Novel High-k Application Workshop — September 12th, 2022

	Time	Presenter	Institute	Title of Presentation
	9:00	T. Mikolajick/U. Schroeder	Namlab	Welcome
		Memristive Devices		*chair: U. Schroeder*
1	9:15	Lambert Alff	TU Darmstadt, Germany	Defect engineering and conduction mechanisms in metal oxide valence change type memristive devices
2	9:40	Eduardo Perez/Christian Wenger	IHP, Frankfurt/Oder, Germany	Promises and Challenges of Using CMOS-integrated Memristive Devices in Hardware-based Artificial Neural Networks
3	10:05	Martin Ziegler	TU Illmenau, Germany	Multilayer Oxid Memristive Devices for Neuromorphic Computing
4	10:30	Stefan Slesazeck	Namlab, Dresden, Germany	Switching kinetics in analog NbO based memristors
		Coffee break: 10:55 - 11:30h		
		FeFET/FTJ		*chair: T. Mikolajick*
5	11:30	Sven Beyer	GlobalFoundries Dresden, Germany	FeFET
6	11:55	Cédric Marchand/Ian O'Connor	Université de Lyon, Namlab	Exploring FeFET based hybrid TC-MEM memory: TCAM and normal memory
7	12:20	Konrad Seidel	FhG IPMS-CNT, Dresden, Germany	Integration and performance analysis of BEoL integrated MFMIS FeFET technology
8	12:45	Catherine Dubourdieu	Helmholtz Zentrum Berlin, Berlin,	Effect of processing conditions on the interfaces, crystallinity and polarization of HZO films in FTJ junctions
		Lunch - Mensa: 13:10 - 14:15h		
		Epitaxial/ferroelectric layers		chair: A. Gruverman
9	14:15	José Silva	Minho University, Braga, Portugal	Ferroelectric orthorombic and rhombohedral phases in ZrO_2 thin films
10	14:40	Florencio Sanchez	ICMAB Barcelona, Spain	Stress and chemical doping in epitaxial ferroelectric HfO2
11	15:05	Thomas Maroutian	C2N-Saclay, Paris, France	Stabilization of the epitaxial rhombohedral ferroelectric phase in ZrO2
12	15:30	Sean McMitchell /Jan van Houdt	IMEC, Leuven, Belgium	Strain driven mechanisms in ferroelectric doped hafnia
		Coffee break: 15:55 - 16:30h		
		Material/Neumorphic		*chair: S. Slesazeck*
13	16:30	Bertrand Vilquin	Université de Lyon, Lyon, France	Influence of the electrode interface on the properties of ferroelectric HfZrO2
14	16:55	Ulrich Boettger	RWTH Aachen, Germany	Comparison of conventional and unconventional ferroelectrics
15	17:20	Max Becker/Judith Driscoll	University of Cambridge, GB	Ferroelectric memristors based on epitaxial semiconducting Y-doped HfO2 thin films
16	17:45	Laura Begon-Lours	IBM Zurich, Switzerland	$WO_x/HfZrO_4$ bilayers for BEOL compatible synapses
	18:10	End		
	19:30	Workshop Dinner		sponsored by Oxford Instruments

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		Material II	*chair: U. Schroeder*	
17	9:00	Daniele Nazzari/Walter Weber	TU Wien, Austria	Interface Engineering of Germanium Nanosheets / High -k Hafnia and Zirconia Stacks
18	9:25	Florian Johann	Oxford Instr., Wiesbaden, Germany	Nanoscale characterization of functional properties of HfO2/ZrO2 with Atomic Force Microscopy
19	9:50	Harm Knoops	Oxford Instr., Eindhoven, Netherlands	High k on Graphene
20	10:15	Suzanne Lancaster	Namlab, Dresden, Germany	Ferroelectric Hafnia Layers on Graphene
			Coffee break: 10:40 - 11:15h	
		FRAM/Material	chair: P. Lomenzo	
21	11:15	Laurent Grenouillet	LETI, Grenoble, France	Performance of HfO2-based FeRAM and challenges for scaling
22	11:40	Ruben Alcala	Namlab, Dresden, Germany	Integrated BEOL Ferroelectric HfO2 Capacitors for FeRAM Reliability
23	12:05	Tony Schenk	Ferroelectric Memory Company, Dresden,	Reliability Aspects of HfO_2/ZrO_2 for FRAM applications
24	12:30	Maxim Popov/Marco DeLuca	Materials Center Leoben, Austria	Methodology for the calculation of Raman spectra of hafnia and zirkonia based films
			Lunch - Mensa: 12:55 - 14:00h	
		Simulation/Characterization	*chair: S. Lancaster*	
25	14:00	Luis Azevedo Antunez/A. Kersch	Univ. of Appl. Sciences, Munich, Germany	Simulation of phases and phase transitions
26	14:25	Hugo Aramberri/Jorge Iñiguez	LIST, Luxembourg	Insights into ferroelectric hafnia from first-principles: anomalous piezoelectricity and dopant ordering
27	14:50	Alexei Gruverman	Univ. Lincoln, Nebraska	Intrinsic Switching Behavior of HfO2 Capacitors
28	15:15	Evgenios Stylianidis/ Beatriz Noheda	University of Groningen, Netherlands	Investigating the electromechanical behavior of unconventionally ferroelectric Hf0.5Zr0.5O2-based capacitors through operando nanobeam X-ray diffraction
			Coffee break: 15:40 - 16:00h	
		Characterization/Piezo-Pyro	*chair: U. Schroeder*	
29	16:00	Nick Barrett	CEA-Saclay, Paris, France	Physical chemistry of field cycling induced oxygen vacancy distributions in hafnia based ferroelectric capacitors studied by
30	16:25	Martina Müller	Universität Konstanz, Germany	From doping to dilution - local chemistry and collective interactions in doped HfO2
31	16:50	Malte Czernohorsky	FhG IPMS-CNT, Dresden, Germany	Piezo- and pyroelectric properties of HZO for MEMS and sensor application
32	17:15	Patrick Lomenzo	Namlab, Dresden, Germany	Correlative investigations of piezo and pyroelectric properties of ZrO2
	17:40	End		