Oxford Instruments Workshop

March 30st, 2020

see Oxford webpage for details: https://www.oxinst.com/events/dry-processing-workshop-at-namlab

Novel High-k Application Workshop

March 31st, 2020

	Time	Presenter	Institute	Title of Presentation
	9:00	T. Mikolajick/U. Schroeder	Namlab	Welcome
		Novel Devices	*chair: U. Schroeder*	
1	9:15	Tania Hemakumara	Oxford Instruments	Atomic Layer Deposition (ALD) of high-quality gate dielectrics to enable next generation GaN HEMTs
2	9:35	J. Heitmann	TUBA Freiberg, Germany	Hi k on GaN
3	9:55	A. Calzolaro	Namlab Dresden, Germany	Gate dielectric integration in AlGaN/GaN MIS-HEMTs for high-power application
4	10:15	C. Strobel	TU Dresden, IHM, Dresden, Germany	Demonstration of a graphene based heterojunction transistor with saturated output current
		Coffee break: 10:35 - 11:10h		
		Novel Devices	*chair: T. Mikolajick*	
5	11:10	E. Erben	GlobalFoundries, Dresden, Germany	Work Function effect on V_t settings in High-k Metal Gate Devices - FDSOI vs bulk technology
6	11:30	Y. Wie	Univ. of Groningen, Netherlands	Magneto-ionic control of spin-polarization in magnetic tunnel junctions with hafnia-zirconia tunnel barrier
7	11:50	T. Mauersberger	Namlab Dresden, Germany	Integration challenges of ferroelectric HfxZr1-xOy for fabrication of nanowire transistors
8	12:10	R. Marquardt	Univ. Kiel, Germany	Impedance Spectroscopy analysis on charge transfer in HfOx-based memristive device
		Lunch - MPI PKS: 12:30 - 14:00h		
		RRAM	*chair: S. Slesazeck*	
9	14:00	M. Ziegler	TU Ilmenau, D	Memristive Devices for bio-inspired electronics
10	14:20	C. Wenger	IHP Frankfurt/Oder, D	Towards Neuromorphic Networks with Multilevel HfO2-Based RRAM Devices
11	14:40	J. Bi	Institute of Microelectronics, CAS, China	Radiation Effects of HfO2-based MOS Capacitor, RRAM and FRAM
12	15:00	U. Böttger	RWTH Aachen, D	Resistive Switching in VCM cells
13	15:20	L. Alff	Univ. Darmstadt, D	Forming-Free Grain Boundary Engineered Hafnium Oxide Resistive Random Access Memory Devices
		Coffee break: 15:40 - 16:10h		
		FeCap	*chair: U. Schroeder*	
14	16:10	V. Gritsenko	Rzhanov Institute, Novosibirsk, Russia	Charge transport mechanism and trap origin in ferroelectric films based on HfO_2
15	16:30	B. Kim	Seoul National Univ./Seoul/Korea	Enhanced ferroelectric properties in Hf1-xZrxO2 films using HfNx interfacial layer
16	16:50	A. Hsain	NC State/Raleigh/USA	Compositional dependence of crystallization temperatures and phase evolution in HZO thin films
17	17:10	F. Berg	RWTH Aachen/Germany	Properties of sputtered ferroelectric hafnium oxide
18	17:30	M. Materano	Namlab Dresden/Germany	Impact of oxygen content on the ferroelectric properties of HfZrO4
	17:50	End		
	19:30	Workshop Dinner	Pullman Hotel	sponsored by Oxford Instruments

Novel High-k Application Workshop

April 1st, 2020

		FeCap	*chair: U. Schroeder*	
1	9:00	L. Grenouillet	LETI, Grenoble, France	Back-End Of Line compatibility of ferroelectric HfO2 : challenges and perspectives
2	9:20	M.H. Park	Pusan National University, Korea	Ferroelectricity in HfO2/ZrO2 nanolaminates and superlattices
3	9:40	P. Nukala	Univ. of Groningen/Netherlands	Polar rhombohedral phase in thin-film hafnia-zirconia, and its ferroelectric switching
4	10:00	F. Sanchez	ICMAB/Barcelona/Spain	High polarization, endurance and retention in sub-5 nm Hf0.5Zr0.5O2 films
5	10:20	J. Bouaziz	Univ. Lyon/France	Customizing ferroelecric properties of sputtered HfZrO2 thin films
			Coffee break: 10:40 - 11:10h	
		FeFET/FTJ/Neurom.	chair: S. Slesazeck	
6	11:10	D. Kleimaier	GlobalFoundries, Dresden, Germany	FeFET: an emerging logic CMOS compatible non-volatile memory
7	11:30	T. Ali	IPMS-CNT, Dresden/Germany	Impact of Ferroelectric HZO layer thickness on the FeFET performance
8	11:50	A. Khan	Georgia Tech, Atlanta, USA	Collective dynamics of ferroelectric neurons and oscillators for biomimetic computing
9	12:10	H. Mulaosmanovic	Namlab Dresden/Germany	Ferroelectric Devices for beyond Von-Neumann Computing
10	12:30	G. Kolhatkar	Univ. Kiel, Germany	CMOS Compatible Hf0.5Zr0.5O2 Ferroelectric Tunnel Junctions for Artificial Synapses
			Lunch break: 12:50 - 14:00h	
		FeCap/NCFET/Modelling		
11	14:00	S. McMitchell	IMEC, Leuven/Belgium	Elucidating the wake-up mechanism in SIS ferroelectric Si:HfO2
12	14:20	M. Hoffmann	Namlab Dresden/Germany	Negative capacitance in ferroelectric hafnium oxide: intrinsic or extrinsic?
13	14:40	C. Gastaldi	EPF Lausanne/Switzerland	Transient Negative Capacitance of Silicon-doped HfO2 in MFMIS and MFIS Structures
14	15:00	I. Stolichnov	EPF Lausanne/Switzerland	Thermodynamic (Intrinsic) or Nucleation-Controlled Switching in HfO2-based Ferroelectrics: Insight form PFM on Negative Capacitance Structures
15	15:20	P. Lomenzo	Namlab Dresden/Germany	Modeling Ferroelectric Hysteresis with Depolarization Fields
16	15:40	A. Kersch	UAS Munich/ Germany	Interphase characteristics in HfO2 and ZrO2
			Coffee break: 16:00 - 16:20h	
		Characterization		
17	16:20	Y. Matveyev	Desy, Hamburg/Germany	Electrical potential profiling in fuctional memory capasitors by HAXPES
18	16:40	M. Mueller	FZ Juelich/Germany	Connecting interface chemistry to transport properties of ferroelectric switching devices
19	17:00	N. Barrett	CEA-Saclay, Paris/France	Polarization dependent electrode/ferroelectric interface electronic structure of La-doped HfZrO2 using operando HAXPES
20	17:20	F. Mehmood	Namlab Dresden/Germany	Wake-up behavior of La:H0.5Z0.5O2 and its temperature dependence
21	17:40	M. Lederer	IPMS-CNT, Dresden/Germany	Crystallographic phase and orientation mapping of ferroelectric HfO2 thin films by transmission Kikuchi diffraction
	18:00	End		

Poster session: April 1st during coffee breaks

1	Evgenios Stylandius	Uni Groningen	Ferroelectric and multiferroic tunnel junctions using HfZrO4 layers as tunnel barriers
2	Vincent de Haas	Uni Groningen	Depolarization effects on the stability of rhombohedral phase in HfZrO4 thin-films
3	Roman Khakimov	MIPT, Moscow, Russia	The influence of electrode materials and interfaces on the ferroelectric response of hafnium oxide-based structures
4	Kai Xi	Institute of Microelectronics, CAS, China	Improved Ferroelectricity in $Hf_{0.5}Zr_{0.5}O_2$ Thin Films by Microwave Annealing
5	Bo Li	Institute of Microelectronics, CAS, China	Radiation-induced Degradations in FinFET Devices with Hafnium-based Dielectric using Multiple-scale Characterization
6	Hyun Woo Park	Seoul National Univ./Seoul/Korea	Investigation on the existence of multi-domain induced negative capacitance in ferroelectric Hf0.5Zr0.5O2 thin films
7	Min Sik Oh	Seoul National Univ./Seoul/Korea	Dynamic Modeling of Pulse Measurement of (Hf,Zr)O2/Al2O3 Bilayer for Identifying Negative Capacitance Effect
8	Damir Islamov	Rzhanov Institute, Novosibirsk, Russia	Identification of the nature of traps involved in the field cycling of Hf0.5Zr0.5O2-based ferroelectric thin films
9	Damir Islamov	Rzhanov Institute, Novosibirsk, Russia	Charge transport of HfO2:La ferroelectric film and their fatigue evolution during field cycling