

Time	Duration	Type	Contribution title and presenter
Monday 14th March 2011			
8.50-9.00	10	Welcome	“Why Multifrequency AFM?” Ricardo García Instituto de Microelectrónica de Madrid, CSIC, Tres Cantos, Spain
Session I – Fundamentals: Dynamics of nanomechanical systems I Chairperson: Robert Stark			
9.00-9.30	30	Invited 1	“Recent results on higher and lower harmonics in liquid environment dynamic AFM” Arvind Raman Purdue University, West Lafayette, USA
9.30-10.00	30	Invited 2	“Instability and nonlinear degeneracy in dynamic atomic force microscopy” Harry Dankowicz University of Illinois at Urbana-Champaign, Urbana, IL, USA
10.00-10.20	20	Oral 1	“Force versus distance measurements in dynamic AFM: the case of non-constant amplitude” T.H. Oosterkamp Leiden Institute of Physics, Leiden University, Netherlands
10.20-10.35	15	Oral 2	“Cantilever dynamics in liquid environment dynamic AFM when using higher-order cantilever eigenmodes” Daniel Kiracofe Purdue University, West Lafayette, USA
Coffee break : 10.35-11.00			
Session II – Bimodal AFM I Chairperson: Udo D. Schwarz			
11.00-11.30	30	Invited 3	“Loss Tangent Imaging with Amplitude Modulation Atomic Force Microscopy” Roger Proksch Asylum Research, Santa Barbara, California, USA
11.30-11.50	20	Oral 3	“Repulsive bimodal atomic force microscopy on polymers” Robert W. Stark Center of Smart Interfaces, TU Darmstadt, Darmstadt, Germany
11.50-12.05	15	Oral 4	“Non-invasive structural flexibility mapping of single molecules by bimodal force microscopy” David Martínez-Martín Universidad Autónoma de Madrid, Madrid, Spain
12.05-12.20	15	Oral 5	“Nanomechanical Coupling Enables Detection and Imaging of 5 nm Superparamagnetic Particles in Liquid” Christian Dietz Instituto de Microelectrónica de Madrid, Tres Cantos, Spain
Five minutes break			
12.25-12.45	20	Oral 6	“Trimodal Tapping-Mode AFM: Simultaneous Topographical, Phase and Frequency Shift Contrast” Santiago D. Solares University of Maryland, Maryland, USA
12.45-13.00	15	Oral 7	“Imaging of water layers on proteins by bimodal dynamic force microscopy” Elena T. Herruzo Instituto de Microelectrónica de Madrid, Tres Cantos, Spain

13.00-13.15	15	Oral 8	“Morphology of alkanethiols on Au(111) investigated by Bimodal AFM” Cristiano Albonetti ISMN-CNR, Bologna, Italy
13.15-13.30	15	Oral 9	“Analysis of Bimodal Frequency-Modulation Atomic force microscopy scanning a sample’s working function and topography” Shueei-Muh Lin Kun Shan University, Republic of China
Lunch: 13.30-15.00			
Session III: Atomic and molecular resolution imaging Chairperson: Ozgur Sahin			
15.00-15.30	30	Invited 4	“High-resolution bimodal dynamic force microscopy and spectroscopy of atomic-scale interactions” Shigeki Kawai University of Basel, Basel Switzerland
15.30-15.50	20	Oral 10	“Atom-Specific Interaction Quantification and Identification by Combined Scanning Tunneling and Atomic Force Microscopy” Udo D. Schwarz Yale University, New Haven, USA
15.50-16.10	20	Oral 11	“Achieving sub-molecular resolution on biological samples: constant height frequency shift imaging of dsDNA by CryoAFM” A. Cerreta Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
16.10-16.25	15	Oral 12	“Subsurface Imaging of Soft Polymeric Materials” E.-C. Spitzner Technische Universität Chemnitz, Chemnitz, Germany
16.25-16.40	15	Oral 13	“Simulating NC-AFM imaging of calcite in UHV and water” Bernhard Reischl Tampere University of Technology, Tampere, Finland.
Coffee Break: 16:40-17:00			
Session IV– Nanomechanical devices and sensors I Chairperson: Arvind Raman			
17.00-17.20	20	Oral 14	“Novel paradigms on nanomechanical systems for multifrequency analysis” E. Gil-Santos Instituto de Microelectrónica de Madrid, Tres Cantos, Spain
17.20-17.35	15	Oral 15	“Measurement of high frequency vibrations of nanoelectromechanical systems by atomic force microscopy” Marc Serra-Garcia Instituto de Microelectrónica de Barcelona, Barcelona, Spain
17.35-17.50	15	Oral 16	“Simultaneous imaging of the topography and dynamic properties of micro and nanomechanical systems by optical beam deflection” Nicolas F. Martinez Mecwins, Tres Cantos, Spain
17.50-18.05	15	Oral 17	“Distance-dependent resonance curves of substrates, nanowires, and vibrating nanowires” Ivo Knittel Saarland University, Saarbrücken, Germany

Session V – Posters			
18.05-19.35	1h30		Poster Session All topics Drinks will be served during the poster session
Conference Dinner Meeting at lobby, bus leaves at:			
Tuesday 15th March 2011			
Session VI – Fundamentals: Dynamics of nanomechanical systems II Chairperson: Roger Proksch			
8.50-9.20	30	Invited 5	“Nanomechanical Devices and Applications in Atomic Force Microscopy and Sensing in Fluid” John E. Sader University of Melbourne, Victoria, Australia
9.20-9.50	30	Invited 6	“Advancing resolution and quantification of dynamic AFM on heterogeneous samples in ambient environments“ Neil H Thomson University of Leeds, Leeds, United Kingdom
9.50-10.10	20	Oral 18	“Fundamentals of nanometrology in atomic force microscopy in liquid medium“ John Melcher Purdue University, West Lafayette, USA
10.10-10.25	15	Oral 19	“On the Mapping of the Mechanical Properties of Polymeric Materials at the Nanoscale by Real-Time Force-Distance Curve Analysis” Philippe Leclere University of Mons, Mons, Belgium
Coffee Break: 10.25-11.00			
Session VII– Multifrequency AFM imaging I Chairperson: Santiago D. Solares			
11.00-11.30	30	Invited 7	“Measuring tip-surface interaction with frequency mixing and nonlinear dynamics” David Haviland Royal Institute of Technology (KTH), Stockholm, Sweden
11.30-11.45	15	Oral 20	“Reconstructing conservative and non-conservative interactions with intermodulation atomic force microscopy” Daniel Platz Royal Institute of Technology (KTH), Stockholm, Sweden
11.45-12.00	15	Oral 21	“SubSurface AFM: towards nondestructive 3D microscopy” Gerard J. Verbiest Kamerlingh Onnes Laboratory LION, CA Leiden, Netherlands
12.00-12.15	15	Oral 22	“Applications of Higher-Eigenmode Contact Resonance Force Microscopy” Jason P. Killgore National Institute of Standards and Technology, Boulder, USA

12.15-12.30	15	Oral 23	<p>“Hydration and tip stability in ambient dynamic AFM” Sergio Santos University of Leeds, Leeds, United Kingdom</p>
Five minutes break			
12.35-12.55	20	Oral 24	<p>“ Rapid single-molecule force spectroscopy measurements in the tapping mode” Ozgur Sahin Wyss Institute for Biologically Inspired Engineering, Harvard University, Boston, MA USA</p>
12.55-13.10	15	Oral 25	<p>“Interactive simulation tool for multifrequency force microscopy: dForce” Horacio V. Guzman Instituto de Microelectrónica de Madrid, Tres Cantos, Spain</p>
13.10-13.25	15	Oral 26	<p>“Nanomechanical characterization of polypropylene-based materials using multifrequency AFM-based methods” Dalia G. Yablon ExxonMobil Research and Engineering, Annandale, USA</p>
Lunch: 13.25-15.00			
Session VIII: Multifrequency AFM imaging II Chairperson: David Haviland			
15.00-15.30	30	Invited 8	<p>“Simultaneous nanoscale mapping of morphological and mechanical properties of biological surfaces” Justin Legleiter West Virginia University, Morgantown, USA</p>
15.30-16.00	30	Invited 9	<p>“The Band Excitation Method for Scanning Probe Microscopy” Stephen Jesse Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA</p>
16.00-16.15	15	Oral 27	<p>“The charge and discharge of graphene sheets at ambient conditions” A. Verdaguer Campus de la UAB, Bellaterra, Spain</p>
16.15-16.30	15	Oral 28	<p>“Direct AM/FM Side-band Detection and Q-control for Multi-frequency AFM” Sadik Hafizovic Zurich Instruments AG, Zurich, Switzerland</p>
16.30-16.45	15	Oral 29	<p>“Beyond Imaging: how quantitative nanoscale measurements help material characterization?” Samuel Lesko Bruker Nano, Palaiseau, France</p>
Coffee break: 16.45-17.05			
Session IX: Nanomechanical devices and sensors II Chairperson: John E. Sader			
17.05-17.25	20	Oral 30	<p>“Piezoelectric quartz tuning fork force sensors used in multifrequency AFM” G. Rubio-Bollinger Universidad Autónoma de Madrid, Madrid, Spain</p>
17.25-17.40	15	Oral 31	<p>“A High Speed AFM in Slow Motion” Oliver Payton University of Bristol, Bristol, United Kingdom</p>

17.40-17.55	15	Oral 32	<p>“Self oscillating mode in air and liquid: a multimodal analysis” Massimo Vassalli National Research Council (CNR), Genova, Italy</p>
17.55-18.10	15	Oral 33	<p>“Dynamical characterization of vibrating AFM cantilevers forced by photothermal and optical excitation” Valerio Pini BioNanoMechanics Laboratory, Madrid, Spain</p>
18.10-18.25	15	Oral 34	<p>“Low magnetic signals measured by a combination of MFM and KPFM” Agustina Asenjo Instituto de Ciencia de Materiales de Madrid, Madrid, Spain</p>