Program of the International Workshop on Nanoelectronic Memristive Devices for Quantum and Neuromorphic Computing

Russia, Moscow, National Research Center (NRC) “Kurchatov Institute” (May 14-16, 2018)

Monday, May 14

Time	Activity	Presenting/First Author	Institution	Title
09:00–09:30	**REGISTRATION**			
09:30–11:30	**EXCURSION AT THE NBICS-CENTER** (Demin, Vyacheslav)			
11:30–12:00	Coffee Break			
12:00–12:15	**OPENING SESSION** (Chair: Kovalchuk, Mikhail)			
12:00–12:15	OPENING TALKS	Kovalchuk, Mikhail	NRC “Kurchatov Institute”, Russia	
12:15–14:15	**PLENARY SESSION** (Chair: Kovalchuk, Mikhail)			
12:15–12:45	PLENARY TALKS	Kovalchuk, Mikhail	NRC “Kurchatov Institute”, Russia	
12:45–13:15		Demin, Vyacheslav	NRC “Kurchatov Institute”, Russia	Neuromorphic systems, synaptic plasticity and spiking neural networks based on memristive devices
13:15–13:45		Pershin, Yuriy	University of South Carolina, USA	In-Memory Computing with Memory Circuit Elements
13:45–14:15		Sirakoulis, Georgios	Democritus University of Thrace, Greece	Emerging Memristor-Based Logic and Computational Concepts
14:15–15:30	LUNCH*			
15:30–17:00	**NEUROMORPHIC AND NEUROHYBRID MEMRISTIVE SYSTEMS** (Chair: Demin, Vyacheslav)			
15:30–16:00	INVITED REPORTS	Erokhin, Victor	CNR-IMEM Parma, Italy	Neuromorphic systems based on organic memristive devices
16:00–16:30		Mikhaylov, Alexey	Lobachevsky University, Russia	Metal-oxide memristive nanostructures for emerging neuroelectronic systems
16:30–17:00		Talanov, Maxim	Kazan Federal University, Russia	Neuromorphic computation and neuro-simulation projects
18:30–21:30	GALA DINNER*			

Tuesday, May 15

Time	Activity	Presenting/First Author	Institution	Title
09:30–11:30	**PHYSICS AND TECHNOLOGY OF MEMRISTIVE NANOMATERIALS AND CIRCUITS** (Chair: Mikhaylov, Alexey)			
09:30–10:00	INVITED REPORTS	Koveshnikov, Sergey	IMT RAS, Russia	Physics and technology of memristive materials and devices
10:00–10:30		Dimitrakis, Panagiotis	NCSR “Demokritos”, Greece	Resistance switching properties of LPCVD Silicon Nitride
10:30–11:00		Kim, Sungjun	Chungbuk National University, South Korea	Silicon Nitride Memristors as Synapses
11:00–11:30		Panin, Gennady	Dongguk University Seoul, South Korea IMT RAS, Russia	Photomemristive devices based on 2D crystals for neuromorphic computing
11:30–12:00	Coffee Break			
12:00–14:00	**STOCHASTIC MULTISTABLE SYSTEMS** (Chair: Pershin, Yuriy)			
12:00–12:30	INVITED REPORTS	Spagnolo, Bernardo	University of Palermo, Italy	Noise-induced phenomena in nonlinear multistable classical and quantum systems
12:30–13:00		Gorshkov, Oleg	Lobachevsky University, Russia	On the reproducibility and degradation of switching parameters of memristive devices
13:00–13:30		Karafyllidis, Ioannis	Democritus University of Thrace, Greece	Models for simulation of single, two state and multi-state memristors and their operation as qubits and one-qubit quantum gates
13:30–14:00		Satanin, Arkady	Lobachevsky University, Russia	Quantum driven Josephson circuits: dissipation, noise and memory effects
14:00–15:00	LUNCH*			
15:00–16:00	**MODELING AND DESIGN OF MEMRISTIVE DEVICES AND SYSTEMS** (Chair: Erokhin, Victor)			
15:00–15:30	INVITED REPORTS	Bobylev, Andrey	Tyumen State University, Russia	Memory and universal logic matrixes for neuroprocessor
15:30–16:00		Shchanikov, Sergey	Vladimir State University, Russia	Designing memristor-based neural networks with specified operation accuracy
16:00–16:30	Coffee Break			
16:30–17:30	**MODELING OF MEMRISTIVE PHENOMENON** (Chair: Spagnolo, Bernardo)			
16:30–17:00	INVITED REPORTS	Sidorenko, Kirill	Lobachevsky University, Russia	Monte-Carlo simulation of anionic resistive switching phenomenon
17:00–17:30		Sirakoulis, Georgios	Democritus University of Thrace, Greece	Modeling of memristive properties of LPCVD Si_3N_4

Wednesday, May 16

Time	Activity	Presenting/First Author	Institution	Title
9:30 – 11:00	**PHYSICS AND TECHNOLOGY OF MEMRISTIVE NANOMATERIALS AND CIRCUITS** (Chair: Dimitrakis, Panagiotis)			
9:30–10:00	INVITED REPORTS	Emelyanov, Andrey	NRC “Kurchatov Institute”, Russia	Towards magnetic memristor: resistive switching and superferromagnetic ordering effects in nanogranular $(CoFeB)_x(LiNbO_y)_{100-x}$ nanocomposites
10:00–10:30		Andreeva, Natalia	St. Petersburg Electrotechnical University, Russia	Design of bilayer metal-oxide structures with multilevel resistive switching effects for neural networks
10:30–11:00		Shvets, Petr	Kant Baltic Federal University, Russia	ARC sputtering of titanium oxide based memristors
11:00–11:30	Coffee Break			
11:30–12:30	**ROUND TABLE**	Kovalchuk, Mikhail Naraykin, Oleg Demin, Vyacheslav Mikhaylov, Alexey Dimitrakis, Panagiotis Sirakoulis, Georgios Spagnolo, Bernardo Gorshkov, Oleg	Nanoelectronic Memristive Devices for Quantum and Neuromorphic Computing	
12:30–13:00	**CLOSING CEREMONY**	Kovalchuk, Mikhail Naraykin, Oleg Demin, Vyacheslav Mikhaylov, Alexey Dimitrakis, Panagiotis		

*Included for participants who has paid the registration fee.