Savas Kaya

Address:	School of EE&CS, 361 Stocker Center	Tel:	+1-740-5971633
	Ohio University, Athens OH 45701	web:	http://savaskaya.net
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EDUCATION		
Graduate	1994-1998	 PhD in Semiconductor Device Electronics. Imperial College of Science, Technology & Medicine, University of London. Thesis: Electrical Transport in Strained Silicon Quantum Wells on Vicinal Substrates. Researched into the physics and application of novel Si/SiGe heterojunctions on flat and tilted substrates, using full range of advanced nanoelectronic design, fabrication and measurement tools.
	1993-1994	MPhil in Semiconductor Physics & Microelectronic Engineering. Darwin College, University of Cambridge. Thesis: Liquid Crystal Polarisation Insensitive Liquid Crystal Switches for Optical Arrays. Taught course focused on the theory and application of novel microelectronic and optoelectronic devices and semiconductor materials.
Undergraduate	1988-1992	BSc in Electronics & Communication Engineering. Department of Electronics and Communication, Istanbul Technical University. 73.6% average—11 th in graduation ranking out of 180. Opted in the final year for <i>Microelectronics</i> package with a strong emphasis on analogue and digital VLSI design.

WORK EXPERIENC	CE		
2013-Present 2010	Professor, School of Electrical Engineering and Computer Science, Ohio University. Visiting Professor, Dept of Electrical and Computer Engineering, University of California Davis Collaborative research for 8 months with Prof. Saif Islam's group, primarily focusing on the use of nanowires and nanostructured materials for low-voltage corona generation in air filtering and cooling applications.		
2007-2013 2001-2007	Associate Professor, School of Electrical Engineer Assistant Professor, School of Electrical Engineer Teaching and carrying out research in novel semicond devices, characterization techniques.	ring and Computer Science, Ohio University. ing and Computer Science, Ohio University. luctor and nanostructured materials, fabrication processes,	
	Instructor for the following courses:		
	EE1024 Intr. to Digital Design	EE103 Intr. to Electronic and Computer Eng	
	EE3343 Electronics I	EE3973 Electronics II	
	EE3713 Probability & Statistics	EE4183 Micro-Nano Fabrication	
	EE4153 VLSI Design I	EE4900 Flexible Electronics	
	EE518 Nanoelectronics & Nanotechnology	EE6183 Advanced Nanoelectronic Devices	
1998-2001	Post-doctoral Researcher, Nanoelectronics Resea Worked in independent and team-oriented research pr MOSFET architecture using Si/SiGe material as well a research into 'atomistic' simulations of fluctuation pher numerical tools in modeling of semiconductor below 10 hydrodynamic models, and advanced Monte Carlo par planning and grant applications.	rch Centre, University of Glasgow. rojects mainly on the numerical modeling and down scaling of is techniques for RF and low-power circuitry. Also took part in nomena in ultra-small MOSFETs. Employed a wide range of 00 nm including traditional drift-diffusion, energy, balance or rticle simulation techniques. Also involved in teaching, research	
1996-1997	Teaching Assistant, University of London, Imperia Demonstrated experiments for <i>Electronics Laboratory</i> switching, DSP using Matlab©, analogue control, mod	I College of Science, Technology & Medicine. <i>II.</i> Experiments covered AD/DA converters, diode and transistor ulation techniques and amplifiers.	
1992-1993	Research & Teaching Assistant, Istanbul Technica Engaged with research into Capacitive Threshold Log	Il University. ic and taught as course tutor for <i>Electronics I</i> .	

RESEARCH GRANTS			
Baker Award	\$10,000 Completed	PI, Breakdown of Universal Mobility Behavior in decanano MOSFETS, July 2002.	
Stocker Faculty Enrichment	\$2,700 Completed	Support for travel & conference attendances, June 2004, June 2005, June 2010	
Ohio Univ. TTO & RCENT	\$12,000 Completed	PI, 3D Study of COSMOS Architecture, February 2005.	
Ohio Univ. BNNT	\$25k Completed	Co-PI: STM Analysis of Transmembrane Proteins: Case for Na/K ATPase, June 2006	
AFRL - Wyle Labs	\$15k Completed	PI, A Feasibility Study: DG-MOSFET Reconfigurable Systems, November 2006.	
Ohio Univ. BNNT	\$25k Completed	<i>PI</i> : An interdisciplinary Study of Structure & Function in Trans-membrane Proteins, June 2007-2009	
DARPA, SBIR Phase 1	\$33k Completed	Co-PI/Subcontractor: Tunable Analog Circuits with DG-MOSFETs, February 2009-July2009.	
NSF	\$300k Completed	PI, EMT: Study of Transmembrane Proteins for Biomolecular Logic & Storage, July 2006.	
ODOT	\$40k Completed	Co-PI: The Use of Atomic Force Microscopy to Evaluate Warm Mix Asphalt, Sep 2011-2012	
1804 Fund	\$80k Completed	PI: Enhancement of MOCVD Material Growth System for Advancement of Campus-Wide Research and Education in Nanomaterials and Nanodevices 2010-2012	
1804 Fund	\$70k Completed	PI: nan O -st U dio: An Interactive Undergraduate Laboratory of Nanotechnology to Enhance Research and Outreach in Ohio University, 2012-2014	
RCENT	\$60k Completed	Co-PI: Production of Bioasphalt from Sustainable Feedstocks via Catalytic Pathways, Sep 2012- 13	
UTC/AFRL	\$40k Completed	PI: Applications of Flexible Hybrid Electronics Technologies: Projections to 2040, 2015	
NSF	\$380k Completed	Co-PI: Power-Efficient Reconfigurable Wireless Network-on-Chip (NoC) Interconnects for Future Many-core Architectures, Sep 2011-2015	
NSF	\$1.3M Completed	Co-PI: MRI: Acquisition of Transmission Electron Microscope for Advanced Materials Relating to Energy Storage, Alternative Energy, Remediation, and Superconductors, Oct 2011-2015	
NSF	\$200k Completed	<i>PI: NUE – NanO StUdio</i> An Immersive Ambience for Nano Educational Experiences, January 2012	
ODOT	\$81k Completed	Co-PI: Influence of Warm Mix Asphalt on Aging of Asphalt Binders, Aug 2012-Dec 2014	
NSF	\$600k Completed	Senior Staff & UG Advisor: ACE: Appalachian Cohort for Engineering, July 2012-2015	
NSF	\$480k Ongoing	Co-PI: Efficient, Reconfigurable and Scalable Wireless Interconnects for On-Chip Communications in Many-Core Processors	
ODOT	\$128k Completed	Co-PI: Fundamental Evaluation of the Interaction between RAS/RAP and Virgin Asphalt Binders, Sep 2014	
Ohio Univ. GERB	\$845k Completed	Co-PI: Nanoscale & Quantum Phenomena Institute: GERB Proposal for International Prominence, July 2008-2018.	
Uni of Akron State of Ohio	\$120k Completed	High-performance Polymers for Flexible electronics	
ODOT	\$30k Completed	PI: Kinetic Energy Harvesting in Roadways Nov 2018-May 2019.	
Wright State Uni. State of Ohio	\$490k Ongoing	Co-PI: Assured Digital Microelectronics Education & Training Ecosystem Sep 2020-2022.	

NSF

MRI: Acquisition of a Cryogen-Free Physical Property Measurement System for Research and Education at Ohio University

Honors & Awar	DS
1988	173 rd among 650,000 candidates of Turkish National University Selection Examination.
1993-1994	Turkish Ministry of Education MSc Scholarship for UK.
1997	Best Student Paper Award, Silicon Nanoelectronics Workshop – VLSI Symposia, 8-9 Jun 1997, Kyoto, Japan.
1994-1998	Turkish Ministry of Education PhD Scholarship for UK.
2001	Invited and partially-funded participant to Quantum Transport Workshop, Maratea, Italy, 17-22 June 2001.
2004	Departmental Best Teacher Award: Represented School of EE&CS in the RCENT Awards.
2005	Invited and partially-funded participant to Summer School on <i>Mechanisms Of Membrane Transport</i> , Tilton, NH, 5-10 June 2005
2005	Recipient of Russ College Martin E. and Ann D. White Research Paper Award.
2006	Promotion to Senior Membership of IEEE in recognition of 10 years service to the profession
2006-2008	Air Force Summer Faculty Fellow - Sensors Directorate
2004, 2011	Departmental Best Paper Award: Represented School of EE&CS in the RCENT Best Paper Award.
2018	Recipient of Russ College Martin E. and Ann D. White Research Award.
2020-2021	Air Force Summer Faculty Fellow - Sensors Directorate

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UNADU		VIOLLO

Nov 2000	Yinpeng Zhao (co-advised), PhD Dissertation: "Simulation and Optimisation of SiGe MOSFETs"
Sep 2001	David Magot (co-advised), MSc Thesis: "Analysis of Line Edge Roughness for Device Simulations"
Feb 2004	James Fonseca, MS Thesis: "Accurate Treatment of Interface Roughness in Nanoscale Double-Gate MOSFETs using Non-Equilibrium Green's Functions"
Apr 2004	Rameshwari Chinchani, MS Thesis: "Strained Si/SiGe Heterostructure CMOS Devices: A Simulation Study of Linearity"
July 2004	Wei Ma, MS Thesis:,"Linearity Analysis of Single and Double-Gate SOI MOSFETs"
Nov 2005	Swetha Varadharajan, MS Thesis: "Analog and Digital Applications of DG-MOSFETs"
Apr 2006	Ahmad al-Ahmadi, PhD Dissertation: "COSMOS: A Novel Nanoscale CMOS Architecture"
Jun 2008	James Fonseca, PhD Dissertation: "Temporal & Steric Analysis of Ionic Permeation and Binding in Na+,K+-ATPase via Molecular Dynamics Simulations
Sep 2008	Darwin T. Ting, MS Thesis: "Reconfigurable Threshold Logic Gates Implemented in Nanoscale Double-Gate MOSFETs"
Jan 2009	Anish Kulkarni, MS Thesis: "Study of Tunable Analog Circuits Using Double Gate Metal Oxide Semiconductor Field Effect Transistors"
Jun 2010	Sunny Mishra, MS Project: "Simulation & Modeling of Ion-Transporting Membrane Proteins"
Aug 2010	Kendal Clark, PhD Dissertation: "STM Study of Molecular and Biomolecular Electronic Systems"
Sep 2010	Ravikiran Vuppuluri, MS Project: "Electrochemical Growth of Nanoporous Alumina Membranes and its Applications"
Nov 2011	Harshita Dasari, MS Project: "Microsphere Lithography: A Low Cost Next Generation Lithography for Nanodevice Fabrication"
May 2013	Kushal Wijesundara, MS Project: "Compact High Performance Relaxation Oscillators Using Double Gate MOSFETs"
Nov 2013	Isha Shrivastava, MS Thesis: "Development of Noble Metal Nanowires with Ultra High Surface to Volume Ratios"
July 2014	Daniel Carbaugh, MS Thesis: "Growth and Characterization of Silicon-Based Dielectrics using Plasma Enhanced Chemical Vapor Deposition"

(* Provisional)

Sep 2014	Sarah Scheithauer, MS Project: "Silicon Nitride Thin Films by Plasma Enhanced Chemical Vapor Deposition: A Process Optimization Study"
Oct 2014	Jason Wright, MS: "Design and Implementation of DC Magnetron Sputter Deposition System and Hall Effect System Via LabView"
Nov 2014	Soumyasanta Laha, PhD: "Analysis & Design of Radio Frequency Wireless Communication Integrated Circuits with nanoscale Double Gate MOSFETs"
pDec 2015	Leela Krishna Aravapilla, MS Project: "Schottky Barrier Double gate MOSFET for logical operations"
Dec 2016	Akanksha Rohit, MS Thesis: "Optimization and Characterization of a Capillary-Contact Based Micro-Plottter"
Oct 2018	Daniel Carbaugh, PhD Dissertation: "Novel Organic Resists for Micro-patterning and Device Engineering"
Nov 2018	Parthiban Rajan, PhD Dissertation: "Novel Capacitive Sensors for Chemical and Physical Monitoring in Microfluidics"
Nov 2019	Yunus Kelestemur, MS Thesis: "Wireless Transceiver Design for THz CMOS interconnects"
Sep 2021	Akanksha Rohit, PhD Dissertation: "Flexible Sensors and Smart Patches for Multimodal Sensing"
Jan 2022	Talha Furkan Canan, PhD Dissertation: "Design of Ultra-Compact and Low-Power sub-10 Nanometer Logic Circuits with Schottky Barrier Contacts and Gate Work-Function Engineering"
Dec 2021	Taiman A Siddiqui, MS Candidate: "Word Spotting and Chest Sound Detection on Resources Constrained MCUs"

Professional Service				
2000	Served as a member of Local Organizing Committee of IWCE7—7th International Workshop in Computational Electronics, which was held in Glasgow from 22-25 May 2000.			
2002-present	Active reviewer for the following professional journals: Solid-State Electronics, IEEE Transactions in Electron Devices, Electronic Letters, IEEE Transactions in Nanotechnology, IET Devices, Circuits & Systems, ETRI, VLSI Journal, IEEE Nanotechnology, Microelectronics Journal			
2003	Invited for NSF Review Panels			
2006	Served as a member of Local Organizing Committee of IEEE Nanotech—6 th International IEEE Nanotechnology Conference, which was held in Cincinnati, USA, from 17-20 July 2006.			
2007	Served as a member of Program Committee for SPIE Photonics East Symposia: Nanophotonics for Communication (IT407) & Nanomaterials (SA114), held in Boston, USA, from 9-12 September 2007.			
2008	Invited for NSERC (Canada) Proposal Review			
2009	Served as a member of Program Committee for SPIE Optics and Photonics Meeting, <i>Nanoepitaxy: Synthesis,</i> Characterization and Device Integration of Nanomaterials, San Diego, USA, August 2010.			
2011	Served as a member of Program Committee for <i>Micro-Nanotechnology</i> Sensors, Systems, and Applications Conference, held in Orlando, Florida, USA, May 2011.			
2011	Invited for NSF Review Panels (twice in 2011)			
2013	Invited for NSF Review Panel			
2014	Invited for NSF Review Panel			
2016	Invited for NSF ERC Review Panel			
2021	Served as a member of Program Committee for IEEE International Flexible Electronics Conference, Columbus, OH, USA, August 2021.			
2004-Present	Chaired Sessions in following conferences:IWCE 2003, ISDRS 2005; IEEE Nano 2006; SPIE Photonics East 2007; ICECS 2007, NSS5/SP-STM2 2008, SPIE Optics & Photonics 2009, MWSCAS 2010, NEWCAS 2012,IFETC 2021			

COMMITTEES SERVED

Thesis &
Dissertations

2001-Present

Served in +60 MS Thesis & +25 PhD Dissertation Committees, including students from the following departments: Electrical Engineering & Computer Science, Industrial Systems & Engineering, Chemical & Biomolecular Engineering, Mechanical Engineering, Civil Engineering, Physics & Astronomy, School of Film.

School of EE&CS	2001-2003 2004-2005 2006 2007-2008 2009-2010	Space Planning; UG Recruitment; Research; Assessment & Accreditation UG Recruitment; Research; ABET Accreditation Graduate; UG Recruitment & ABET Accreditation Promotion & Tenure; Graduate; UG Recruitment Curriculum, Recruitment & ABET
Russ College of Eng & Tech	2011-present 2001-2003 2004-2005 2006-2009 2011-present 2013-present	Graduate, Space Planning, Recruitment Library, NQPI/CMSS Liason Library, NQPI/CMSS Liason Integrated Eng PhD Steering; BioMedical Eng Steering; NQPI/CMSS Liason Center for Electrochemical Research Steering; IT Technology; NQPI/CMSS Liason Scholarship & Recruitment Committee; Information Technology Advisory Committee
Ohio Univ.	2004-2005 2010-2013 2011	Faculty Senate (Substitute Member) Council for Research, Scholarship and Creative Activity (CRESCA) Ad Hoc Committee for Quantitative Biology Institute Five-year Review
Personal		
Leadership	2001-Present 2004-Present 1996-1998	Faculty Advisor, Ohio University Turkish Student Association. Faculty Advisor, IEEE Ohio University Athens Student Chapter. President, Imperial College Turkish Society. Represented and administered the society in national and international events.
Skills	Languages Computers Software	Fluent and proficient in Turkish & English Experienced user on and capable of administration of computers running <i>Linux/Unix, Windows</i> and <i>MacOS</i> operating systems. Programming in Pascal, FORTRAN and HTML Expert user in common desktop publishing and office utility programs. Advanced user of <i>Synopsis</i> <i>ECAD/TCAD</i> tools, including SENTAURUS, MEDICI, TSUPREM. Experience with ECAD tools by CADENCE and Mentor Graphics. Extensive and advanced user of general scientific tools such as MATLAB, Mathematica, XMGR, LaTeX <i>etc.</i>
Continuous Professional Development	Current Mode C Speaking Techn Mentoring: Work	<i>ircuits,</i> Continuing Education Centre, Imperial College, London, 8-10 Jul 1996. <i>ically: Workshop A,</i> Dept. of Humanities, Imperial College, London, 17-18 April 1997. <i>king with Small Groups,</i> Teaching & Service, University of Glasgow, 1 st Oct 1999.
Membership	Have affiliation w	vith the following professional organizations IEEE, SPIE
Interests	Travel, reading on science, philosophy and mysticism, cinema & air shows, chess. Sports: basketball, European soccer and squash	

CITATION STATISTICS

SCHOLAR.GOOGLE.COM STATISTICS

	All	Since 2016
Citations	3407	1322
h-Index	25	20
i-10 Index	44	27

Citations per year



RESEARCHGATE.NET Rankings: 34.17 (92.5% percentile)

REFERENCES

Available upon request

Theses:

1. "Polarisation Insensitive Liquid Crystal Switches for Optical Arrays", MPhil, University of Cambridge, 1994.

2. "Electrical Transport in Strained Silicon Quantum Wells on Vicinal Substrates", *PhD, Imperial College -University of London*, 1999.

Book Chapters:

1. "Atomistic Simulation of Decanano MOSFETs", A Asenov, A R Brown and **S Kaya**, in "Predictive Simulation of Semiconductor Processing: Status and Challenges", Eds. J. Dabrowski & E. R. Weber, Springer, Berlin, pp.111-156 (2004).

2. "Tunable Analog and Reconfigurable Digital Circuits with Nanoscale DG-MOSFETs", **S Kaya**, H F A Hamed and S Laha in *"Advances in Analog Circuits"*, Ed. E. Tlelo-Cuautle, INTECH Open Access, Vienna, ISBN: 978-953-307-323-1, pp.181-209 (2011).

3. "Radio Frequency IC Design with Nanoscale DG-MOSFETs", S Laha & **S Kaya** in "Analog Circuits", Ed. E. Yuping Wu, INTECH Open Access, Vienna, ISBN: 980-953-307-694-7, pp.19.47 (2013).

Refereed Journals:

1. "<u>Reflections of Cybersecurity Workshop for K-12 Teachers and High School Students</u>", C Mourning, D Juedes, A Hallman-Thrasher, H Chenji, S Kaya, A Karanth, *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education*, vol.2, p.1127, 2022. *DOI: 10.1145/3478432.3499094*

2. <u>"Influence of Lead Source on the Film Morphology of Perovskites Spin-Coated on Planar and Mesoporous Architectures under Ambient Conditions</u>", J.R. Vicente, W.M. Jadwisienczak, S. Kaya and J Chen, *Journal of Electronic Materials*, vol. 51, pp.1623–1631, 2022. DOI:10.1007/s11664-022-09429-6

3. "Evaluation of Moisture Damage in Asphalt Mixtures at Macro-and Nanoscales", MD Nazzal, L Abu Qtaish, A Al-Hosainat, S Abu Talha, **S Kaya**, AR Abbas, Journal of Materials in Civil Engineering 33 (12), 04021369. 2021.

4. "Fine-Grain Reconfigurable Logic Circuits for Adaptive and Secure Computing via Work-Function Engineered Schottky Barrier FinFETs", TF Canan, **S Kaya**, H Chenji, A Karanth, *IEEE Journal on Exploratory Solid-State Computational Devices and Circuits*, vol.7(2), 150-158, 2021, *DOI:/10.1109/JXCDC.2021.3120977*

5. "<u>A Systematic Study of Wearable Multi-Modal Capacitive Textile Patches</u>", A Rohit and **S Kaya**, *IEEE Sensors Journal*, 38234, 2021, DOI: 10.1109/JSEN.2021.3059224

6. "<u>A review of polymethyl methacrylate (PMMA) as a versatile lithographic resist–With emphasis on UV exposure</u>", F Rahman, DJ Carbaugh, JT Wright, P Rajan, SG Pandya, **S Kaya**, *Microelectronic Engineering* 224, 111238, 2020.

7. "Wetting behaviors of fluoroterpolymer fiber films", S Ok, J Sheets, S Welch, T Liu, **S Kaya**, DR Cole, *e-Polymers* 20 (1), 393-410, 2020.

8. "<u>Ultracompact and Low-Power Logic Circuits via Workfunction Engineering</u>", T F Canan, **S Kaya**, A Karanth, A. Louri, *IEEE Journal on Exploratory Solid-State Computational Devices and Circuits*, vol.5(2), pp.94-102, 2019.

9. "Lithographic tone reversal in optical exposure of polymethyl methacrylate (PMMA) resist", D J Carbaugh, **S Kaya**, and F Rahman, *Materials Research Express*, Vol.6, p.045308, 2019.

10. "<u>Ambipolar SB-FinFETs: A New Path to Ultra-Compact sub-10nm Logic Circuits</u>", T F Canan, **S Kaya**, A Karanth, H Xin, A. Louri, *IEEE Transactions on Electron Devices* (TED), vol.66(1), pp.255-263, 2018.

11. "<u>Sustainability in Network-on-Chips by Exploring Heterogeneity in Emerging Technologies</u>", A Karanth, **S Kaya**, A Sikder, D Carbaugh, S Laha, A Louri, Hao Xin, J Wu and D DiTomaso, in print *IEEE Transactions on Sustainable Computing* (TSUC), 2018.

12. "<u>Nanoscale and Macroscale Characterization of the Influence of RAP and RAS on Cracking Resistance of Asphalt Mixes</u>", M D Nazzal, E Holcombe, S S Kim, A Abbas, **S Kaya**, *Journal of Materials in Civil Engineering* 30 (12), 04018334, 2018.

13. "<u>Multi-scale evaluation of the effect of ras on the fracture properties of asphalt mixtures</u>", M D Nazzal, E Holcombe, S S Kim, A Abbas, **S Kaya**, *Construction and Building Materials*, vol.175, 126-133, 2018.

14. "<u>Micromechanical and Chemical Characterization of Foamed Warm-Mix Asphalt Aging</u>", L Abu-Qtaish, M D Nazzal, A Abbas, **S Kaya**, *Construction and Building Materials*, vol.175, 126-133, 2018.

15. "<u>Electronic cigarette vapor alters the lateral structure but not tensiometric properties of calf lung surfactant</u>", R J Przybyla, J Wright, P Rajan, S Nazemidashtarjandi, **S Kaya**, and M A Farnoud, *Respiratory Research*, *18*(1), p.193, 2017

16. "<u>Monopoles Loaded With 3-D-Printed Dielectrics for Future Wireless Intrachip Communications</u>", J Wu, A Kodi, **S Kaya**, A Louri and H Xin.. *IEEE Transactions on Antennas and Propagation*, 65(12), p.6838. 2017.

17. "Evaluating Asphalt Binders Prepared with Different Processes to Meet the Same Performance Grade: Use of Atomic Force Microscope", E Holcomb, M D Nazzal, W Mogawer, A Austerman and **S Kaya**, *Journal of the Transportation Research Board*, vol.2632, p.99, 2017.

18. "Enhancing the dry etch resistance of polymethyl methacrylate patterned with electron beam lithography", D J Carbaugh, S G Pandya, J T Wright, **S Kaya** and F Rahman, *Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena,* 35(4), p.041602, 2017.

19. "<u>Combination photo and electron beam lithography with polymethyl methacrylate (PMMA) resist</u>", D J Carbaugh, S G Pandya, J T Wright, **S Kaya** and F Rahman, *Nanotechnology*, 28(45), p.455301, 2017.

20. "<u>AFM-Based Approach to Study Blending between RAP and Virgin Asphalt Binders</u>", L. Abu-Qtaish, M D Nazzal, **S Kaya**, S S Kim, A. Abbas and Y Abu Hassan, *Journal of Materials in Civil Engineering*, 30(3), p.04017300, 2017.

21. "Tuning hydrophobicity of a fluorinated terpolymer in differently assembled thin films", S Ok, J Sheets, S Welch, **S Kaya**, A Jalilov, DR Cole, *Journal of Polymer Science Part B: Polymer Physics* 55, vol.8, pp.643-657, 2017.

22. "<u>Antennas and Channel Characteristics for Wireless Networks on Chips</u>", W Rayess, D W. Matolak, **S Kaya** and A Kodi, *Wireless Personal Communications, pp.1-18, 2017. doi:10.1007/s11277-017-4144-0*

23. "<u>Transparent and visible light-insensitive acrylic photoresist for negative tone optical lithography</u>", D J Carbaugh, **S Kaya**, and F Rahman, *Journal of Vacuum Science & Technology B*, Vol.35, p.011601, 2017.

24. "<u>A Nano-Scale Approach to Study the Healing Phenomenon in Warm Mix Asphalt</u>", M Nazzal, L Abu-Qtaish, **S Kaya**, A. Abbas, and D. Powers, *Journal of Testing and Evaluation*, vol.45, p.5, 2016

25. "Electrical and Photoconductivity Properties of Al/CdFe2O4/p-Si/Al Photodiode", M Cavas, F Yakuphanoglu, and **S Kaya**, *Journal of Photonics, Article ID:* 4739020, 2016.

26. "<u>An Automated Perfusion System for Modifying Cell Culture Conditions over Time</u>.", N B Whitticar, E W Strahler, P Rajan, **S Kaya** and C Nunemaker, *Biological Procedures Online*, Vol.18, p.19, 2016.

27. "<u>Thermal oxidation of silicon in a residual oxygen atmosphere—the RESOX process— for self-limiting growth of thin silicon dioxide films</u>", J T Wright, D J Carbaugh, M E Haggerty, A L Richard, D C Ingram, **S Kaya**, W M Jadwisienczak and F. Rahman, *Semiconductor Science & Technology, Vol.10, p.105007, 2016.*

28. "<u>Dry photolithography through ultraviolet radiation-induced photo- etching of polymethyl methacrylate</u>", D J Carbaugh, J T Wright, P Rajan, **S Kaya** and F Rahman, *Thin Solid Films*, 615, pp.423–426, 2016.

29. "<u>Development-less deep ultraviolet positive tone photolithography with polymethyl methacrylate</u>", D J Carbaugh, J T Wright, P Rajan, **S Kaya** and F Rahman, Journal of Vacuum Science & Technology B, Vol.34, p.041609, 2016.

30. "<u>Multi-scale evaluation of the effect of rejuvenators on the performance of high RAP content mixtures</u>", M Nazzal, W Mogawer, A Austerman, L Abu-Qtaish, **S Kaya**, *Construction and Building Materials*, 101, pp.50-56. 2015.

31. "<u>A Systematic Study of Plasma Activation of Silicon Surfaces for Self Assembly</u>", S Kaya, P Rajan, H Dasari, D C Ingram, W Jadwisienczak, F Rahman, *Applied Materials & Interfaces*, 7(45), pp. 25024–25031. 2015.

32. "Using Atomic Force Microscopy to Evaluate the Nanostructure and Nanomechanics of Warm Mix Asphalt", M Nazzal, L Abu-Qtaish, **S Kaya**, and D Powers, *Journal of Materials in Civil Engineering*, 27(10), 2015. 33. "<u>A New Frontier in Ultra-low Power Wireless Links: Network-on-Chip and Chip-to-Chip Interconnects</u>", S Laha, **S Kaya**, D W. Matolak, W Rayess, D DiTomaso, and A Kodi, *IEEE Transactions on CAD of Integrated Circuits And Systems, IEEE Transactions on CAD for Integrated Circuits and Systems*, 34(2), pp.186-198, <u>SEP</u>2015.

34. "Improved Thermal Stability and Narrowed Line Width of Photoluminescence from InGaN Nano-rod by Ytterbium doping", J Wang, K Dasari, K Cooper, V R Thota, J Wright, R Palai, D C Ingram, E A Stinaff, **S Kaya**, W M. Jadwisienczak, *Physica Status Solidi* (c), 12(4-5), p.413-417, 2015.

35. "<u>A-WiNoC: Adaptive Wireless Network-on-Chip Architecture Using Energy-Efficient Transceivers</u>", D DiTomaso, A Kodi, D W. Matolak, **S Kaya**, S Laha, and W Rayess, *IEEE Transactions on Parallel and Distributed Systems*, vol.34, no.2, pp.186-198, 2015.

36. "<u>Multi-Scale Evaluation of the Composite Asphalt Binder in High RAP Mixtures</u>", M Nazzal, W Mogawer, **S Kaya** and T Bennert, ASCE Journal of Materials in Civil Engineering, 26(7), pp. 04014019, 2014.

37. "<u>Cluster and Thickness Dependence of Ferromagnetism in Nickel In Situ-Doped Amorphous AIN Thin Films</u>", H Tanaka, W M Jadwisienczak, **S. Kaya**, G. Chen, C. Wan and M.E. Kordesch, J of Electronic Mats, Vol. 42, No. 5, 2013.

38. "Bias optimization of 2.4 GHz double gate MOSFET RF mixer", S Laha, and **S Kaya**. Analog Integrated Circuits and Signal *Processing*, pp: 1-9, 2013.

39. "<u>Channel Modeling for Wireless Networks-on-Chips</u>", D W. Matolak, A Kodi, and **S Kaya**, *IEEE Journal of Communications*, vol.51, no.6, pp.180-186, 2013.

40. "Fundamental Characterization of Nano-Clay Asphalt Composites", M. Nazzal, **S Kaya**, T Günay and P Ahmedzade, ASCE Journal of Nanomechanics and Micromechanics, 3(1), pp.1–8., 2013.

41. "<u>UV and Oxygen Sensing Properties and Space Charge Limited Transport of Sonochemically Grown ZnO Nanowires</u>", A P Nayak, T-C Lin, D Lam, S Kaya, M. S Islam, *Nanoscience & Nanotechnology*, Vol. 4, 10, pp. 977-982, 2012.

42. "<u>Wireless Networks-on-Chips: Architecture, Wireless Channel, and Devices</u>", D W. Matolak, A Kodi, **S Kaya**, D DiTomaso, S Laha, W Rayess, *IEEE Wireless Communications,* vol.19, no.5, pp.58-65, 2012.

43. "<u>Electrochemically Grown Metallic Nanocomb Structures on Nanoporous Alumina Templates</u>", **S Kaya** and E Atar, *Appl. Phys Lett.* vol.98, p.223105, 2011.

44. "Improved Reconfigurability and Noise Margins in Threshold Logic Gates via Back-Gate Biasing in DG-MOSFETs", **S Kaya**, H F A Hamed and D T Ting, *J Analog Integr. Circ. & Sig. Process.*, vol.68, p.101. 2011.

45. "<u>Growth of metallic nanowires on nanoporous alumina templates: Nanocomb Structures</u>", E Atar, R V Vuppuluri and **S Kaya**, *Proceedings of SPIE*, vol. 7768, 77680S, 2010.

46. "<u>Widely tunable low-power high-linearity current-mode integrator built using DG-MOSFETs</u>", **S Kaya**, H F A Hamed and A Kulkarni, *J Analog Integr. Circ. & Sig. Process.*, **62**(2), 215-222, 2009, DOI 10.1007/s10470-009-9334-6.

47. "Learning Before Erring: A Brief Note on the Influence of Dielectric Materials to Pursue Moore's Law", W. A. Young II, S Kaya, and G R Weckman, Int. J of Industrial Engineering - Theory, Applications and Practice, **16**(2), 91-98, 2009.

48. "<u>Use of nano-scale double-gate MOSFETs in low-power tunable current mode analog circuits</u>", H F A Hamed, **S Kaya** and J Starzyk, *J Analog Integr. Circ. & Sig. Process.*, vol.54, p.211. 2008.

49. "Exploration of Na+,K+-ATPase Ion Permeation Pathways via Molecular Dynamic Simulation and Electrostatic Analysis", J. E. Fonseca, S. Mishra, **S Kaya** and R. F. Rakowski, *J Computational Electronics,* vol.7, p.20, 2008.

50. "Low-power tunable nanocircuits with DG-MOSFETs for current sensing applications, **S Kaya** and H F A Hamed, *Proceedings* of *SPIE*, vol.6769, 67690D, 2007.

51. "<u>Reconfigurable Threshold Logic Gates with nano-scale DG-MOSFETs</u>", **S Kaya**, H F A Hamed, D T Ting and G Creech, *Solid-State Electronics*, vol. 51, p. 1301, 2007.

52. "<u>Temporal and steric analysis of ionic permeation and binding in SERCA via molecular dynamic simulations</u>", J. E. Fonseca, **S. Kaya** and R. F. Rakowski, *IOP Nanotechnology*, vol.18, p.424022, 2007.

53. "Low-Power Tunable Analog Circuit Blocks Based on Nanoscale Dual-Gate MOSFETs", **S Kaya**, H F A Hamed and J Starzyk, *IEEE Trans Circ. & Sys II*, vol. 54, p. 571, 2007.

54. "<u>Temporal Analysis of Valence & Electrostatics in Ion-Motive Sodium Pump</u>", J E Fonseca, **S Kaya**, S Guennoun and R F Rakowski, *J Computational Electronics*, vol.6, p.381, 2007.

55. "Power•Delay Product in COSMOS Logic Circuits", A Al-Ahmadi and **S Kaya**, *J Computational Electronics*, vol.5, p.305, 2006.

56. "<u>Electro-Chemical Modeling Challenges of Biological Ion Pumps</u>", R F Rakowski, **S Kaya** and J E Fonseca, *J Computational Electronics*, vol.4, p.189, 2005.

57. "Search for Optimum and Scalable COSMOS", S Kaya and A Al-Ahmadi, J Computational Electronics, vol.4, p.119, 2005.

58. "<u>RF Performance of Strained SiGe pMOSFETs: Linearity and Gain</u>", W Ma and **S Kaya**, *J Computational Electronics*, vol.4, p. 269, 2005.

59. "COSMOS: A New MOS Device Device Paradigm", S Kaya, IEEE Transactions Nanotechnology, vol. 5, p. 588, 2005.

60. "Optimization of RF linearity DG-MOSFETs", S.Kaya and W Ma, IEEE Electron Device Letters, vol. 25, p. 308, 2004.

61. "Impact of device physics on DG and SOI MOSFET linearity", W Ma and S.Kaya, Solid-State Electronics, vol. 48, p. 1741, 2004.

62. "Accurate treatment of interface roughness in nanoscale DG MOSFETs using non-equilibrium Green's functions", J E Fonseca and **S.Kaya**, *Solid-State Electronics*, vol. 48, p. 1843, 2004

63. "Study of RF Linearity in sub-50nm MOSFETs Using Simulations", W Ma, S.Kaya and A.Asenov, *J Computational Electronics*, vol.2, pp.347-352, 2003.

64. "Statistical Fluctuation of Universal Mobility Curves in sub-100nm MOSFETs due to Random Oxide Interface", **S Kaya**, *Physica Status Solidi (b)*, vol.239, p.110, 2003.

65. "<u>Simulation of Intrinsic Parameter Fluctuations in Decananometre and Nanometre scale MOSFETs</u>", A.Asenov, A.R.Brown, J.H.Davies, **S Kaya** and G.Slavcheva, *IEEE Transaction Electron Devices*, vol. 50, p. 1837, 2003.

66. "Intrinsic Parameter Fluctuations in Decananometre MOSFETs Introduced by Gate Line Edge Roughness", A Asenov, **S** Kaya and A R Brown, *IEEE Transaction Electron Devices*, vol. 50, p. 1254, 2003.

67. "Breakdown of Universal Mobility Curves in sub-100nm MOSFETs", **S Kaya**, A Asenov and S Roy, *IEEE Trans Nanotech.*, vol.1, p.260, 2002.

68. "<u>On the Breakdown of Universal Mobility Curves in sub-100nm MOSFETs: A 3D Brownian Simulation Framework</u>", **S Kaya**, S Roy and A Asenov, *J Computational Electronics*, p.375-379, 2002.

69. "Implications of Imperfect Interfaces and Edges in Ultra-small MOSFET Characteristics", A Asenov, **S Kaya** and A R Brown, *Physica Status Solidi (b)*, vol.233, p.101, 2002.

70. "Intrinsic Threshold Voltage Fluctuations in Decanano MOSFET's due to Local Oxide Thickness Variations" A Asenov, **S** Kaya and J H Davies, *IEEE Transaction Electron Devices*, vol. 49, p. 112, 2002.

71. "Quantum Corrections to the 'Atomistic' MOSFET simulations", A Asenov, G Slavcheva, **S Kaya** and R Balasubramaniam, *VLSI Design*, vol.13, p. 15, 2001.

72. "On the Mobility Extraction for HMOSFETs", U N Straube, A G Evans, G Braithwaite, **S Kaya**, J Watling and A Asenov, *Solid-State Electronics*, vol. 45, p. 527, 2001.

73. "Effective Mobilities in Pseudomorphic Si/SiGe/Si p-channel MOSFETs with thin silicon capping layers" M J Palmer, G Braithwaite, T J Grasby, P J Phillips, M J Prest, E H C Parker, T E Whall C P Parry, A M Waite, A G R Evans, S Roy, J R Watling, **S Kaya** and A Asenov. Applied Physics Letters, 78(10), p. 1424, 2001.

74. "<u>Oxide Thickness Variation Induced Threshold Voltage Fluctuations in Decanano MOSFET's: A 3D Density Gradient</u> <u>Simulation Study</u>", A Asenov, **S Kaya**, J H Davies and S Saini. *Superlattices & Microstructures*, vol. 28, No. 5/6, p. 507, 2000.

75. "<u>RF Analysis Methodology for Si and SiGe FETs Based on Transient Monte Carlo Simulation</u>" S Roy, **S Kaya**, A Asenov and J R Barker, *IEICE Transactions in Electronics*, vol. E83-**C**, p. 1224, 2000.

76. "Indication of Velocity Overshoot in strained Si0.8Ge0.2p-channel MOSFET's", **S Kaya**, Y-P Zhao, J R Watling, A Asenov, J R Barker, G Ansaripour, G Braithwaite, E H C Parker and T E Whall, *Semiconductor Science & Technology*, 15, p. 573, 2000.

77. "<u>Drift Diffusion and Hydrodynamic Simulations of Si/SiGe p-MOSFETs</u>", Y P Zhao, J R Watling, **S Kaya**, A Asenov and J R Barker Material Science & Engineering B, 72, p.180, 2000.

78. "MOS gated Si:SiGe quantum wells by anodic oxidation" J C Yeoh, P W Green, T J Thornton, **S Kaya**, K Fobelets and J M Fernández Semiconductor Science & Technology, 13, p.1442, 1998

79. "<u>Si/SiGe quantum wells grown on vicinal Si(001) substrates: morphology, dislocation dynamics and transport properties</u>", P Waltereit, J M Fernandez, **S Kaya** and T J Thornton, Applied Physics Letters, 72(18), p.2262, 1998.

80. "Evidence For Inter-Miniband Scattering Due to Electron Heating in Si:SiGe Quantum Wells grown on Tilted Substrates", **S** Kaya, T J Thornton, K Fobelets, P W Green and J M Fernandez, *Physica Status Solidi (b)*, 204, p.227, 1997.

81. "<u>Si:SiGe Quantum wells grown on (118) substrates: surface morphology and transport properties</u>", T J Thornton, J M Fernandez, **S Kaya**, P W Green and K Fobelets Applied Physics Letters, 70(10), p.1278, 1997.

Conferences - Refereed Full Papers in Proceedings:

1. "Flexible Multi-Modal Capacitive Sensors with Polyurethane Foam Dielectrics for Wearables", A. Rohit and S. Kaya, IEEE International Flexible Electronics Technology Conference, IFETC'2021, Columbus, OH, 8-11 Aug 2021

2. "<u>Vital Sign Monitoring via Flexible Capacitive Sensors: A Comparative Study</u>", A. Rohit, T.F. Canan and **S. Kaya**, *IEEE International Flexible Electronics Technology Conference, IFETC*'2021, Columbus, OH, 8-11 Aug 2021

3. "<u>A 60 GHz High Gain Narrow-Band 150 nm InGaAs based Power Amplifier</u>", S Laha and **S Kaya**, *IEEE 21st Wireless and Microwave Technology Conference (WAMICON)*, Sand Key, FL, USA, pp.1-4, 28-29 Apr 2021.

4. "<u>Ultra-Flexible and Durable Textile Capacitors with Piezoelectric PVDF Dielectrics for Wearables</u>" A. Rohit, Y. Kelestemur, and **S. Kaya**, *IEEE FLEPS*, *Virtual Event*, Manchester, England, UK, 16-19 Aug 2020

5. "<u>Reconfigurable Gates with Sub-10nm Ambipolar SB-FinFETs for Logic Locking & Obfuscation</u>", T.F. Canan, **S Kaya**, H Chenji, A Karanth, *IEEE 63rd MWSCAS*, pp. 953–956, *Virtual Event*, Springfield, MA, USA, 9-12 Aug 2020

6. "<u>Development of Capacitive Wearable Patches and Bands for Data Fusion in Complex Physical Activities</u>", A. Rohit, Y. Kelestemur, J. C. Runyon, and **S. Kaya**, *IEEE IFETC* 2019, Vancouver, BC, Canada, 11-14 Aug 2019

7. "Laser Scribed Carbon Layers: Process Optimization & Sensor Applications", T. Cai, **S. Kaya**, and W. Jadwisienczak, *IEEE IFETC* 2019, Vancouver, BC, Canada, 11-14 Aug 2019

8. "<u>Wearable Capacitive Patches for Data Fusion in Biomedical Monitoring & Physical Activity</u>," A. Rohit, Y. Kelestemur, J. C. Runyon, and **S. Kaya**, *IEEE* 62nd *MWSCAS*, pp. 37–40, Dallas, USA, 3-7 Aug 2019

9. "<u>Chemico-Capacitive Sensing via Dielectric Loading</u>," P. Rajan, **S. Kaya**, J. Wright, A. Rohit, T. Cai, and P. Hanlon, *IEEE* 62nd *MWSCAS*, pp. 1187–1190, Dallas, USA, 3-7 Aug 2019

10. "<u>A Compact Continuous non-Invasive Glucose Monitoring System with Phase-Sensitive Front End</u>." S. Laha, **S Kaya**, N Dhinagar, Y Kelestemur, and V Puri, 2018 IEEE Biomedical Circuits and Systems Conference (BioCAS), pp. 1-4. IEEE, 2018.

11. "10T and 8T Full Adders Based on Ambipolar XOR Gates with SB-FinFETs", T F Canan, **S Kaya**, A Kodi, H Xin and A Louri, *Proc.* 25th Int. Conference on Electronic Circuits and Systems – ICECS'25, Bordeux, France, 9-12 Dec 2018.

12. "Sub-THz Tunable Push-Push Oscillators with FinFETs for Wireless NoCs", Y Kelestemur, S Laha, **S Kaya**, A Kodi, H Xin and A Louri, *Proc. Int.* 57th Midwest Symposium on Circuits and Systems – MWSCAS'57, Windsor, Canada, pp.100-103, 5-8 Aug 2018.

13. "<u>Scalable Power-Efficient Kilo-Core Photonic-Wireless NoC Architectures</u>", A Kodi, K Shifflet, **S Kaya**, S Laha, A Louri, IEEE International Parallel and Distributed Processing Symposium (IPDPS), Vancouver, Canada, p.1010-1019, 21-25 May 2018,

14. "<u>Using AFM to Study the Interaction Between Recycled Asphalt Materials and Virgin Asphalt Binders</u>", M D Nazzal, E Holcombe, S S Kim, A Abbas, **S Kaya**, *Transportation Research Board* 97th *Annual Meeting*, Washington DC, 7-11 Jan 2018.

15. "<u>Ultra-Compact sub-10nm Logic Circuits Based on Ambipolar SB-FinFETs</u>", T F Canan, **S Kaya**, A Kodi, H Xin and A Louri, *Proc. Int.* 56th *Midwest Symposium on Circuits and Systems – MWSCAS*'56, Boston, MA, USA, pp.100-103, 6-9 Aug 2017.

16. "<u>mm-Wave Tunable Colpitts Oscillators Based on FinFETs</u>", Y Kelestemur, S Laha, **S Kaya**, A Kodi, Hao Xin and Ahmed Louri, *IEEE 18th Wireless and Microwave Technology Conference (WAMICON)*, Orlando, FL, USA, pp. 24-25, April 2017.

17. "Exploring Wireless Technology for Off-Chip Memory Access", M. A. I. Sikder, A. Kodi, W. Rayess, D. DiTomaso, D. Matolak and **S. Kaya**. *IEEE 24th Annual Symposium on High-Performance Interconnects (HOTI'16)*, pp. 92–99, Santa Clara, CA, 24-26 Aug. 2016.

18. "<u>Kilo-core Wireless Network-on-Chips (NoCs) Architectures</u>", A Kodi, Md A Sikder, D DiTomaso, **S Kaya**, S Laha, D Matolak and W Rayess, Proc. 2nd Int Conference on Nanoscale Computing and Communication – NANOCOM'15, Boston, MA, USA, pp. 1-5, 21-22 September 2015.

19. "<u>OWN: Optical and Wireless Network-on-Chips (NoCs) for Kilo-core Architectures</u>", Md A Sikder, A Kodi, M Kennedy **S Kaya**, and, A Louri, *IEEE 23rd Annual Symposium on High-Performance Interconnects* – HOTi'15, pp. 44-51, Santa Clara, CA, 26-28 Aug. 2015.

20. "<u>LC Oscillators in Nanoscale DG-MOSFETs</u>", S Laha, **S Kaya**, A Kodi, and D Matolak, IEEE 15th Wireless and Microwave Technology Conference (WAMICON), Tampa, FL, USA, pp. 1-5, 6 June 2014.

21. "Dead Zone Free Power and Area Efficient Charge Pump Phase Frequency Detector in nanoscale DG-MOSFET", S Laha and **S Kaya**, *Proc. Int.* 56th *Midwest Symposium on Circuits and Systems – MWSCAS*'56, Columbus, OH, USA, pp.920-923, 4-7 Aug 2013.

22. "<u>On Ultra-Short Wireless Interconnects for NoCs and SoCs: Bridging the 'THz Gap</u>", **S Kaya**, S Laha, A Kodi, D Ditomaso, D Matolak and W Rayess, *Proc. Int.* 56th *Midwest Symposium on Circuits and Systems – MWSCAS'*56, Columbus, OH, USA, pp.804-808, 4-7 Aug 2013.

23. "<u>A 60 GHz Tunable Low Noise Amplifier in 32 nm DG MOSFET for a Wireless NoC Architecture</u>", S Laha, **S Kaya**, A Kodi, D Ditomaso and D Matolak, IEEE 14th Wireless and Microwave Technology Conference (WAMICON), Orlando, FL, USA, pp. 1-4, April 2013.

24. "Energy-efficient Adaptive Wireless NoCs Architecture," D DiTomaso, A Kodi, D Matolak, **S Kaya**, S Laha and W Rayess, IEEE 7th International Symposium on Networks-on-Chips (NOCS), Tempe, AZ, USA, pp. 1-8, April 2013.

25. "Micro-Structural Characterization of Asphalt Nano-Composites", M Nazzal, **S. Kaya**, T Gunay and P Ahmedzade, 2nd International Symposium on Asphalt Pavements & Environment – ISAP, October 1-3, 2012, Fortaleza, Brazil.

26. "The Use of Nano-Mechanics Techniques to Evaluate the Effect of WMA on The Behavior of Asphalt Binders", M Nazzal, **S. Kaya**, Taylan Gunay and L Abu-Qtaish, 2nd International Symposium on Asphalt Pavements & Environment – ISAP, October 1-3, 2012, Fortaleza, Brazil.

27. "Evaluation and Performance Analysis of Energy Efficient Wireless NoC Architecture", D DiTomaso, S Laha, **S Kaya**, A Kodi and D Matolak, *Proc. Int. 55th Midwest Symposium on Circuits and Systems – MWSCAS*'55, pp.798-801, 5-8 August 2012, Boise, ID, USA.

28. "<u>A Closed form Memristor SPICE Model and Oscillator</u>, I Abraham, S Kaya, G Pennington, *Proc. Int.* 55th Midwest Symposium on Circuits and Systems – MWSCAS'55, pp.1192–1195, 5-8 August 2012, Boise, ID, USA.

29. M Nazzal, **S. Kaya**, and L Abu-Qtaish, "Evaluation of WMA Healing Properties Using Atomic Force Microscopy", 7th RILEM International Conference on Cracking in Pavements, Delft, the Netherlands, Jun 20–22 June, 2012.

30. "Energy-Efficient Modulation for a Wireless Network-on-Chip Architecture" D DiTomaso, S Laha, **S Kaya**, D Matolak and A K Kodi 10th IEEE International NEWCAS Conference, - NEWCAS'10, Montreal, Canada, June 17-20, 2012.

31. "Optimum Biasing and Design of High Performance Double Gate MOSFET RF Mixers", S. Laha, M. Lorek and **S Kaya**, *International Symposium on Circuits and Systems – ISCAS*, 20-23 May 2012, Seoul, Korea.

32. "Double Gate MOSFET Based Efficient Wide Band Tunable Power Amplifiers", S Laha, **S Kaya**, A Kodi and D Matolak, 13th Wireless Microwave Technology Conference – WAMICON, 15-17 April 2012, Cocoa Beach, FL, USA.

33. "<u>iWISE: Inter-router Wireless Scalable Express Channels for Network-on-Chips (NoCs) Architecture</u>," D DiTomaso, A Kodi, **S Kaya**, D Matolak, *IEEE 19th Annual Symposium on High Performance Interconnects – HOTI*, pp.11-18, 24-26 Aug. 2011, Santa Clara, USA.

34. "<u>On Tunable Compact Analog Circuits with Nanoscale DG-MOSFETs</u>", **S Kaya** and H F A Hamed, *Proc. Int.* 53rd *Midwest Symposium on Circuits and Systems – MWSCAS*'53 1-4 August 2010, Seattle, WA, USA.

35. "Studies of Ni and Co doped amorphous AIN for magneto-optical applications", W. M. Jadwisienczak, H. Tanaka, M. Kordesch, A. Khan, **S. Kaya**, R. V. Vuppuluri, *MRS Fall 2009*, Nov 30-Dec 4, Boston, MA, USA

36. "A Novel Voltage-Controlled Ring Oscillator Based on Nanoscale DG-MOSFETs", **S Kaya** & A Kulkarni, 20th IEEE Int. Conf. on Microelectronics - ICM'08, 14-17 December 2008, Dubai, UAE.

37. "Low-Voltage Tunable Double-Gate MOSFET Transconductor for VHF/UHF Continuous-Time Filters", H F A Hamed and **S** Kaya, 19th IEEE Int. Conf. on Microelectronics - ICM'07 29-31 December 2007, Cairo Egypt.

38. "Low-power tunable nanocircuits with DG-MOSFETs for current sensing applications, **S Kaya** and H F A Hamed, *SPIE Prooceedings* 6769 – *Nanosensing: Materials, Devices, and Systems III*, 9-12 September 2007, Boston, MA, USA

39. "Low Voltage Programmable Double-Gate MOSFETs Current Mirror and its As Programmable-Gain Current Amplifier", H F A Hamed, **S Kaya**, *14th IEEE Int. Conference on Electronics, Circuits and Systems - ICECS'07*, 11-14 December, 2007, Marrakech, Morocco.

40. "Models, Electrostatics and Molecular Dynamics of the Na+/K+-ATPase", J F Fonseca, R F Rakowski and **S Kaya**, Ohio *Collaborative Conference on Bioinformatics – OCCBIO 2006*, 28-30 Jun 2006, Athens, OH, USA. http://www.occbio.org

41. "A Novel Single-Gated Strained CMOS Architecture: COSMOS", A Al-Ahmadi and **S Kaya**, *Int. Conference on Simulation of Semiconductor Process and Devices – SISPAD*, 1-3 Sep 2005, Tokyo, Japan.

42. "Study of RF Performance for Graded-Channel SOI MOSFETs", W Ma and **S Kaya**, Int. Conference on Simulation of Semiconductor Process and Devices – SISPAD, 1-2 Sep 2005, Tokyo, Japan.

43. "Scaling of RF Linearity in DG and SOI MOSFETs", W Ma, **S Kaya**, and A Asenov, 11th IEEE Int. Symposium on Electron Devices for Microwave and Optoelectronic Applications – EDMO, 17-18 Nov 2003, Orlando, FL, USA.

44. "Enhanced Velocity Overshoot and Transconductance in Si/Si0.64Ge0.36/Si p-MOSFETs - Predictions for Deep Submicron Devices", M Palmer, G Braithwaite, M J prest, T E Whall, E H C Parker, Y P Zhao, **S Kaya**, J R Watling, A Asenov, J R Barker, A Waite and A G R Evans, *Proc. of 31st European Solid-state Device Research Conference – ESSDERC*, 11-13 Sep 2001, Nunberg, Germany.

45. "Analysis of Statistical Fluctuations due to Line Edge Roughness in sub-0.1mm MOSFETs", **S Kaya**, A R Brown, A Asenov, D Magot and T Linton, *Int. Conference on Simulation of Semiconductor Process and Devices – SISPAD*, 5-8 Sep 2001, Athens, Greece.

46. "Single stage amplifiers on a CMOS grade silicon substrate using a polymer interlayer dielectric with strained silicon MOSFETs" G Ternent, D L Edgar, E H McLelland, F Williamson, N Ferguson, **S Kaya**, C D W Wilkinson, I G Thayne, K Fobelets, J Hampson, *Asia-Pacific Microwave Conference*, p.767, 3-6 Dec 2000, Sydney, Australia.

47. "Indication of Non-equilibrium Transport in SiGe p-MOSFETs" Y P Zhao, **S Kaya**, J R Watling, A Asenov, J R Barker, M Palmer, G Braithwaite, T E Whall, E H C Parker, A Waite and A G R Evans, *Proc. of 30th European Solid-state Device Research Conference - ESSDERC*, p.224, 11-13 Sep 2000, Cork, Ireland.

48. "Metal Gate Strained Silicon SiGe MOSFETs for Microwave Integrated Circuits", G Ternent, D L Edgar, H McLelland, S Ferguson, **S Kaya**, C D W Wilkinson, I G Thayne, K Fobelets and J HAmpson, 8th IEEE Int. Symposium on Electron Devices for Microwave and Optoelectronic Applications – EDMO, 13-14 Nov 2000, Glasgow, Scotland.

49. "Effect of Oxide Interface Roughness on the Threshold Voltage Fluctuations in Decanano MOSFETs with Ultrathin Gate Oxides" A Asenov and **S Kaya**, *Int. Conference on Simulation of Semiconductor Process and Devices – SISPAD*, 5-8 Sep 2000, Seattle, WA, USA.

50. "RF Analysis Methodology for Si and SiGe FETs Based on Transient Monte Carlo Simulation", S Roy, **S Kaya**, A Asenov and J R Barker, *Int. Conference on Simulation of Semiconductor Process and Devices – SISPAD*, 6-8 Sep 1999, Kyoto, Japan.

Conferences - Refereed Posters & Talks - Abstracts only:

51. "Ultra-Durable and Reliable High-k Textile Capacitors for Wearables and Robotics", A Rohit, Y Kelestemur, **S Kaya**, P Rajan, Device Research Conference (DRC), p.1-2, 2020

52. "Fluorinated Terpolymer Thin Films Treated By Solvent And Non-Solvent Vapour Annealing,", S. Ok, J. Sheets, S. Welch, **S. Kaya**, A. Jalilov and D. R. Cole, *35th Romanian Chemistry Conference, October 2-5, 2018*, Calimanesti-Caciulata, Valcea, Romania,

53. "Low-Cost Organic Micro-Lens Arrays for Solar Cells & LEDs: UV-C patterned PMMA and Capillary Deposited PDMS", D Carbaugh, A Rohit, T Holeman, **S Kaya**, P Rajan, J Wright and W Jadwisienczak, *11th International Symposium on Flexible Organic Electronics (ISFOE18),* June 28-July 4, 2018, Thessaloniki, Greece.

54. "Conductive Properties of Laser-Scribed Polyimide Films: Optimization for Optimal Dose and Reliability", T Cai, A Yachnes **S Kaya**, and W Jadwisienczak, *11th International Symposium on Flexible Organic Electronics (ISFOE18),* June 28-July 4, 2018, Thessaloniki, Greece.

55. "Novel Photolithographic Techniques Using Polymethyl Methacrylate,", D. Carbaugh, F. Rahman, S. Pandya, **S. Kaya**, 2017 Electronic Materials Conference (59th EMC), June 28, 2017, South Bend, IN, USA.

56. "Systematic Approach for Printing Solar Cells from Perovskite Precursors", T Holeman, W Jadwisienczak, J Chen, **S Kaya**, J T Wright, 2017 Electronic Materials Conference (59th EMC), June 28, 2017, South Bend, IN, USA.

57. "Low Cost Multiscale Patterning Via Photo-Initiated PMMA for Thin Film Devices", D J Carbaugh, F Rahman and **S Kaya**, 2nd *International Workshop On Thin-Films For Electronics, Electro-Optics, Energy And Sensors (TFE3S),* June 24-25, 2017, Dayton, OH, USA.

58. "Study of Printed Interdigitated Capacitors as Thermometers for Microfluidic Devices," P Rajan, J T Wright, A Rohit, T Cai and **S Kaya**, 2nd International Workshop On Thin-Films For Electronics, Electro-Optics, Energy And Sensors (TFE3S), June 24-25, 2017, Dayton, OH, USA.

59. "Plasma assisted optimization of grain size and interface properties in thin film organic transistors,", J T Wright, P Rajan, A Rohit, T Cai, F Rahman and **S Kaya**, 2nd International Workshop On Thin-Films For Electronics, Electro-Optics, Energy And Sensors (TFE3S), June 24-25, 2017, Dayton, OH, USA.

60. "Tuning hydrophobicity of a fluorinated terpolymer in differently assembled thin films", S Ok, J Sheets, S Welch, **S Kaya**, A Jalilov, D R. Cole, 66th Society of Polymer Science, Japan (SPSJ) Annual Meeting, 29-31 May 2017, Chiba-city, Japan.

61. "Tuning hydrophobicity of a fluorinated terpolymer in differently assembled thin films", S Ok, J Sheets, S Welch, **S Kaya**, A Jalilov, D R. Cole, 5th Int. Symposium Frontiers in Polymer Science, 17-19 May 2017, Seville, Spain.

62. <u>Photochemical Modification of Polymethyl Methacrylate (PMMA) for Producing Topographic and Refractive Index Contrast</u> <u>for Device Fabrication</u>", D. J. Carbaugh, F. Rahman, J. T. Wright, P. Rajan, A. Rohit, and **S Kaya**, Conference on Lasers and Electro-Optics, 5–10 June 2016, San Jose, CA, USA.

63. "Electrospun Fibrous Polymer Films and Nanostructures for Nano-Biosensing", **S Kaya**, J Wright, F Rahman and W Jadwisienczak, 2nd Int. Conference on Surfaces, Coatings and Nanostructured Materials – Asia (*NANOSMAT-Asia*), 25-27 March 2015, Kayseri, Turkey.

64. "Use of Plasma Activation for Self-Assembly and Nanoink Printing", **S Kaya**, P Rajan, F Rahman and W Jadwisienczak 2nd Int. Conference on Surfaces, Coatings and Nanostructured Materials – Asia (*NANOSMAT-Asia*), 25-27 March 2015, Kayseri, Turkey.

65. "A Comparative Study of Electrospun Polymers and Fibrous Films for Nanosensing", **S Kaya**, J Wright, F Rahman and W Jadwisienczak, Nanoscience & Nanotechnology For Next Generation – *NanoNG2014*, 20-22 August 2014, Elazig, Turkey.

66. "Plasma Activation for Self Assembly and Nanoink Printing", **S Kaya**, P Rajan, F Rahman and W Jadwisienczak, Nanoscience & Nanotechnology For Next Generation – *NanoNG2014*, 20-22 August 2014, Elazig, Turkey.

67. "Stability Criterion of LC Oscillators in nanoscale DG-MOSFETs", S Laha and **S Kaya**, IEEE 7th International Semiconductor Device Research Symposium – ISDRS, 11-13 December 2013, Bethesda, MD, USA.

68. "Plasma Activation of Si surfaces: An Easier and Safer Approach for Microsphere Lithography," P Rajan, H Dasari, W Jadwisienczak, and **S Kaya**, IEEE 7th International Semiconductor Device Research Symposium – ISDRS, 11-13 December 2013, Bethesda, MD, USA.

69. "W-band Power Amplifier in 0.15μm InGaAs pHEMT Technology with Microstrip Transmission Lines," S Laha, **S Kaya**, A Kodi and D Matolak, IEEE 7th International Semiconductor Device Research Symposium – ISDRS, 11-13 December 2013, Bethesda, MD, USA.

70. "Area Efficient 2.4 GHz Relaxation Oscillator with nanoscale DG-MOSFETs", S Laha and **S Kaya**, IEEE 20th International Conference on Electronics, Circuits and Systems (ICECS), Abu Dhabi, UAE, 8-11 December 2013.

71. "Diffusion based Memristor Compact Model", I Abraham, **S Kaya**, and G Pennington, Int. Workshop of Computational Electronics – IWCE'15, 22-25 May, Madison, WI, USA, 2012.

72. S. Laha, K.C. Wijesundara, A. Kulkarni, **S Kaya**, Ultra-Compact Low-Power ICO/VCO Circuits with Double Gate MOSFETs, *IEEE International Semiconductor Device Research Symposium – ISDRS*, 7-9 Dec 2011, Washington DC, USA.

73. "Temporal and Steric Analysis Of Ionic Permeation and Binding in Na⁺,K⁺-ATPase via Molecular Dynamic Simulations", J E Fonseca and **S Kaya**, *Biophysical Journal*, vol.96, Issue 3, 145a. (*Proceedings of Biophysical Society Meeting*, 28 Feb-4Mar, 2009, Boston, MA, USA.

74. "Highly Reconfigurable and Error Tolerant Threshold Logic Gates Based on Nanoscale DG-MOSFETs", **S Kaya**, D T-Y Ting and H F A Hamed, *International Semiconductor Device Research Symposium – ISDRS*, 9-11 Dec 2009, Washington DC, USA.

75. "Study of Ion-Motive ATPase Proteins for Multi-Valued Logic and Storage "J E Fonseca, K Clark, S-W Hla, R F Rakowski and **S Kaya**, *NSF EMT Workshop*, 24-25 July, 2008, Princeton, NJ, USA

76. "Nanocircuits for Sensors and On-Chip Analog Signal Processing", A Kulkarni and **S Kaya**, *Int. Conf. on Nanoscale Spectroscopy & Nanotechnology* 5 – *NSS*5, 15-19 Jul7, 2008, Athens, OH, USA

77. "Design of Reconfigurable Threshold Logic Using DG-MOSFETs", **S Kaya** and F A Hamed, 12th Int. Workshop of Computational Electronics – IWCE'12, 08-10 October, 2007, Amherst, MA, USA

78. "Ion Permeation and Binding in Biomolecular Ion Pumps via Molecular Dynamics ", J E Fonseca, R F Rakowski, and **S Kaya**, 12th Int. Workshop of Computational Electronics – IWCE'12, 08-10 October, 2007, Amherst, MA, USA

79. "Reconfigurable Threshold Logic Gates with nano-scale DG-MOSFETs", **S Kaya**, and H F A Hamed, *Nano Giga Challenges in Electronics and Photonics*, 12-14 March 2007, Phoenix, AZ, USA

80. "Compact Tunable Current-Mode Analog Circuits Using DG-MOSFETs", H Hamed, **S Kaya**, and J Starzyk, 2006 IEEE Int. SOI Conference, 2-5 October, 2006, Niagara Falls, NY, USA.

81. "Modeling of Binding Sites and Electrostatics in the Ion-Motive Sodium Pump", J F Fonseca, **S Kaya**, R F Rakowski and S Guennoun, 6th IEEE Conference on Nanotechnology – IEEENano 2006, 16-20 July, 2006, Cincinnati, OH, USA

82. "Low-Power Tuneable Analog Circuit Blocks Based on Nanoscale Dual-Gate MOSFETs", **S Kaya**, H Hamed and J Starzyk, 6th IEEE Conference on Nanotechnology – IEEE Nano 2006, 16-20 July, 2006, Cincinnati, OH, USA

83. "Power•Delay Product in COSMOS Logic Circuits", A Al-Ahmadi and **S Kaya**, 11th Int. Workshop of Computational Electronics – IWCE'11, 25-27 May, 2006, Vienna, Austria.

84. "Electrostatic Modeling of Ion Motive Sodium Pump", J F Fonseca, **S Kaya**, and R F Rakowski, 11th Int. Workshop of Computational Electronics – IWCE'11, 25-27 May, 2006, Vienna, Austria.

85. "Prediction of the location of binding sites in homology models of metal and alkaline-earth ion binding proteins", Reddy C , J F Fonseca, S Guennoun, **S Kaya** and R F Rakowski., *Swiss Biomedical Research Meeting - USGEB*, 23-24 Feb 2006, Geneva, Switzerland.

86. "Layout and Geometry Tolerances in COSMOS", A Al-Ahmadi and **S Kaya**, *International Semiconductor Device Research Symposium – ISDRS*, 6-9 Dec 2005, Washington DC, USA.

87. "Study of Dual-Gate SOI MOSFETs as RF Mixers", Swetha Varadharajan and **S Kaya**, International Semiconductor Device Research Symposium – ISDRS, 6-9 Dec 2005, Washington DC, USA.

88. "Homology Study of Na,K ATPases Based on SERCA", J F Fonseca, **S Kaya** and R F Rakowski, *Mechanisms Of Membrane Transport – A Gordon Research Conference*, 5-10 June, 2005, Tilton, New Hampshire, USA.

89. "Device Scaling in COSMOS Architecture", A Al-Ahmadi and **S Kaya**, IEEE 63rd Device Research Conference – *DRC*'63, 20-22 June, 2005, Santa Barbara, California, USA

90. "Electro-Chemical Modeling Challenges of Biological Ion Pumps", R F Rakowski, **S Kaya** and J F Fonseca, 10th Int. Workshop of Computational Electronics – IWCE'10, 24-26 Oct, 2004, West Lafayette, Indiana, USA.

91. "Search for Optimum and Scalable COSMOS", **S Kaya** and A Al-Ahmadi, 10th Int. Workshop of Computational Electronics – *IWCE'10*, 24-26 Oct, 2004, West Lafayette, Indiana, USA.

92. "RF Performance of Strained SiGe pMOSFETs: Linearity and Gain", W Ma and **S Kaya**, 10th Int. Workshop of Computational Electronics – IWCE'10, 24-26 Oct, 2004, West Lafayette, Indiana, USA.

93. "Simulation of Interface Roughness in DGMOSFETs using Non-Equilibrium Greens Functions", J Fonseca and **S Kaya**, IEEE 62nd Device Research Conference – *DRC*'62, 21-23 June, 2004, South Bend, Indiana, USA

94. "COSMOS: A New MOS Device Device Paradigm", **S Kaya**, *Silicon Nanoelectronics Workshop – VLSI Symposia*,13-14 Jun 2004, Honolulu, Hawaii,USA.

95. "Simulation of Interface Roughness in DG-MOSFETs using Non-Equilibrium Green's Functions", J Fonseca and **S Kaya**, IEEE 34th SISC, 04-06 Dec, 2003, Washington, DC.

96. "Impact of Device Physics on DG and SOI MOSFET Linearity", W Ma and **S.Kaya**, Int. Semiconductor Device Research Symposium - ISDRS, 10-12 Dec, 2003, Washington, DC.

97. J Fonseca and **S.Kaya**, "Accurate Treatment of Interface Roughness in Nanoscale DGMOSFETs using Non-Equilibrium Green's Functions", *Int. Semiconductor Device Research Symposium - ISDRS*, 10-12 Dec, 2003, Washington, DC

98. "Design of DG-MOSFETs for High Linearity Performance", **S.Kaya**, W Ma and A.Asenov, *,IEEE Int. SOI Conference*, Sep 2003, Newport Beach, California, USA.

99. "Electro-thermal Analysis of RF Linearity in DG and SOI MOSFETs", W Ma and **S.Kaya**, 4th OSC Graduate Student Workshop and Conference, 07-08 Aug 2003, Ohio Supercomputer Center, Columbus, Ohio, USA.

100."Accurate Treatment of Interface Roughness in Nanoscale MOSFETs using Non-Equilibrium Green's Functions", J Fonseca and **S.Kaya**, 4th OSC Graduate Student Workshop and Conference, 07-08 Aug 2003, Ohio Supercomputer Center, Columbus, Ohio, USA.

101."Study of RF Linearity in sub-50nm MOSFETs Using Simulations", W Ma, **S.Kaya** and A.Asenov, , 9th Int. Workshop of Computational Electronics – IWCE'9, 26-29 May 2003, Frascati, Rome, Italy.

102."Breakdown of Universal Mobility due to Atomistic Interface Considerations in nano-MOSFETs", **S Kaya** and A Asenov, 4th *Motorola Workshop on Computational Materials and Electronics*, 14-15 Nov 2002, Tempe, AZ, USA.

103. "Breakdown of Universal Mobility Curves in sub-100nm MOSFETs", **S Kaya**, A Asenov and S. Roy, *Silicon Nanoelectronics Workshop – VLSI Symposia*,9-10 Jun 2002, Honolulu, HI,USA.

104."Implications of Imperfect Interfaces and Edges in Ultra-small MOSFET Characteristics", A Asenov, **S Kaya** and A R Brown, *3rd Motorola Workshop on Computational Materials and Electronics*, 12-14 Nov 2001, Tempe, AZ, USA.

105."On the breakdown of Universal Mobility Curves: A 3D Statistical Simulation Framework", **S Kaya**, A Asenov and S. Roy, 8th Int. Workshop of Computational Electronics – IWCE'8, Oct 2001, Urbana-Champaign, IL,USA.

106.3D Modelling of Imperfect Interfaces and Edges in MOSFETs, **S Kaya**, A Brown, S. Roy and A Asenov, *Quantum Transport Workshop*, 17-22 June 2001, Maratea, Italy.

107."Statistical 3D Simulation of Line Edge roughness in Decanano MOSFETs", A Brown, **S Kaya**, A Asenov, J H Davies and T. Linton, *Silicon Nanoelectronics Workshop – VLSI Symposia*,10-11 Jun 2001, Kyoto, Japan.

108. "Drift Diffusion and Hydrodynamic Simulations of Si/SiGe p-MOSFETs", Y P Zhao, J R Watling, **S Kaya**, A Asenov and J R Barker, *5th IUMRS Int. Conference on Advanced Materials*, 13-18 Jun 1999, Beijing, China.

109."Monte Carlo Investigation of Optimal Device Architectures for SiGe FETs", S Roy, **S Kaya**, S Babiker, A Asenov and J R Barker, 6th Int. Workshop of Computational Electronics – IWCE 6, Oct 1998, Osaka, Japan.

110."Velocity Overshoot in psuedomorphic Si_{0.8}Ge_{0.2}p-MOSFET's", G Ansaripour, G Braithwaite, E H C Parker and T E Whall, **S Kaya**, Y-P Zhao, J R Watling, A Asenov, J R Barker, 8th European Heterostructure Technology Workshop, 13-15 Sep 1998, Cardiff, UK.

111."Strained Si/SiGe Quantum Wells and Wires on Vicinal (118) Si Substrates", **S Kaya**, T J Thornton, K Fobelets, P W Green and J M Fernandez, *Silicon Nanoelectronics Workshop – VLSI Symposia,* 8-9 Jun 1997, Kyoto, Japan.

Invited/Open Talks:

- 1. "Nanoscale Transistors: Speed or Talent?", **S Kaya**, UC Davis, 17 November 2006, Davis, CA, USA.
- 2. "DG-MOSFETa for Reconfigurable and Tunable Nanocircuits ", **S Kaya**, Uni of Cincinnati, 2 February 2007, OH, USA.
- 3. "Nanotechnology & Energy: Solutions for 21st Century ", **S Kaya**, Turkish-American Society of Ohio, Academics Meeting, 8 January 2012, Columbus, OH, USA.

4. "Nanoscale Science & Engineering: Hype or Opportunity" **S Kaya**, <u>Ohio University Science Cafe</u>, October 9th, 2013, Athens, OH, USA.

5. "Low Cost Multiscale Patterning Via Photo-Initiated PMMA for Thin Film Devices",", **S Kaya**, Uni of Dayton, 25 June 2017, OH, USA.