article Number: 173108 Published: APR 27 2015
989.

990. T. Pramanik, U Roy, L. F. Register, S. K. Banerjee, "Proposal of a multi-state memory using voltage controlled magnetic anisotropy of a cross-shaped ferromagnet," IEEE Trans. Nanotech. **14**, 883-888 (July 2015).

991. Radio Frequency Transistors and Circuits Based on CVD MoS2, Sanne, Atresh; Ghosh, Rudresh; Rai, Amritesh; Yogeesh, Maruthi Nagavalli; Shin, Seung Heon; Sharma, Ankit; Jarvis, Karalee; Mathew, Leo; Rao, Rajesh; Akinwande, Deji; Banerjee, Sanjay, Nano letters, Volume:15 Issue:8, Pages:5039-45, DOI:10.1021/acs.nanolett.5b01080 Published:2015-Aug-12 (Epub 2015 Jul 08)

992. Write error rate in spin-transfer-torque random access memory including micromagnetic effects, Urmimala Roy, David L. Kencke*, Tanmoy Pramanik, Leonard F. Register and Sanjay K. Banerjee, DRC Ohio, 2015

993. Cerium oxide based bipolar resistive switching memory with low operation voltage and high resistance ratio, Cheng-Chih Hsieh, Anupam Roy, Yao-Feng Chang, Amritesh Rai and Sanjay Banerjee, Proceedings of 73rd IEEE Device Research Conference at Ohio State University, Columbus, Ohio (June 21-24, 2015) Page 101-102.

994. MOD-TFET, W.Hsu… L.Register, SK.Banerjee, DRC Ohio, 2015

995. Gate Tunable Resonant Tunneling in Graphene Heterostruuctures, E.Tutuc, … L.Register, S.Banerjee, **Invited** Talk, DRC Ohio, 2015

996. Self. Assembled Ordered Phthalolocyanine Monolayers on 2D, J.Park, .. SK Banerjee, S.Fullerton, A.Kummel, **Invited**, MRS 2015

997. Monolayer Organic Films for Nucleation of ALD, J.Park, … S.Banerjee,.. A.Kummel, **Invited** SISC 2015

998. Radio Frequency Transistors and Circuits Based On CVD MoS_2, A.Sanne,… R,Rao, L.Mathew, D.Akinwande, SK.Banerjee, DRC Ohio, 2015

999. Interfacial-oxygen-vacancy mediated doping of MoS2 by high-K dielectrics, A Rai, A Valsaraj, H C P Movva, A Roy, E Tutuc, L F Register and S K Banerjee, Proceedings of 73rd IEEE Device Research Conference at Ohio State University, Columbus, Ohio (June 21-24, 2015) Page 189-190.

1000. Top-gated WSe_2 field-effect transistors with Pt contacts, Hema C. P. Movva, Amritesh Rai, Sangwoo Kang, Kyounghwan Kim, Samaresh Guchhait, Takashi Taniguchi, Kenji Watanabe, Emanuel Tutuc, and Sanjay K. Banerjee, **Best Paper**, DRC Ohio, 2015

1001. Interlayer Tunnel FETs and High Frequency FETs in Graphene and TMDs, **Invited talk**, (with H.Movva, S.Kang, A.Sanne, R.Ghosh, B.Fallahzad, A.Rai, E.Tutuc, L.F.Register), IEEE Photonics Conf. 2D Materials, July 2015.

1002. Interlayer Tunnel FETs and High Frequency FETs in Graphene and TMDs, **Invited talk**, (with H.Movva, S.Kang, A.Sanne, R.Ghosh, B.Fallahzad, A.Rai, E.Tutuc, L.F.Register), Int. Mat. Res. Conf. Cancun, Aug. 2015.

1003. Contact Engineering for Novel Transistors in 2D Materials, **Invited Talk** (with H.Movva, S.Kang, A.Sanne, R.Ghosh, B.Fallahzad, A.Rai, L.Colombo, D. Akinwande, E.Tutuc, L.F.Register), Metallization Conf. Austin, Sept. 2015.

1004. Interlayer Tunnel FETs, **Invited Talk**, (with Kang, Sangwoo; Fallahazad, Babak; Lee, Kayoung; et al. Movva, Hema, Kim, Kyounghwan, Corbet, Chris M, Taniguchi, Takashi, Watanabe, Kenji, Colombo, Luigi, Register, Leonard F, Tutuc, Emanuel, AVS, San Jose, Oct. 2015

1005. High Frequency Prospects of 2D Materials in Flex Nano, S.Park,….SK.Banerjee and D. Akinwande, IEDM 2015

1006. Spin transfer torque switching of ferromagnets on topological insulators, S. Majumder, S. Guchhait, R. Dey, L. F. Register, and S. K. Banerjee, SRC TECHCON, Austin, 2015

1007. Voltage Induced Switching of Nanomagnetism Topological Insulator MagnetoelectricDevices through Ruderman-Kittel-Kasuya-YosidaInteractions, B.Ghosh, R.Dey, LF. Register, SK.Banerjee, SRC TECHCON, Austin, 2015

1008. Synthesis and characterization of h-BN, graphene, and other 2D materials, Harry Chou, Rudresh Ghosh, Carl Magnuson, Ariel Ismach, Andrei Dolocan, Rodney Ruoff, and Sanjay Banerjee, SRC TECHCON, Austin, 2015

1009. Exploring nanoscale InGaAs and Si FinFETs using quantum-corrected semi-classical Monte Carlo, Dax M. Crum, A. Valsaraj, L. F. Register, S. K. Banerjee, B. Sahu, and Z. Krivokopic, SRC TECHCON, Austin, 2015, **BEST PAPER.**

1010. High Mobility WSe2 FETs with Platinum Contacts, Hema C.P. Movva, Amritesh Rai, Sangwoo Kang, Kyounghwan Kim, Emanuel Tutuc, and Sanjay K. Banerjee, SRC TECHCON, Austin, 2015

1011. Low Temperature Raman and Photoluminescence Measurements of MoS2 Layer Grown by Chemical Vapor Deposition, Barbara Nichols, R. Ghosh, S.K.Banerjee, AVS, Oct. 2015, San Jose.

1012. Defects Compensation and Refining Optical Luminescence in Organic/Transition Metal Dichalcogenide Heterostructure, J.H. Park, , A.M. Sanne, H.C.P. Movva, S. Vishwanath, Il Jo Kwak, UC San Diego, H. Xing, J. Robertson, S.K. Banerjee, A.C. Kummel, AVS, Oct. 2015, San Jose.

1013. Dielectrics Layer Deposition on 2D Materials by Functionalization with Polar Titanyl Phthalocyanine, JunHong Park, S. Fathipour, I.J. Kwak, UC San Diego, H.C.P. Movva, UT-Austin, S. Vishwanath, H. Xing, S.K. Banerjee, A.C. Seabaugh, A.C. Kummel, AVS, Oct. 2015, San Jose.

1014. Substitutional Doping of Metal Contact for Monolayer Transition Metal Dichalcogenides: a Density Functional Theory Based Study, Amithraj Valsaraj, Leonard F. Register, J.Chang, and Sanjay K. Banerjee, SISPAD 2015.

1015. Theoretical Study of the Spontaneous Electron-Hole Exciton Condensates between n and p-type MoS2 Monolayers, toward beyond CMOS Applications, Xian Wu, Xuehao Mou, Leonard F. Register, and Sanjay K. Banerjee, SISPAD, 2015.

1016. Impact of Gate Oxide Complex Band Structure on n-Channel III-V FinFETs, Dax M. Crum, Amithraj Valsaraj, Leonard F. Register, Sanjay K. Banerjee, Bhagawan Sahu, Zoran Krivakopic, Srinivasa Banna, Deepak Nayak, SISPAD 2015.

1017. Two Dimensional Electronics, **Invited Colloquium**, UT San Antonio, 2015.

1018. Two dimenisional Transistor, **Invited Colloquium**, CREOL, Univ. Central Florida, 2015.

1019. Double Bilayer Graphene Negative Differential Resistance Vertical Interlayer Tunnel FET, Sangwoo Kang, Babak Fallahazad, Kayoung Lee, Hema C. P. Movva, Chris M. Corbet, Kyounghwan Kim, Takashi Taniguchi, Kenji Watanabe, Luigi Colombo, Leonard F. Register, Emanuel Tutuc, Sanjay K. Banerjee, SRC TECHCON, Austin, 2015, **BEST PAPER**.

1020. Semiconducting Behavior and Logic in Ultrathin Rhenium Disulfide Field Effect Transistors, Chris M. Corbet, Connor McClellan, Amritesh Rai, Sushant Sudam Sonde, Emanuel Tutuc, and Sanjay K. Banerjee, SRC TECHCON, Austin, 2015, **BEST PAPER.**

1021. Quantum transport simulation of exciton condensate transport physics in a double-layer graphene system, X Mou, LF Register, AH MacDonald, SK Banerjee, Physical Review B 92 (23), 235413, 2015.

1022. Large-Area Monolayer MoS2 for Flexible Low-Power RF Nanoelectronics in the GHz Regime, HY Chang, MN Yogeesh, R Ghosh, A Rai, A Sanne, S Yang, N Lu,S.K.Banerjee, D.Akinwande, Advanced Materials, 2015.

1023. Theoretical and experimental investigation of vacancy-based doping of monolayer MoS2 on oxide, A Valsaraj, J Chang, A Rai, LF Register, SK Banerjee, 2D Materials 2 (4), 045009, 2015.

1024. Damage free Ar ion plasma surface treatment on In0. 53Ga0. 47As-on-silicon metal-oxide-semiconductor device, D Koh, SH Shin, J Ahn, S Sonde, HM Kwon, T Orzali, DH Kim, TW Kim, ...SK Banerjee, Applied Physics Letters 107 (18), 183509, 2015.

1025. In Situ Observation of Initial Stage in Dielectric Growth and Deposition of Ultrahigh Nucleation Density Dielectric on Two-Dimensional Surfaces, JH Park, HCP Movva, E Chagarov,

K Sardashti, H Chou, I Kwak, KT Hu, ...SK Banerjee, AC Kummel, Nano letters 15 (10), 6626-6633, 2015.

1026. High-Mobility Holes in Dual-Gated WSe2 Field-Effect Transistors, HCP Movva, A Rai, S Kang, K Kim, B Fallahazad, T Taniguchi, ...E.Tutuc, SK. Banerjee, ACS Nano 9 (10), 10402-104101, 2015.

1027. High-mobility surface states and conductance uctuations in Bismuth Telluro-Sul_de topological insulator devices TANUJ TRIVEDI, SUSHANT SONDE, HEMA C. P. MOVVA, SANJAY K. BANERJEE, APS March Meeting, Baltimore, 2016.

1028. Shubnikov-de Haas oscillations of high mobility holes in monolayer and bilayer WSe2: spin-valley locking, effective mass, and inter-layer coupling, BABAK FALLAHAZAD, HEMA CHANDRA PRAKASH MOVVA, KYOUNGHWAN KIM, STEFANO LARENTIS, TAKASHI TANIGUCHI, KENJI WATANABE, SANJAY K. BANERJEE, EMANUEL TUTUC, APS March Meeting, Baltimore, 2016.

1029. Effects of High-Energy X-Ray Radiation on MoS2 FETs, AMRITESH RAI, LAXMAN THOUTAM, WEI ZHANG, KIRAN KOVI, SANJAY BANERJEE, SAPTARSHI DAS, APS March Meeting, Baltimore, 2016.

1030. Effects of Strain on CVD-Grown Few-Layered Terrace Structures of MoS2, AMBER MCCREARY, R. GHOSH, M. AMANI, J. WANG, K.-A. DUERLOO, A. SHARMA, K. JARVIS, E. REED, A. DONGARE, S.K. BANERJEE, Univ. of Texas at Austin, M. TERRONES, R. NAMBURU, M. DUBEY, APS March Meeting, Baltimore, 2016.

1031. Beyond CMOS Devices in 2D Materials, **Invited Talk**, (with H.Movva, S.Kang, A.Sanne, R.Ghosh, B.Fallahzad, A.Rai, L.Colombo, D. Akinwande, E.Tutuc, L.F.Register), Mat. Res. Soc. Conf. Phoenix, April 2016.

1032. Electronics and Spintronics in Flatland, **Invited,** 2D Workshop Brookhaven National Lab, April 2016.

1033. Enhancing the performance of Ge pFETs using novel BF+ implanatation, W.Hsu…S.K.Banerjee, DRC 2016.

1034. Electronics and Spintronics in Flatland, **Invited**, 2D Workshop Argonne National Lab, June, 2016.

1035. Enhancing the performance of Ge pFETs using novel BF+ implanatation, W.Hsu…S.K.Banerjee, ISTDM Japan 2016.

1036. Insights into ITFET performance improvement, S.Kang,…LF Register, E.Tutuc, SK Banerjee, DRC 2016.

1037. RT gate tunable NDR in MoS2/hBN/WSe2 heterostructure, H.Movva…E.Tutuc, SK Banerjee. DRC 2016.

1038. Towards wafer scale monolayer MoS2 flexible low power RF for IoT, M.Yogeesh,…SK Banerjee, D.Akinwande, DRC 2016.

1039. Performance Factors for Interlayer Tunnel FETs Based on Layered Graphene-Hexagonal Boron Nitride-Graphene Heterostructures, Sangwoo Kang, Nitin Prasad, Hema C. P. Movva, Amritesh Rai, Kyounghwan Kim,Takashi Taniguchi, Kenji Watanabe, Leonard F. Register, Emanuel Tutuc, Sanjay K. Banerjee, SRC Techcon 2016.

1040. Weak antilocalization, electron-electron interaction and universal conductance uctuations in van der Waals epitaxially grown Bismuth Telluro-Sulfide topological insulators, Tanuj Trivedi, Sushant Sonde, Hema C. P. Movva, Anupam Roy, and Sanjay K. Banerjee, SRC Techcon **BEST PAPER**, 2016.

1041. Improved Contact Resistance and Current Saturation in ReSe2 Field Effect Transistors, Omar Mohammed, Amritesh Rai, Chris M. Corbet, Emanuel Tutuc, and Sanjay K. Banerjee, SRC Techcon 2016.

1042. 2D Materials Synthesis and Graphene Thinned Silicon Solar Cell, Harry Chou, Jae Hyun Ahn, Rudresh Ghosh, Ariel Ismach, Xiaohan Wang, Yufeng Hao, Luigi Colombo, Rodney Ruoff, and Sanjay K. Banerjee, SRC Techcon 2016.

1043. Full-Band Simulations of Single-Particle Resonant Tunneling in Transition Metal Dichalcogenide-Based Interlayer Tunneling Field-Effect Transistors, Xian Wu, Xuehao Mou, Leonard F. Register, and Sanjay K. Banerjee, SRC Techcon 2016.

1044. Write error rate of spin-transfer-torque random access memory including micromagnetic effects using rare event enhancement, Tanmoy Pramanik, Urmimala Roy, Leonard F. Register, and Sanjay K. Banerjee, SRC Techcon 2016.

1045. Air-stable ambipolar hBN encapsulatedmonolayerMoTe2 field effect transistors, S. Larentis, A. Rai, K. Kim, T. Taniguchi, K. Watanabe, S.K. Banerjee, and E. Tutuc, SRC Techcon 2016.

1046. Effect of Rotational Misalignment on Interlayer Coupling in a Graphene/hBN/Graphene van der Waal's heterostructure, Amithraj Valsaraj, Leonard F. Register and Sanjay K. Banerjee, SISPAD 2016.

1047. Full-Band Simulations of Single-Particle Resonant Tunneling in Transition Metal Dichalcogenide-Based Interlayer Tunneling Field-Effect Transistors, Xian Wu, Xuehao Mou, Leonard F. Register, and Sanjay K. Banerjee, SISPAD 2016.

1048. Phthalocyanine Monolayer Nucleation of Gate Oxide ALD on Single Layer Graphene and TMD Surfaces, Andrew Kummel,Jun Hong Park, Iljo Kwak, Evgeniy Chagarov, Hema Movva, Harry Chou, Sanjay K Banerjee, Sara Fathipour, Alan Seabaugh, Susan Fullerton, Suresh Vishwanath, Huili Grace Xing and Pabitra Choudhury, ECS Invited talk, 2016

1049. Performance and carrier transport analysis of In 0.7 Ga 0.3 As quantum-well MOSFETs with Al 2 O 3/HfO 2 gate stack, SW Son, JH Park, JM Baek, JS Kim, DK Kim, SH Shin, SK Banerjee, ...Solid-State Electronics 123, 63-67, 2016

1050. High Phosphorous Dopant Activation in Germanium Using Laser Spike Annealing, W Hsu, X Wang, F Wen, Y Wang, A Dolocan, T Kim, E Tutuc, S Banerjee, IEEE Electron Device Letters, vol. 9, 2016.

1051. First-principles simulation of oxygen vacancy migration in HfOx},CeOx, and at their interfaces for applications in resistive random-access memories, AA Bhatti, CC Hsieh, A Roy, LF Register, SK Banerjee, Journal of Computational Electronics 15 (3), 741-748, 2016

1052. The Positive Effects of Hydrophobic Fluoropolymers on the Electrical Properties of MoS2 Transistors, S Rahimi, R Ghosh, S Kim, A Dodabalapur, S Banerjee, D Akinwande, Applied Sciences 6 (9), 236, 2016

1053. Novel BF Implantation for High Performance Ge pMOSFETs, W Hsu, T Kim, H Chou, A Rai, SK Banerjee, IEEE Electron Device Lett., vol. 37, no. 8, p. 954, 2016

1054. Effects of Electrode Layer Band Structure on the Performance of Multilayer Graphene–hBN–Graphene Interlayer Tunnel Field Effect Transistors, S Kang, N Prasad, HCP Movva, A Rai, K Kim, X Mou, T Taniguchi, ...LF Register, E.Tutuc, SK Banerjee, Nano Letters 16 (8), 4975-4981, 2016

1055. Diffusion and recrystallization of B implanted in crystalline and pre-amorphized Ge in the presence of F, W Hsu, T Kim, A Benítez-Lara, H Chou, A Dolocan, A Rai, ...SK Banerjee, Journal of Applied Physics 120 (1), 015701, 2016

1056. High-frequency characteristics of L g= 60 nm InGaAs MOS high-electron-mobility-transistor (MOS-HEMT) with Al 2 O 3 gate insulator, TW Kim, JS Kim, DK Kim, SH Shin, WS Park, S Banerjee, DH Kim, Electronics Letters 52 (10), 870-872, 2016

1057. Improved contact resistance in ReSe2 thin film field-effect transistors, CM Corbet, SS Sonde, E Tutuc, SK Banerjee, Applied Physics Letters 108 (16), 162104, 2016.

1058. Large area chemical vapor deposition growth of monolayer MoSe 2 and its controlled sulfurization to MoS2, R Ghosh, JS Kim, A Roy, H Chou, M Vu, SK Banerjee, D Akinwande, Journal of Materials Research 31 (07), 917-922, 2016

1059. Black Phosphorous Thin-Film Transistor and RF Circuit Applications, SF Chowdhury, MN Yogeesh, SK Banerjee, D Akinwande,IEEE Electron Device Letters 37 (4), 449-451, 2016

1060. Write error rate of spin-transfer-torque random access memory including micromagnetic effects using rare event enhancement, U Roy, T Pramanik, LF Register, SK Banerjee, JAP, 2016
1061. Influence of electron-beam lithography exposure current level on the transport characteristics of graphene field effect transistors, S Kang, HCP Movva, A Sanne, A Rai, SK Banerjee, Journal of Applied Physics 119 (12), 124502, 2016
1062. Large magnetoresistance at room temperature in ferromagnet/topological insulator contacts, S Majumder, S Guchhait, R Dey, L Register, SK Banerjee, IEEE Trans. Nanotech, 2016
1063. Nanoscale doping of compound semiconductors by solid phase dopant diffusion, J Ahn, H Chou, D Koh, T Kim, A Roy, J Song, SK Banerjee, Applied Physics Letters 108 (12), 122107, 2016
1064. Voltage-Controlled Low-Energy Switching of Nanomagnets through Ruderman-Kittel-Kasuya-Yosida Interactions for Magnetoelectric Device Applications, B Ghosh, R Dey, LF Register, SK Banerjee, J. Appl. Phys. July 2016
1065. Nuclear reaction analysis for H, Li, Be, B, C, N, O and F with an RBS check, WA Lanford, M Parenti, BJ Nordell, MM Paquette, AN Caruso, ...SK,..Banerjee, Nuclear Instruments and Methods in Physics Research Section B: Beam, 2016
1066. Structural and Electrical Properties of MoTe2 and MoSe2 Grown by Molecular Beam Epitaxy, A Roy, HCP Movva, B Satpati, K Kim, R Dey, A Rai, T Pramanik, ...SK.Banerjee, ACS applied materials & interfaces 8 (11), 7396-7402, 2016
1067. Shubnikov–de Haas Oscillations of High-Mobility Holes in Monolayer and Bilayer WSe 2: Landau Level Degeneracy, Effective Mass, and Negative Compressibility, B Fallahazad, HCP Movva, K Kim, S Larentis, T Taniguchi, K Watanabe, ...SK Banerjee, E.Tutuc, Physical review letters 116 (8), 086601, 2016
1068. Effects of Uniaxial and Biaxial Strain on Few-Layered Terrace Structures of MoS2 Grown by Vapor Transport, A McCreary, R Ghosh, M Amani, J Wang, KAN Duerloo, A Sharma, ...SK Banerjee.. M.Dubey, ACS nano 10 (3), 3186-3197, 2016
1069. Van der Waals heterostructures with high accuracy rotational alignment, K Kim, M Yankowitz, B Fallahazad, S Kang, HCP Movva, S Huang, ..SK.Banerjee, E.Tutuc, Nano letters 16 (3), 1989-1995, 2016
1070. Weak antilocalization and universal conductance fluctuations in bismuth telluro-sulfide topological insulators, T Trivedi, S Sonde, HCP Movva, SK Banerjee, Journal of Applied Physics 119 (5), 055706, 2016.
1071. Novel Characterization Techniques for 2D Materials: Visualizing Inherent and External Defects, Rudresh Ghosh, S.K. Banerjee, D. Akinwande, University of Texas at Austin, Nashville, AVS, Nov. 2016
1072. Passivation of Transition Metal Chalcogenide Surface via Sulfur Layer to Enhanced Metal Contact, JunHong Park, A. Rai, I.J. Kwak, S. Bhattacharjee, K. Ganapathi, N. Bhat, S.K. Banerjee, A.C. Kummel, Nashville, AVS, Nov. 2016
1073. X. Mou, X. Wu, L. F. Register and S. K. Banerjee, "Device application of exciton condensates in layered materials," *EMN meeting on quantum 2016*, Phuket, Thailand, April 2016. (Invited talk)
1074. Methods for modeling non-equilibrium degenerate statistics and quantum-confined scattering in 3D ensemble Monte Carlo transport simulations, DM Crum, A Valsaraj, JK David, LF Register, SK Banerjee, Journal of Applied Physics 120 (22), 224301, 2016
1075. Multi-barrier inter-layer tunnel field-effect transistor, N Prasad, X Mou, LF Register, SK Banerjee, Electron Devices Meeting (IEDM), 2016
1076. A sub-1-volt analog metal oxide memristive-based synaptic device with large conductance change for energy-efficient spike-based computing systems, CC Hsieh, A Roy, YF Chang, D Shahrjerdi, SK Banerjee, Applied Physics Letters 109 (22), 223501, 2016

1077. Localization and interaction effects of epitaxial Bi2Se3 bulk states in two-dimensional limit, R Dey, A Roy, T Pramanik, S Guchhait, S Sonde, A Rai, LF Register, SK Banerjee, Journal of Applied Physics 120 (16), 164301, 2016
1078. DFT simulations of inter-graphene-layer coupling with rotationally misaligned hBN tunnel barriers in graphene/hBN/graphene tunnel FETs, A Valsaraj, LF Register, E Tutuc, SK Banerjee, Journal of Applied Physics 120 (13), 134310, 2016
1079. Write error rate of spin-transfer-torque random access memory including micromagnetic effects using rare event enhancement, U Roy, T Pramanik, LF Register, SK Banerjee, IEEE Transactions on Magnetics 52 (10), 1-6, 2016
1080. Performance and carrier transport analysis of In 0.7 Ga 0.3 As quantum-well MOSFETs with Al 2 O 3/HfO 2 gate stack, SW Son, JH Park, JM Baek, JS Kim, DK Kim, SH Shin, SK Banerjee,…, Solid-State Electronics 123, 63-67, 2016
1081. Effect of rotational misalignment on interlayer coupling in a graphene/hBN/graphene van der Waal's heterostructure, A Valsaraj, LF Register, SK Banerjee, Simulation of Semiconductor Processes and Devices (SISPAD), 2016 .
1082. Full-band simulations of single-particle resonant tunneling in transition metal dichalcogenide-based interlayer tunneling field-effect transistors, X Wu, X Mou, LF Register, SK Banerjee, Simulation of Semiconductor Processes and Devices (SISPAD), 2016
1083. Probing Anisotropy in Transition-Metal Dichalcogenides using Polarized Raman Spectroscopy, J. HARDING, J. R. SIMPSON, J.-A. YAN, A. MCCREARY, M. TERRONES, D. RHODES, L. BALICAS, R. GHOSH, S. BANERJEE, A. R. HIGHT WALKER, APS March Meeting, 2017
1084. Nano-imaging of Electrical Properties of MoSe2/WSe2 Vertical Heterostructures, Di Wu,Wei Li, Maruthi Yogeesh, Amritesh Rai, Sanjay Banerjee, Deji Akinwande, Keji Lai, APS March Meeting, 2017
1085. Large Area CVD MoS2 RF transistors with GHz performance, MARUTHI NAGAVALLI YOGEESH, ATRESH SANNE, SAUNGEUN PARK, DEJI AKINWADE, SANJAY BANERJEE, APS March Meeting, 2017
1086. Dual-Gated MoTe2MoS2 van der Waals Heterojunction p-n Diode, AMRITESH RAI, HEMA C. P. MOVVA, SANGWOO KANG, STEFANO LARENTIS, ANUPAM ROY, EMANUEL TUTUC, SANJAY K. BANERJEE, APS March Meeting, 2017
1087. Carrier Density Dependent Quantum Hall States Sequence of Holes in WSe2, HEMA C. P. MOVVA, BABAK FALLAHAZAD, KYOUNGHWAN KIM, STEFANO LARENTIS, TAKASHI TANIGUCHI, KENJI WATANABE, SANJAY K. BANERJEE, EMANUEL TUTUC, APS March Meeting, 2017
1088. Spin Hall Effect in Monolayer and Bilayer WSe2, BABAK FALLAHAZAD, HEMA C. P. MOVVA, XIAO LI, TAKASHI TANIGUCHI, KENJI WATANABE, QIAN NIU, SANJAY K. BANERJEE, EMANUEL TUTUC, APS March Meeting, 2017
1089. Extraction of interlayer coupling and hopping potentials with misaligned hBN tunnel barriers in graphene/hBN/graphene tunnel FETs, AMITHRAJ VALSARAJ, LEONARD F. REGISTER, SANJAY K.BANERJEE, APS March Meeting, 2017
1090. Ultrathin, wafer-scale hexagonal boron nitride on dielectric surfaces by diffusion and segregation mechanism, S Sonde, A Dolocan, N Lu, C Corbet, MJ Kim, E Tutuc, SK Banerjee, L.Colombo, 2D Materials 4 (2), 025052, 2017
1091. Detection of current induced spin polarization in epitaxial Bi2Te3 thin film, R Dey, A Roy, T Pramanik, A Rai, S Heon Shin, S Majumder, LF Register, SK Banerjee, Applied Physics Letters 110 (12), 122403, 2017
1092. Laser Spike Annealing for Shallow Junctions in Ge CMOS, W Hsu, F Wen, X Wang, Y Wang, A Dolocan, A Roy, T Kim, E Tutuc, SK Banerjee, IEEE Transactions on Electron Devices 64 (2), 346-352, 2017

1093. A simulation study of voltage-assisted low-energy switching of a perpendicular anisotropy ferromagnet on a topological insulator, B Ghosh, R Dey, LF Register, SK Banerjee, Journal of Computational Electronics, 1-7, 2017

1094. Novel Memory and Logic Devices in Graphene, S. Banerjee, F.Register, E.Tutuc, D.Akinwande and L.Colombo, European Graphene Workshop, Barcelona Spain, March 2017 **(Invited)**

1095. S.K. Banerjee, Electronics in Flatland, ECS, New Orleans may 2017 **(Invited)**

1096. Intra-Domain Periodic Defects in Monolayer MoS2, A Roy, R Ghosh, A Rai, A Sanne, K Kim, HCP Movva, R Dey, T Pramanik, ...E.Tutuc, S.K.Banerjee Appl. Phys. Lett. (2017)

1097. Graphene-Al2O3-silicon heterojunction solar cells on flexible silicon substrates, J Ahn, H Chou, SK Banerjee, Journal of Applied Physics 121 (16), 163105, 2017

1098. Reconfigurable Complementary Monolayer MoTe2 Field-Effect Transistors for Integrated Circuits, S Larentis, B Fallahazad, HCP Movva, K Kim, A Rai, T Taniguchi, S.Banerjee, E.Tutuc, ACS Nano 2017.

1099. Embedded gate CVD MoS 2 microwave FETs, Atresh Sanne, Saungeun Park, Rudresh Ghosh, Maruthi Nagavalli Yogeesh, Chison Liu, Leo Mathew, Rajesh Rao, Deji Akinwande, Sanjay Kumar Banerjee. npj 2D Materials and Applications, Nature Publishing Group, Volume 1, Issue 1, Pages 26, 2017/8/10

1100. Out-of-Plane Electromechanical Response of Monolayer Molybdenum Disulfide Measured by Piezoresponse Force Microscopy, Christopher J. Brennan, Rudresh Ghosh, Kalhan Koul, Sanjay K. Banerjee, Nanshu Lu, and Edward T. Yu, *Nano Letters* **Article ASAP**, DOI: 10.1021/acs.nanolett.7b02123, 2017

1101. Versatile Large-Area Custom-Feature van der Waals Epitaxy of Topological Insulators, Tanuj Trivedi, Anupam Roy, Hema C. P. Movva, Emily S. Walker, Seth R. Bank, Dean P. Neikirk, and Sanjay K. Banerjee, *ACS Nano* **2017** *11* (7), 7457-7467, DOI: 10.1021/acsnano.7b03894, July 2017

1102. Interfacial reactions at Fe/topological insulator spin contacts, Sarmita Majumder, Karalee Jarvis, Sanjay K Banerjee, Karen L Kavanagh, Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomen, Volume 35(4), 2017

1103. Experimental evidence of exciton capture by mid-gap defects in CVD grown monolayer MoSe 2, Ke Chen, Rudresh Ghosh, Xianghai Meng, Anupam Roy, Joon-Seok Kim, Feng He, Sarah C Mason, Xiaochuan Xu, Jung-Fu Lin, Deji Akinwande, Sanjay K Banerjee, Yaguo Wang, npj 2D Materials and Applications, Vol. 1(1), 2017.

1104. A.Sanne, Maruthi Yogesh, D.Akinwande, SK Banerjee, Sanjay Banerjee, E-mode RF transistors and circuit model using CVD MoS 2, Device Research Conf 2017

1105. Machine learning for variability aware statistical device design: The case of perpendicular spin-transfer-torque random access memory, Urmimala Roy, Tanmoy Pramanik, Subhendu Roy, Leonard F Register, Sanjay K Banerjee, Device Research Conference, 2017

1106. A universal model for interface-type threshold switching phenomena by comprehensive study of Vanadium oxide-based selector, Chih-Yang Lin, Ying-Chen Chen, Meiqi Guo, Chih-Hung Pan, Fu-Yuan Jin, Yi-Ting Tseng, Cheng Chih Hsieh, Xiaohan Wu, Min-Chen Chen, Yao-Feng Chang, Fei Zhou, Burt Fowler, Kuan-Chang Chang, Tsung-Ming Tsai, Ting-Chang Chang, Yonggang Zhao, Simon M Sze, Sanjay Banerjee, Jack C Lee, International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), 2017

1107. Tip-enhanced Raman spectroscopy of semiconductor nanostructures, Zhongjian Zhang, David Dillen, Christopher J Brennan, Alex De Palma, Gabriel Cossio, Rudresh Ghosh, Sanjay Banerjee, Emanuel Tutuc, T Yu Edward, Nanoimaging and Nanospectroscopy V, Proc. SPIE, Vol.10350, Pages 103500A

1108. Enhancement-Mode RF Transistors and Circuit 1 Model using CVD MoS2, Atresh Sanne, Saungeun Park, Rudresh Ghosh, Maruthi Nagavalli Yogeesh, Chison Liu, Leo Mathew, Rajesh Rao, Deji Akinwande, and Sanjay Kumar Banerjee, SRC Techcon 2017

1109. MoTe2/MoS2 Van der Waals Heterostructures with Diode-like Behavior and Negative Differential Transconductance, Amritesh Rai, Hema C.P. Movva, Sangwoo Kang, Stefano Larentis, Anupam Roy, Emanuel Tutuc, and Sanjay K. Banerjee, SRC Techcon 2017

1110. Micromagnetic effects on the write error rates of in-plane and perpendicular spin-transfer-torque random access memory via rare-event-enhanced simulation, Tanmoy Pramanik, Leonard F. Register, and Sanjay K. Banerjee, SRC Techcon 2017

1111. Interlayer Tunnel Field-Effect Transistors (ITFETs): Physics, Fabrication and Applications, Sangwoo Kang, Xuehao Mou, Babak Fallahazad, Nitin Prasad, Xian Wu, Amithraj Valsaraj, Hema CP Movva, Kyounghwan Kim, Emanuel Tutuc, Leonard F Register, Sanjay K Banerjee, Journal of Physics D: Applied Physics, Vol. 50(38), 2017

1112. Angular dependence of magnetization reversal in epitaxial chromium telluride thin films with perpendicular magnetic anisotropy, T Pramanik, A Roy, R Dey, A Rai, S Guchhait, HCP Movva, CC Hsieh, S.K.Banerjee, Journal of Magnetism and Magnetic Materials, 2017

1113. ReS2-based interlayer tunnel field effect transistor, OB Mohammed, HCP Movva, N Prasad, A Valsaraj, S Kang, CM Corbet, L.F.Register, E.Tutuc, S.K. Banerjee, Journal of Applied Physics 122 (24), 245701, 2017

1114. Bilayer Pseudospin Junction Transistor (BiSJT) for "Beyond-CMOS" Logic, X Mou, LF Register, AH MacDonald, SK Banerjee, IEEE Transactions on Electron Devices 64 (11), 4759-4762, 2017

1115. Carrier Trapping by Oxygen Impurities in Molybdenum Diselenide, K Chen, A Roy, A Rai, A Valsaraj, X Meng, F He, X Xu, LF Register, SK Banerjee, Y.Wang, ACS applied materials & interfaces, 2017

1116. Short-Term Relaxation in HfO_x/CeO_x Resistive Random Access Memory With Selector, Cheng-Chih Hsieh, Yao-Feng Chang, Yoocharn Jeon, Anupam Roy, Davood Shahrjerdi,and Sanjay K. Banerjee, EDL v. 38(7) 2017.

1117. Defect passivation of transition metal dichalcogenides via a charge transfer van der Waals interface, JH Park, A Sanne, Y Guo, M Amani, K Zhang, HCP Movva, JA Robinson, Ali Javey, John Robertson, Sanjay K Banerjee, Andrew C KummelScience Advances 3 (10), e1701661, 2017

1118. Resonant Interlayer Tunneling in 2D Van Der Waals-Materials-Based Channel-Dielectric-Channel Systems and Possible Device and Circuit Applications, Leonard F Register, G William Burg, Chris M Corbet, Babak Fallahazad, Sangwoo Kang, Kyounghwan Kim, Stefano Larentis, Kayoung Lee, Omar Mohammed, Xuehao Mou, Hema CP Movva, Nitin Prasad, Dharmendar Reddy, Amithraj Valsaraj, Xian Wu, Sanjay K Banerjee, Emanuel Tutuc, Nishtha Sharma, Qingxiao Wang, Moon Kim, Andrew Marshall, Jiamin Xue, Takashi Taniguchi, Kenji Watanabe, Luigi Colombo, ECS **Invited talk**, 2017

1119. Electronics in Flatland, SK. Banerjee (with L.F. Register, E.Tutuc, D. Akinwande), APS March Meeting 2018 **Invited Talk**.

1120. Tunable $\Gamma-K$ Valley Populations in Hole-Doped Trilayer WSe_2, H.Movva, .. SBanerjee, A.MacDonald, E.Tutuc, APS March Meeting 2018

1121. Shubnikov-de Haas Oscillations in bilayer $MoSe_2$: effective mass and carrier density dependent quantum Hall states sequence, S.Larentis, … S.Banerjee, E.Tutuc, APS March Meeting 2018

1122. Carrier Trapping by Oxygen Impurities in Molybdenum Diselenide, A.Rai, K.Chen, .. S.Banerjee, Y.Wang, APS March Meeting 2018

1123. Electronics in Flatland, SK. Banerjee (with L.F. Register, E.Tutuc, D. Akinwande), Korean Semiconductor Society, **Plenary Talk (2018)**.

1124. Towards band structure and band offset engineering of monolayer Mo (1− x) W (x) S2 via Strain, Joon-Seok Kim, Rafia Ahmad, Tribhuwan Pandey, Amritesh Rai, Simin Feng, Jing Yang, Zhong Lin, Mauricio Terrones, Sanjay K Banerjee, Abhishek K Singh, Deji Akinwande, Jung-Fu Lin, 2D Materials 5 (1), 015008, 2018.

1125. Probing nanoscale variations in strain and band structure of Mo S 2 on Au nanopyramids using tip-enhanced Raman spectroscopy, Z Zhang, AC De Palma, CJ Brennan, G Cossio, R Ghosh, SK Banerjee, E.Yu, Physical Review B 97 (8), 085305, 2018

1126. Conversion of spin current into charge current in a topological insulator: Role of the interface, R Dey, N Prasad, LF Register, SK Banerjee, Physical Review B 97 (17), 174406, 2018

1127. Accelerated carrier recombination by grain boundary/edge defects in MBE grown transition metal dichalcogenides, K Chen, A Roy, A Rai, HCP Movva, X Meng, F He, SK Banerjee, Y Wang, APL Materials 6 (5), 056103, 2018

1128. Highly improved passivation of c-Si surfaces using a gradient i a-Si: H layer, S Lee, J Ahn, L Mathew, R Rao, Z Zhang, JH Kim, SK Banerjee, ET Yu, Journal of Applied Physics 123 (16), 163101, 2018

1129. Tunable Gamma-K Valley Populations in Hole-Doped Trilayer WSe2, Hema CP Movva, Timothy Lovorn, Babak Fallahazad, Stefano Larentis, Kyounghwan Kim, Takashi Taniguchi, Kenji Watanabe, Sanjay K Banerjee, Allan H MacDonald, Emanuel Tutuc, PHYSICAL REVIEW LETTERS, Vol: 120 (10) MAR 2018

1130. Modeling all-electrical detection of the inverse Edelstein effect by spin-polarized tunneling in a topological-insulator/ferromagnetic-metal heterostructure, R Dey, LF Register, SK Banerjee, Physical Review B 97 (14), 144417, 2018

1131. Scaling Challenges in Solid State Memory, S.Banerjee, SPIE Workshop, San Jose 2018, **Invited.**

1132. Large effective mass and interaction-enhanced Zeeman splitting of K-valley electrons in MoSe2, S Larentis, HCP Movva, B Fallahazad, K Kim, A Behroozi, T Taniguchi, Sanjay K Banerjee, Emanuel Tutuc, Physical Review B 97 (20), 201407, 2018.

1133. Towards mm-wave nanoelectronics and RF switches using MoS_2 2D Semiconductor, M Kim, S Park, A Sanne, SK Banerjee, D Akinwande, 2018 IEEE/MTT-S International Microwave Symposium-IMS, 352-354

1134. Enhanced P-Type Behavior in 2D WSe2 via Chemical Defect Engineering, A Rai, JH Park, C Zhang, I Kwak, S Wolf, S Vishwanath, X Lin, J Furdyna, A.Kummel, S.K.Banerjee, 2018 76th Device Research Conference (DRC), 1-2.

1135. Progress in Contact, Doping and Mobility Engineering of MoS2: An Atomically Thin 2D Semiconductor, A Rai, H Movva, A Roy, D Taneja, S Chowdhury, S Banerjee, Crystals 8 (8), 316 (2018).

1136. Write error rates of in-plane spin-transfer-torque random access memory calculated from rare-event enhanced micromagnetic simulations, T Pramanik, U Roy, P Jadaun, LF Register, SK Banerjee, Journal of Magnetism and Magnetic Materials 467, 96-107 (2018).

1137. Enhancement of Resonance by the Use of Multiple Tunnel Barriers in Bilayer Graphene-Based Interlayer Tunnel Field Effect Transistors, N Prasad, SK Banerjee, LF Register, SISPAD 2018.

1138. Memory and Logic soft error improvement using phase transition material assisted transistors, N.Teja, A.Rai, SK Banerjee, J.Kulkarni, ICEE India 2018.

1139. Growth of lateral graphene/h-BN heterostructure on copper foils by chemical vapor deposition, Pingping Zhuang, Weiyi Lin, Harry Chou, Anupam Roy, Weiwei Cai, Sanjay K Banerjee, Nanotechnology, Vol. 30(3),Pg. 03LT01, (2018).

1140. Dependence of h-BN Film Thickness as Grown on Nickel Single-Crystal Substrates of Different Orientations, Harry Chou, Sarmita Majumder, Anupam Roy, Massimo Catalano, Pingping Zhuang, Manuel Quevedo-Lopez, Luigi Colombo, Sanjay K Banerjee, ACS applied materials & interfaces, vol.10(51), pg. 44862-44870 (2018)

1141. Moir\'e Excitons in Van der Waals Heterostructures, Kha Tran, Galan Moody, Fengcheng Wu, Xiaobo Lu, Junho Choi, Akshay Singh, Jacob Embley, André Zepeda, Marshall Campbell, Kyounghwan Kim, Amritesh Rai, Travis Autry, Daniel A Sanchez, Takashi Taniguchi, Kenji Watanabe, Nanshu Lu, Sanjay K Banerjee, Emanuel Tutuc, Li Yang, Allan H MacDonald, Kevin L Silverman, Xiaoqin Li, APS March Meeting 2019.

1142. Two dimensional $SrTiO_3$ membranes, W Guo, A Posadas, A Demkov, A Roy, A Rai, S Banerjee, K Olsson, XE Li, Bulletin of the American Physical Society, 2019.

1143. Atomic layer deposition of cobalt oxide on oxide substrates and low temperature reduction to form ultrathin cobalt metal films, Zizhuo Zhang, Himamshu C Nallan, Brennan M Coffey, Thong Q Ngo, Tanmoy Pramanik, Sanjay K Banerjee, John G EkerdtJournal of Vacuum Science & Technology A **37**, 010903 (2019)

1144. Stress-induced bandgap renormalization in atomic crystals, Zheng Sun, Jonathan Beaumariage, Hema CP Movva, Sayema Chowdhury, Anupam Roy, Sanjay K Banerjee, David W Snoke, Solid State Communications, Vol 288, pg. 18-21, Feb. 2019.

1145. Visualization of Local Conductance in MoS_2/WSe_2 Heterostructure Transistors, Di Wu, Wei Li, Amritesh Rai, Xiaoyu Wu, Hema CP Movva, Maruthi Nagavalli Yogeesh, Zhaodong Chu, Sanjay K Banerjee, Deji Akinwande, Keji Lai, Nano letters, Feb. 2019.

1146. Evidence for moiré excitons in van der Waals heterostructures, Kha Tran, Galan Moody, Fengcheng Wu, Xiaobo Lu, Junho Choi, Kyounghwan Kim, Amritesh Rai, Daniel A Sanchez, Jiamin Quan, Akshay Singh, Jacob Embley, André Zepeda, Marshall Campbell, Travis Autry, Takashi Taniguchi, Kenji Watanabe, Nanshu Lu, Sanjay K Banerjee, Kevin L Silverman, Suenne Kim, Emanuel Tutuc, Li Yang, Allan H MacDonald, Xiaoqin Li, Nature (Feb. 2019)

1147. Neural Network Assisted Compact Model for Accurate Characterization of Cycle.-to-cycle Variations in 2-D h-BN based RRAM devices, Jacob N. Rohan, Pingping Zhuang,SS Teja Nibhanupudi, Sanjay K. Banerjee, Jaydeep P. Kulkarni, Dev. Res. Conf. 2019.

1148. Tunnel Barrier Thickness, Interlayer Rotational Alignment, and Top Gating Effects on ReS2/hBN/ReS2 Resonant Interlayer Tunnel Field Effect Transistors, Omar B. Mohammed, Leonard F. Register, and Sanjay K. Banerjee, Dev Res. Conf, 2019.

1149. Fractal Growth of WSe2, Using Chemical Vapor Deposition Sayema Chowdhury, Anupam Roy and Sanjay Banerjee, Elec. Mat. Conf., 2019.

1150. Epitaxial Growth and Characterization of Chromium Selenide Thin-Films on c-Al203(0001) Anupam Roy, Tanmoy Pramanik, Rik Dey, Amritesh Rai and Sanjay Banerjee, Elec. Mat. Conf., 2019.

1151. Two Terminal Devices Based on Two-Dimensional Materials Omar B, Mohammed and Sanjay Banerjee, Elec. Mat. Conf., 2019

1152. Tunable Long-Term and Short-Term Memories in a Single Magnetic Tunnel Junction Based Synapse, Nitin Prasad, Tanmoy Pramanik, Sanjay K. Banerjee and Leonard F. Register, MMM Conf. , 2019.

1153. Simulation of exciton condensate-mediated quantum transport in a double-monolayer transition metal dichalcogenide system, X Wu, X Mou, LF Register, SK Banerjee, Physical Review B 99 (3), 035113, 2019

1154. Electron redistribution and energy transfer in graphene/MoS_2 heterostructure, W Lin, P Zhuang, H Chou, Y Gu, R Roberts, W Li, SK Banerjee, W Cai, D.Akinwande, Applied Physics Letters 114 (11), 113103, 2019.

1155. Thinnest Nonvolatile Memory Based on Monolayer h-BN, X Wu, R Ge, PA Chen, H Chou, Z Zhang, Y Zhang, S Banerjee, JC Lee, D. Akinwande, Advanced Materials 31 (15), 1806790, 2019

1156. Band Structure Engineering of Layered WSe2 via One-Step Chemical Functionalization, JH Park, A Rai, J Hwang, C Zhang, I Kwak, SF Wolf, S Vishwanath, X Liu, SK. Banerjee, KJ. Cho, AC. Kummel, ACS Nano, 1377545-7555, 2019.

1157. Valence and conduction band offsets at beryllium oxide interfaces with silicon carbide and III-V nitrides, Donghyi Koh, Sanjay K Banerjee, Chris Locke, Stephen E Saddow, Justin Brockman, Markus Kuhn, Sean W King, Journal of Vacuum Science & Technology B **37**, 041206 (2019).

1158. Electronics in Flatland, (with Register, Tutuc, Akinwande), Graphene Week, Helsinki, Sept. 2019. (**Invited)**

1159. Electronics in Flatland, (with Register, Tutuc, Akinwande), American Vac. Society, Ohio, Sept. 2019. (**Invited**)

1160. Electronics in Flatland, (with Register, Tutuc, Akinwande), Int. Workshop on Physics of Semiconductors, Kolkata, India, Dec. 2019. (**Invited Plenary**)

1161. Tunable Long-Term and Short-Term Memories in a Single Magnetic Tunnel Junction Based Synapse, Nitin Prasad, Tanmoy Pramanik, Sanjay K. Banerjee and Leonard F. Register, MMM Conf. , 2019.

1162. Transition from 3D to 2D and fractal to compact domains of CVD Grown $MoSe_2$, Sayema Chowdhury, Anupam Roy, Sanjay K. Banerjee, Materials Res. Society Symposium, 2020.

1163. Solid Electrolytic Substrates for High Performance TMD Transistors and Circuits, Md. Hasibul Alam, Zifan Xu, Sayema Chowdhury, Zhanzhi Jiang, Deepyanti Taneja, Sanjay K. Banerjee, Keji Lai, Maria Helena Braga and Deji Akinwande, Device Research Conference, June 2020.

1164. Large-Area Metal Organic Chemical Vapor Deposition Growth of Few Layer MoS_2 and its Controlled Sulfurization to Monolayer MoS_2, Sayema Chowdhury, Anupam Roy, Chison Liu, Rudresh Ghosh, Harry Chou and Sanjay K. Banerjee, Electronics Materials Conference, June 2020.

1165. Electronics in Flatland, (with Register, Tutuc, Akinwande), Vebleo Conf. on Nanomaterials, Sweden, Aug. 2020 (Invited Keynote)

1166. Design of giant spin Hall effect in transition metal oxides, P. Jadaun, L. F. Register, S. K. Banerjee, *Materials Research Society (MRS), online, Nov 2020*

1167. Design of giant DMI and its microscopic origin in magnetic bilayers, Priyamvada Jadaun, Leonard F Register, and Sanjay K Banerjee, MMM Conference, 2020.

1168. Stacking-Order-Driven Optical Properties and Carrier Dynamics in ReS_2, Y Zhou, N Maity, A Rai, R Juneja, X Meng, A Roy, Y Zhang, X Xu, JF Lin, S.K.Banerjee, A.Singh, Y.Wang, Advanced Materials 32 (22), 1908311, 2020.

1169. Contact Engineering of Layered MoS_2 via Chemically Dipping Treatments, S Bang, S Lee, A Rai, NT Duong, I Kawk, S Wolf, CH Chung, SK Banerjee, A.Kummel, M.Jeong, Advanced Functional Materials 30 (16), 2000250, 2020.

1170. Two-Dimensional to Three-Dimensional Growth of Transition Metal Diselenides by Chemical Vapor Deposition: Interplay between Fractal, Dendritic, and Compact Morphologies, S Chowdhury, A.Roy, I Bodemann, SK Banerjee. ACS Applied Materials & Interfaces 12 (13), 15885-15892, 2020

1171. Realizing both short-and long-term memory within a single magnetic tunnel junction based synapse, N Prasad, T Pramanik, SK Banerjee, LF Register, Journal of Applied Physics 127 (9), 093904, 2020.

1172. Structural and magnetic properties of molecular beam epitaxy grown chromium selenide thin films, A Roy, R Dey, T Pramanik, A Rai, R Schalip, S Majumder, S Guchhait, S.K.Banerjee, Physical Review Materials 4 (2), 025001, 2020.

1173. X-ray photoelectron spectroscopy investigation of the valence band offset at beryllium oxide-diamond interfaces, D Koh, T.Hudnall, C.Bielawski, SK Banerjee, J Brockman, M Kuhn, SW King, Diamond and Related Materials 101, 107647, 2020.

1174. Nonpolar Resistive Switching of Multilayer-hBN-Based Memories, P Zhuang, W Lin, J Ahn, M Catalano, H Chou, A Roy, M Quevedo-Lopez, L.Colombo, S.K.Banerjee, Advanced Electronic Materials 6 (1), 1900979, 2020

1175. Progress in Materials Development for the Rapid Efficiency Advancement of Perovskite Solar Cells, W.Chi and S.K. Banerjee, Small, May 2020.

1176. Lithium-Ion Electrolytic Substrates for sub-1V High-Performance TMD Transistors and Amplifiers, Md Hasibul Alam, Sayema Chowdhury, Zifan Zhu, Deepyanti Taneja, Keji Lai, Sanjay K. Banerjee, Maria Helena Braga, and Deji Akinwande, Nature Communications, 2020.

1177. The microscopic origin of DMI in magnetic bilayers and prediction of giant DMI in new bilayers, Priyamvada Jadaun, Leonard F Register, Sanjay K Banerjee, Nature Partner Journal Computation, 2020.

1178. Rational design principles for giant spin Hall effect in 5d-transition metal oxides, P Jadaun, LF Register, SK Banerjee, Proceedings of the National Academy of Sciences 117 (22), 11878-11886, 2020

1179. Quantum-Corrected Semiclassical Monte Carlo Study of Channel Scaling in Nanoscale Si, Ge, and $In_{0.53}Ga_{0.47}As$ n-channel FinFETs, Aqyan A. Bhatti, Nupur Navlakha, Dax M. Crum, Sanjay K. Banerjee, and Leonard F. Register, IEEE Nanotechnology magazine, Dec. 2020.

1180. A Library of Atomically Thin 2D Materials Featuring the Conductive-Point Resistive Switching Phenomenon, R Ge, X Wu, L Liang, SM Hus, Y Gu, E Okogbue, H Chou, J Shi, Y Zhang, Sanjay K Banerjee, Yeonwoong Jung, Jack C Lee, Deji AkinwandeAdvanced Materials, 2007792, 2020

1181. Two-dimensional transport model of spin-polarized tunneling in a topological-insulator/tunnel-barrier/ferromagnetic-metal heterostructure, R Dey, LF Register, SK Banerjee, Physical Review B 102 (14), 144414, 2020

1182. Optoelectronic mixing with high-frequency graphene transistors , MH Alam, Z Xu, S Chowdhury, Z Jiang, D Taneja, SK Banerjee, K Lai, D.Akinwande, NATURE COMMUNICATIONS, vol 11, 3203, 2020.

1183. Machine Learning Assisted Compact Modeling of Cycle-to-cycle Variations in 2-D h-BN based RRAM devices, Jacob N. Rohan, P. Zhuang, S. S. Teja Nibhanupudi, *Sanjay K. Banerjee, and Jaydeep P. Kulkarni***,** Government Microelectronic Conference (**GOMACTech**), March 2020

1184. Stability Improvement of Perovskite Solar Cells by Compositional and Interfacial Engineering, W Chi, SK Banerjee, Chemistry of Materials, v.33 (2021).

1185. Machine Learning for Statistical Modeling: The Case of Perpendicular Spin-Transfer-Torque Random Access Memory, U Roy, T Pramanik, S Roy, A Chatterjee, LF Register, SK Banerjee, ACM Transactions on Design Automation of Electronic Systems (TODAES) 26 (2021).

1186. Two-Step Growth of Uniform Monolayer MoS_2 Nanosheets by Metal–Organic Chemical Vapor Deposition, S Chowdhury, A Roy, C Liu, MH Alam, R Ghosh, H Chou, D Akinwande, S.K. Banerjee, ACS Omega (2021).

1187. Centimeter-Scale MoS_2 on Solid Electrolyte Substrate by Sulfurization of Molybdenum Thin Film, MH Alam, SST Nibhanupudi, SK Banerjee, D Akinwande, IEEE 21st International Conference on Nanotechnology (NANO), 421-424, 2021.

1188. X-Ray Photoemission Investigation of the Beryllium Oxide Band Alignment with Magnesium Oxide and Estimates for Other Insulating and Conducting Oxides, D Koh, TW Hudnall, CW Bielawski, S Banerjee, J Brockman, M Kuhn, S.King, ECS Transactions 102 (3), 127, 2021.

1189. Development of perovskite solar cells by incorporating quantum dots, W Chi, SK Banerjee, Chemical Engineering Journal, 131588, 2021.

1190. Direct growth of MoS2 on electrolytic substrate and realization of high-mobility transistors, MH Alam, S Chowdhury, A Roy, MH Braga, SK Banerjee, D Akinwande, Physical Review Materials 5 (5), 054003, 2021.

1191. Method to enhance resonant interlayer tunneling in bilayer-graphene systems, N Prasad, X Wu, SK Banerjee, LF Register, Journal of Computational Electronics, 1-6, 2021.

1192. Achieving Resistance against Moisture and Oxygen for Perovskite Solar Cells with High Efficiency and Stability, W Chi, SK Banerjee, Chemistry of Materials, 2021.

1193. Recent progress on measurement of spin–charge interconversion in topological insulators using ferromagnetic resonance, R Dey, A Roy, LF Register, SK Banerjee, APL Materials 9 (6), 060702, **Invited,** 2021.

1194. Method to enhance resonant interlayer tunneling in bilayer-graphene systems, N Prasad, X Wu, SK Banerjee, LF Register, Journal of Computational Electronics, 1-6, 2021.

1195. Development of perovskite solar cells by incorporating quantum dots, W Chi, SK Banerjee, Chemical Engineering Journal 426, 131588.

1196. Electronics and Spintronics in 2D, UC Berkeley invited talk, Sept, 2021

1197. Electronics in Flatland, IEEE EDS invited talk, Oct., 2021

1198. Electronics and Spintronics in 2D, Indian National Academy of Sciences, invited talk, Dec, 2021.

1199. Development of perovskite solar cells by incorporating quantum dots, W Chi, SK Banerjee, Chemical Engineering Journal 426, 131588.

1200. Room-Temperature Processed Lateral Trench-Metal–Insulator–Semiconductor Schottky Barrier Diodes with Amorphous Gallium Oxide (a-Ga_2O_3) Thin Films on Si, H Ebrahimi-Darkhaneh, Z Shamsi, MGR Banda, M Quevedo-Lopez, SK Banerjee, physica status solidi (a), 2022.

1201. Performance Improvement of Perovskite Solar Cells by Interactions between Nano-Sized Quantum Dots and Perovskite, W Chi, SK Banerjee, Advanced Functional Materials, 2022.

1202. Wafer-Scalable Single-Layer Amorphous Molybdenum Trioxide, MH Alam, S Chowdhury, A Roy, X Wu, R Ge, MA Rodder, J Chen, Y Lu, J.Lee, SK Banerjee, J. Warner, D.Akinwande, ACS nano 16 (3), 3756-3767, 2022.

1203. Application of perovskite quantum dots as an absorber in perovskite solar cells, W Chi, SK Banerjee, Angewandte Chemie 134 (9), 2022.

1204. High-quality crystal Mg-doped p-type Ga_2O_3 thin film by pulse laser deposition, Hadi Ebrahimi-Darkhaneh, Mahsa Shekarnoush, Josefina Arellano-Jimenez, Rodolfo Rodriguez, Luigi Colombo, Manuel Quevedo-Lopez, Sanjay K. Banerjee, J. Mat. Science 2022

1205. Emerging 2D Materials for Tunneling Field Effect Transistors, N.Navlkha, F.Register, S.Banerjee, IEEE Latin American Devices Conf. 2022

1206. Experimental demonstration of sub-nanosecond switching in 2D hexagonal Boron Nitride resistive memory devices, SS Teja Nibhanupudi, Dmitry Veksler, Anupam Roy, Matthew Coupin, Kevin C. Matthews, Jamie Warner, Gennadi Bersuker, Jaydeep P. Kulkarni and Sanjay K. Banerjee, IEEE Dev. Res. Conf, 2022.

1207. Millimeter-wave switch based on monolayer hexagonal boron nitride, Sung Jin Yang, Frank Makal, Paul Peterson, Jason Alikpala, Christopher J. Luth, Sanjay K. Banerjee, Andreas Roessler, and Deji Akinwande, IEEE Dev. Res. Conf, 2022.

1208. Molecular Beam Epitaxy Growth of Iron Selenide Thin Films on *c*-Al_2O_3(0001), Ryan Schalip, Anupam Roy, and Sanjay K. Banerjee, Elec. Mat. Conf. 2022.

1209. Role of Hydrogen in Suppressing Secondary Nucleation in Chemical Vapor-Deposited MoS2, S. Chowdhury, A. Roy, … F.Mangolini, D.Akinwande, SK. Banerjee, ACS APPLIED ELECTRONIC MATERIALS 4 (12) , pp.6133-6141, Dec. 2022.

1210. Phase-Field Modeling of Chemical Vapor-Deposited 2D MoSe2 Domains with Varying Morphology for Electronic Devices and Catalytic Applications, A.Roy,

T.Pramanik, S.Chowdhury, SK. Banerjee, ACS APPLIED NANO MATERIALS 5 (10) , pp.15488-15497, 2022.

1211. Engineering strategies for two-dimensional perovskite solar cells, W.Chi and SK. Banerjee, TRENDS IN CHEMISTRY 4 (11), Oct. 2022.

1212. Plasmons in 2D Materials, R.Xue, …S.Chowdhury, SK. Banerjee, D.Forrest, H.Deng, D.Snoke, APS March Meeting 2023.

1213. Band Alignment in BP/MoS_2 heterostructure: Role of Charge Redistribution, Electric Field, Biaxial Strain, and Layer Engineering, N Navlakha, P Jadaun, LF Register, SK Banerjee, J. Elec. Materials, v.52, p.1474, 2023.

1214. Comparison and integration of CuInGaSe and perovskite solar cells, W.Chi and SK. Banerjee, JOURNAL OF ENERGY CHEMISTRY 78 , pp.463-475, 2023

1215. Reconfigurable Low-Voltage Hexagonal Boron Nitride Nonvolatile Switches for Millimeter-Wave Wireless Communications, S. Yang, M. Dahan, S.Teja, C.Luth, SK. Banerjee, M.Kim, A.Roessler, E.Yalon, D. Akinwande, NANO LETTERS , pp.1152-1158, Jan. 2023

1216. Perovskite/Silicon Tandem Solar Cells: Choiceof Bottom Devices and Recombination Layers, W.Chi, SK. Banerjee, K.Jayawardena, R.Silva and S.Seok, ACS Energy Lett. 8, 1535−1550, 2023.

1217. Proximity effects of 2D antiferromagnets on superconductivity in exfoliated niobium disulfide, Matthew N. Disiena, Christopher Luth, S. S. Teja Nibhanupudi, Jatin V. Singh, A. Ansh, Sarmita Majumder, and Sanjay K. Banerjee, J. Appl. Phys, 134(2), July 2023.

1218. Self-Compliant Threshold Switching Devices with High On/Off ratio by Control of Quantized Conductance in Ag Filaments, Moonkyu Song, Sangheon Lee, S. S. Teja Nibhanupudi, Jatin Vikram Singh, Matthew Disiena, Christopher J. Luth, Siyu Wu, Matthew J. Coupin, Jamie H. Warner, and Sanjay K. Banerjee, Nano Lett. 23(7), July 2023

1219. Semi-classical Monte Carlo study of the impact of tensile strain on the performance limits of monolayer MoS_2 n-channel MOSFETs, A.Bhatti, AA; B.Archer, BT; N.Navlakha,L.Register, S. Banerjee , Nov 28 2023, JOURNAL OF APPLIED PHYSICS 134 (20).

1220. Simultaneous Determination of Thermal Conductivity and Heat Capacity in Thin Films with Picosecond Transient Thermoreflectance and Picosecond Laser Flash, Ye, ZF; Park, JH; .. S.K. Banerjee, Wang, YG, NANOSCALE AND MICROSCALE THERMOPHYSICAL ENGINEERING 27 (3-4) , pp.182-194, Oct. 2023.

1221. Improvement of Power Consumption and Linearity of Integrate/Fire Characteristic using Diffusive Memristors with Defective Graphene for Artificial Neuron Application, Moonkyu Song, Sangheon Lee, S. S. Teja Nibhanupudi, Siyu Wu, and Sanjay K. Banerjee, Solid State Electronics, May 2024.

1222. Ultra Fast Switching Memristors Based on Two-dimensional Materials , SS Teja Nibhanupudi, Anupam Roy, Dmitry Veksler, Matthew Coupin, Kevin C. Matthews, Matthew Disiena, Ansh, Jatin V Singh, Ioana R Gearba-Dolocan, Jamie Warner, Jaydeep P. Kulkarni, Gennadi Bersuker, Sanjay K. Banerjee, Nature Communications, March 2024.

1223. Microelectronics: The Beginning of the End or the End of the Beginning?" S.Banerjee, Plenary talk, Device Research Conference, June 2024.

1224. 2-D Analytical Modeling of the Magnetic Tunnel Junctions Including Multidomain Effects: Predictive Insights and Design Optimization, Pandey, N; Chauhan,

YS; Register LF; Banerjee, SK, IEEE TRANSACTIONS ON ELECTRON DEVICES, 71 (7) , pp.4347-4354, July 2024

1225. Low-Temperature Synthesis of WSe_2 by the Selenization Process under Ultrahigh Vacuum for BEOL Compatible Reconfigurable Neurons, Nibhanupudi, SST; Roy, A; (...); Banerjee, SK, ACS APPLIED MATERIALS & INTERFACES, 16 (17) , pp.22326-22333, Apr 18 2024.

1226. Ferroelectric proximity effects in two-dimensional FeSeTe. Matthew N. Disiena Christopher Luth, Reid Shattuck, Jatin V. Singh, and Sanjay K. Banerjee, Journal of Applied Physics, 136(3), 2024

1227. Dynamics of Domains and its Impact on Gate Tunneling in CMOS-Compatible FeFETs, Nilesh Pandey, Yogesh Singh Chauhan, Leonard F. Register, and Sanjay K. Banerjee, IEEE Elec. Dev, Letters, VOL. 45, NO. 7, JULY 2024.

1228. Multi-Domain Dynamics and Ultimate Scalability of CMOS-Compatible FeFETs, Nilesh Pandey, Yogesh Singh Chauhan, Leonard F. Register, and Sanjay K. Banerjee, IEEE Tran. Elec. Dev, VOL. 71, NO. 7, JULY 2024.

1229. Characteristics of the thermodynamics of Novel Ag-cation Controllable Diffusive Memristors for Artificial Neuron Application, Moonkyu Song, Sangheon Lee, and Sanjay K. Banerjee, Mat. Res. Symp, Nov. 2023.

1230. Comparative Study of Steep Switching Devices for 1T Dynamic Memory, Nupur Navlakha, Md Hasan Raza Ansari, Leonard F. Register, Sanjay Banerjee, Latin America Device Research Conf,.2023.

1231. Estimating Heterogeneous|Homogeneous Junction Semiconductor Device Internal Electrical Properties (Charge Density, Potential, Electric Field ...) with In-house Technology Computed Aided Design (TCAD) Tools A.Banerjee and S. Banerjee, International Conference on Nanostructures and Nanomaterials (ICN May 2024), Kottayam Kerala, India.

1232. Impact of Multi-Domain on Ferroelectric Tunnel Junction Design Metrics, Nilesh Pandey, Yogesh S. Chauhan, Leonard F. Register, and Sanjay K. Banerjee, Device Res. Conf. June 2024.

1233. Impact of Multi-Domain Microscopic Interactions on Magnetic Tunnel Junction's Static and Transient Characteristics, Nilesh Pandey, Yogesh S. Chauhan, Leonard F. Register, and Sanjay K. Banerjee, Device Res. Conf. June 2024

1234. Multi-Domain Dynamics and Ultimate Scalability of CMOS-Compatible FeFETs, N.Pandey, Y.Chauhan, L.Register, SK Banerjee, IEEE ELECTRON DEVICE LETTERS, Volume 45 (11), Nov. 2024

1235. Comparative Study of Steep Switching Devices for 1T Dynamic Memory, Navlakha, N; Ansari, HR; Register LF, Banerjee, SK, Jun 2024 TECNOLOGIA EN MARCHA37 , pp.110-117

1236. Nanoelectronics Using 2D Materials, Sk Banerjee, IEEE IndCon, IIT Kharagpur, December 2024 (Invited).

1237. Increased nonreciprocal current in iron superconductor antiferromagnet interface, Christopher Luth, Rajveer Jha, Matthew Disiena, Luke Sloan, Sanjay K Banerjee, CEC-ICMC Conference, May 2025.

1238. Comprehensive TCAD Analysis of BEOL-Compatible In_2O_3 Thin-Film Transistors, Nilesh Pandey, Ujwal Radhakrishna, Jian-Yu Lin, Chang Niu, Orlando Lazaro, Gianluca Boselli, Luigi Colombo[2], Baher Haroun, Peide D. Ye, Leonard F. Register, and Sanjay K. Banerjee, Device Research Conference, June 2025.

1239. Gate Controlled Nonreciprocal Critical Current in a Superconductor Oxide Interface, C. Luth, R. Schalip, L. Sloan, J. Singh, M. Disiena, and S. Banerjee, Device Research Conference,

June 2025

1240. Diode Effect from Increased Flux Pinning of Iron Based Superconductor Proximity Effect, C. Luth, R. Jha, M. Disiena, R. Schalip, L. Sloan, and S. Banerjee, Electronic Materials Conference, June 2025.

1241. Improved Accuracy and Efficiency in Full-Band Semi-Classical Monte Carlo Carrier Transport Simulations via Smearing and Marching Tetrahedra Methods, Donghyeok Lee, Seong Woo Kang, Leonard F. Register, Sanjay K. Banerjee, Jiwon Chang, SISPAD Conference, Grenoble 2025.

1242. Giant memory window performance and low power consumption of hexagonal boron nitride monolayer atomristor, Sung Jin Yang, Yu-Rim Jeon, Dongyoon Kim, Sivasakthya Mohan, Shanmukh Kutagulla, Matthew Disiena, Sanjay K. Banerjee and Deji Akinwande , *npj 2D Materials and Applications* volume 9, Article number: 9 (2025).

1243. Proximity Effect of Antiferromagnetic Material on FeSeTe Superconductor Hongming Zhang,* Christopher Luth, Rajveer Jha, Luke Sloan, Matthew Disiena, Jatin Singh, and Sanjay K. Banerjee Cite This: ACS Appl. Mater. Interfaces 2025, 17, 12797−12804

1244. Enhancing chemical vapor deposition growth and fabrication techniques to maximize hole conduction in tungsten diselenide for monolithic CMOS integration Special Collection: Honoring John Ekerdt's Contributions to Chemical Reaction Engineering and Surface Chemistry for Electronic Materials Jatin Vikram Singh ; Matthew N. Disiena ; S. S. Teja Nibhanupudi ; Nicholas T. Watanabe ; JaeHyun Ahn ; Dong-Won Kim; Anupam Roy ; Sanjay K. Banerjee J. Vac. Sci. Technol. A 43, 022201 (2025)

1245. Analytical Modeling of Short-Channel Effects in BEOL-Compatible Thin-Film Transistors Nilesh Pandey, Ujwal Radhakrishna, Jian-Yu Lin, Chang Niu, Orlando Lazaro, Gianluca Boselli , Luigi Colombo, Baher Haroun, Peide D. Ye, Leonard F. Register and Sanjay K. Banerjee, IEEE TRANSACTIONS ON ELECTRON DEVICES, VOL. 72, NO. 5, MAY 2025.

1246. Fabrication and Characterization of Ga2O3 FinFETs on Patterned Silicon Substrate Hadi Ebrahimi-Darkhaneh, Leunam Fernandez-Izquierdo, Josefina Arellano-Jimenez, Manuel Quevedo-Lopez, and Sanjay K. Banerjee, Advanced Electronic Materials, 2025.

1247. Engineering Si-Qubit MOSFET: Quantum-Electrostatic Integration at Cryogenic Temperatures Nilesh Pandey, Dipanjan Basu, Yogesh Singh Chauhan , Leonard F. Register , and Sanjay K. Banerjee, IEEE TRANSACTIONS ON ELECTRON DEVICES, VOL. 72, NO. 7, JULY 2025.

1248. CBRAM based on CVD-grown $MoSe_2$ with the coexistence of volatile and non-volatile resistive switching, Wu, Siyu, Singh, JV, Schalip, R, Nibhanupudi, SST, Roy, A, Banerjee, SK , JOURNAL OF APPLIED PHYSICS, Volume, 138, Issue 3, 2025.