

47th IFF Spring School, 22.02. – 04.03.2016

Memristive Phenomena - From Fundamental Physics to Neuromorphic Computing

Location:

Forschungszentrum Jülich GmbH, Wilhelm-Johnen-Straße, 52428 Jülich, Germany

Zentralbibliothek / Central Library (Building 04.7, Auditorium / Lecture Hall)

<http://www.iff-springschool.de>

- 1. Week -	Monday, 22 February 2016	Tuesday, 23 February 2016	Wednesday, 24 February 2016	Thursday, 25 February 2016	Friday, 26 February 2016
	Bus transfer				
	08:30 h: Registration	Bus transfer	Bus transfer	Bus transfer	Bus transfer
09:00 - 10:00 h	Welcome /Organisational Sebastian Schmidt/Michael Beissel	Electron Transport A7 Matthias Wuttig (RWTH Aachen)	Physics and Chemistry of Redox Processes A6 Rotraut Merkle (MPI Stuttgart)	Electron Tunneling A9 Daniel Wortmann (FZ Jülich)	Transmission Electron Microscopy C3 ChunLin Jia (FZ Jülich)
	Introduction Rainer Waser				
10:00 - 11:00 h	Structure of Matter A1 David DiVincenzo (FZ Jülich)	Lattice Disorder A3 Felix Gunkel (FZ Jülich)	Magnetism and Spin Polarized Transport A8 Daniel Bürgler (FZ Jülich)	Chemical Vapour Deposition B1 Susanne Hoffmann-Eifert (FZ Jülich)	HRTEM based Spectroscopy Techniques (C4)
11:00 - 11:30 h	Coffee Break				
11:30 - 12:30 h	Structure of Matter A1 David DiVincenzo (FZ Jülich)	Lattice Disorder (A3) F. Gunkel Ion Transport Mechanisms (A4) Roger de Souza (RWTH Aachen)	Magnetism and Spin-Polarized Transport (A8) Daniel Bürgler (FZ Jülich)	Physical Deposition Techniques B2 Regina Dittmann (FZ Jülich)	C4 Chris Boothroyd (FZ Jülich)
12:30 - 13:00 h	Discussion and Break				
13:00 - 14:00 h	Lunch (Canteen "Seecasino")				
14:00 - 15:00 h	Electronic Structure of Matter A2 Stefan Blügel (FZ Jülich)	Ion Transport mechanisms A4 Roger de Souza (RWTH Aachen)	Lab Tours (see separate programme)	Nanotechnological Integration B3 Jürgen Moers (FZ Jülich)	X-ray Diffraction Methods C2 Uwe Klemradt (RWTH Aachen)
15:00 - 16:00 h		Phase Transitions A5 Christian Pithan (FZ Jülich)		Self-Organization Techniques B4 Bert Voigtländer (FZ Jülich)	Scanning Probe Analysis C7 Philipp Ebert (FZ Jülich)
16:00 - 16:30 h	Coffee Break		Coffee Break		
16:30 - 17:30 h	Electron Transport A7 Matthias Wuttig (RWTH Aachen)	Physics and Chemistry of Redox Processes A6 Rotraut Merkle (MPI Stuttgart)		Electrical Characterization of Memristive Cells C1 Ulrich Böttger (RWTH Aachen)	Scanning Probe Analysis C7 Philipp Ebert (FZ Jülich)
17:45	Bus transfer	18:00 h Welcome Dinner 20:30 Bus transfer	Bus transfer	Bus transfer	Bus transfer

A Fundamentals

B Technology

C Analysis

D Phenomena

E Applications

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- 2. Week -	Monday, 29 February 2016	Tuesday, 01 March 2016	Wednesday, 02 March 2016	Thursday, 03 March 2016	Friday, 04 March 2016
	Bus transfer	Bus transfer	Bus transfer	Bus transfer	Bus transfer
09:00 - 10:00 h	Photoelectron Spectroscopy C5 Lukasz Plucinski (FZ Jülich)	Electrochemical Metallization Memories(D2) Ilia Valov (FZ Jülich)	Phase Change Memories (D6) Matthias Wuttig (RWTH Aachen)	Memristive Tunneling Devices: From Device Principles to Neuromorphic Applications D9 Martin Ziegler (Univ. Kiel)	From Memristive Gate-Array Logic to Neuromorphic Computing E4 Eike Linn (RWTH Aachen)
10:00 - 11:00 h	Photoelectron Emission Microscopy (C6)	Valence-Change in Nanoionic Oxide Cells D3 Regina Dittmann (FZ Jülich)	Threshold and Memory Switching Kinetics of PCM D7 Martin Salinga (RWTH Aachen)		
11:00 - 11:30 h	Coffee Break				
11:30 - 12:30 h	C6 Claus M. Schneider (FZ Jülich)	Switching Kinetics of Valence Change Memories (D4) Rainer Waser (FZ Jülich, RWTH Ac)	Interfacial Phase Change Memories D8 Riccardo Mazzarello (RWTH Aachen)	Reliability Issues of Memristive Devices (E1) Arne Heitmann (RWTH Aachen)	11:05 – 11:30 Farewell Session Discussion Closing
12:30 - 13:00 h	Discussion and Break				11:35 - 12:40 Lunch / Canteen
13:00 h	Lunch (Canteen "Seecasino")				13:00 Departure of the buses from lecture hall to Aachen and Düren
14:00 - 15:00 h	Spintronics D1 Ioan-Lucian Prejbeanu	Switching Kinetics of Valence Change Memories D4 Rainer Waser (FZ Jülich, RWTH Ac)	<i>Lab Tours (see separate programme)</i>	Ultimate Physical Limit of Scaling E2 Victor Zhirnov (SRC, USA)	
15:00 - 16:00 h	(CEA-France)	Electron Avalanche in Gap Mott Insulators (D5) Etienne Janod (CNRS Nantes, France)			
16:00 - 16:30 h	Coffee Break	Coffee Break		Coffee Break	
16:30 - 17:30 h	Electrochemical Metallization Memories D2 Ilia Valov (FZ Jülich)	Phase Change Memories D6 Matthias Wuttig (RWTH Aachen)	Select Devices for Memristive Crossbar Arrays E3 Dirk Wouters (RWTH Aachen)		
17:45	Bus transfer	Bus transfer	Bus transfer	18:00 h Farewell Dinner (Canteen) 20:30 arrival of the buses; flexible departure until 21:30 at the latest	

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