

5th Multifrequency AFM Conference

Monday 16th June 2014

Time	Duration (minutes)	Type	Title and Speaker
08.30-10.30	2h	Tutorial	Multifrequency AFM Tutorial Arvind Raman, Marta Kocun and Roger Proksch
09.00-11.45	2h45	Registration	
Opening			
11.50-12.10	20	Welcome	Multifrequency AFM and beyond Ricardo Garcia
Session I: General Multifrequency AFM Chairperson: David Haviland			
12.10	30	Invited 1	Exploring Dynamic Phenomena in Solids by Multifrequency and Multidimensional Scanning Probe Microscopy Stephen Jesse
12.40	30	Invited 2	Towards Hooke's Law for Tapping Mode – Extracting Quantitative Mechanical Properties from AM-AFM Roger Proksch
13.10	20	Expert 1	Real-time probe based quantitative determination of material properties at the nanoscale Murti Salapaka
Lunch break 13:30-15:00			
Session II: Bimodal AFM Chairperson: Roger Proksch			
15.00	20	Expert 2	Trade-offs in Sensitivity and Sampling Depth in Bimodal Atomic Force Microscopy and Comparison to the Trimodal Case Santiago D. Solares
15.20	20	Expert 3	Fast nanomechanical spectroscopy of soft matter Elena T. Herruzo
15.40	20	Expert 4	Towards the Multifrequency High Speed AFM Ignacio Casuso
16.00	15	Oral 1	Force reconstruction with bimodal and multimodal AFM Daniel Forchheimer
10' break			
16.25	15	Oral 2	Phase contrast of bimodal and trimodal AFM: Role of the amplitude ratio and energy of the eigenmodes Merhnoosh Damircheli
16.40	15	Oral 3	Quantitative Elastic Measurements of High Modulus Materials with Tapping/AM-FM Mode Marta Kocun
Session III – Posters Coffee and drinks will be served during the poster session			
17.00-18.30	1h30		

Tuesday 17th June 2014

Session IV: Nanomechanics

Chairperson: Arvind Raman

9.00	30	Invited 3	The Physics of Gas- and Liquid-Structure Interactions of Mechanical Sensors at Nanometer Scales John E. Sader
9.30	20	Expert 5	Phase contrast and anharmonicity in multifrequency atomic force microscopy Sergio Santos
9.50	15	Oral 4	A novel method for rheology of confined liquids and first results on nano-confined water Shivprasad Patil
10.05	15	Oral 5	The Influence of Cantilever Drive Mechanisms on Thermally Limited Noise Performance in Viscous Environments Jason Kilpatrick
10.20	15	Oral 6	Calibration of the spring constants of the higher flexural modes of microcantilever sensors John Parkin

Coffee Break: 10:35-11:10

Session V: Nanomechanical Spectroscopy

Chairperson: John Eli Sader

11.10	20	Expert 6	Mechanical properties of nanoshells: from viruses to protein cages Pedro J. de Pablo
11.30	20	Expert 7	AM-AFM Force Spectroscopy: a Framework to Evaluate the Time Dependent Wettability of Graphitic Surfaces Matteo Chiesa
11.50	15	Oral 7	General Force Reconstruction Method for Amplitude Modulation AFM Experiments Amir F. Payam
12.05	15	Oral 8	Fast Stiffness Mapping of Biological Cells by High-Bandwidth AFM Andrew Wang

10' break

Session VI: Nanomechanical Spectroscopy

Chairperson: Stephen Jesse

12.30	20	Expert 8	High-speed force spectroscopy (HS-FS) of single molecules Felix Rico
12.50	15	Oral 9	Three-Dimensional Imaging and Reconstruction of Chemical Groups in a Protein Complex by Atomic Force Microscopy Duckhoe Kim
13.05	15	Oral 10	Local viscoelastic properties of living cells studied by Force Feedback Microscopy Luca Costa
13.20	15	Oral 11	Mapping mechanical properties of living animal cells with high spatiotemporal resolution using T-shaped cantilevers Nicola Mandriota

Lunch break: 13:35-15:00

Session VII: High resolution imaging in vacuum

Chairperson: Jose María Gómez-Rodríguez

15.00	30	Invited 4	Transient Atom by Atom Rehybridization of Graphene Induced by an Atomic Force Microscope Franz J. Giessibl
15.30	30	Invited 5	Graphene/metal Moirés: Can AFM resolve small electronic modulations? Rubén Pérez
16.00	30	Invited 6	Sub-molecular resolution with simultaneous bimodal AFM and STM: characterization of pentacene on the anatase (101) surface Oscar Custance

Coffee break: 16:30-17:00**Session VIII: Novel methods**

Chairperson: Julio Gómez-Herrero

17.00	20	Expert 9	Atomic-resolution Imaging of the Optical Near-field on the Au(111) Surface Using Photon-induced Force Yasuhiro Sugawara
17.20	15	Oral 12	Deeper insight into Torsional Resonance-Magnetic Force Microscopy José Miguel García-Martín
17.35	15	Oral 13	Enhanced efficiency in the excitation of high modes for Force Microscopy and Resonant Mechanical Sensors Monica Luna
17.50	15	Oral 14	Scanning probe piezoresistance: a new experimental tool (or what happens when you put an elephant on stilettos) Neus Domingo

Conference Dinner

Asador Donostiarra, street: Infanta Mercedes 79

Wednesday 18th June 2014**Session IX: Multifrequency AFM methods and Applications**

Chairperson: Santiago Solares

9.00	30	Invited 7	Recent Developments with Intermodulation Atomic Force Microscopy David Haviland
9.30	30	Invited 8	Towards high speed multifrequency AFM Georg Fantner
10.00	15	Oral 15	High-speed Contact Resonance atomic force microscopy Oliver Payton
10.15	15	Oral 16	Analysis of multifrequency AFM data Daniel Platz

Coffee Break: 10:30-11:00

Session X: High resolution mapping in liquid

Chairperson: Ignacio Casuso

11.00	30	Invited 9	Molecular-scale visualization of biomolecules and their biochemical functions by frequency modulation atomic force microscopy Hirofumi Yamada
11.30	20	Expert 10	Probing local charge screening, ion diffusion, and electrochemical processes at the solid-liquid interface using electrochemical force microscopy Liam Collins
11.50	15	Oral 17	Magnetic Force Microscopy imaging in liquid Miriam Jaafar
12.05	15	Oral 18	Water footprints in tip-sample force reconstruction for dynamic atomic force microscopy in ambient conditions Albert Verdaguer

10' break**Session XI: 3D imaging by multifrequency AFM**

Chairperson: Elena T. Herruzo

12.30	20	Expert 11	Surface and Volume Properties of Elastomeric Polypropylene Studied with Enhanced Atomic Force Microscopy Methods Christian Dietz
12.50	20	Expert 12	Visualizing the Subsurface of Soft Matter: Simultaneous Topographical Imaging, Depth Modulation, and Compositional Mapping with Triple Frequency Atomic Force Microscopy Daniel Ebeling
13.10	15	Oral 19	Mode Synthetizing Atomic Force Microscopy for 3D reconstruction Pauline Vitry

Lunch break: 13:30 – 15:00**Session XII: Special session**

Chairperson: Ricardo Garcia

15.15	20	Expert 13	Mechanical properties of fluctuating graphene Julio Gómez-Herrero
15.35	15	Oral 20	Antibody adsorption over graphene : an atomistic MD and MF-AFM study Guilherme Vilhena
15.50	15	Oral 21	Peak forces in single and bimodal AFM Horacio V. Guzman
16.05	15	Oral 22	Dissipation in Magnetic Force Microscopy: artifacts or information? Óscar Iglesias-Freire

Coffee break: 16:20-16:30

16.30	20	Expert 14	High sensitivity linear piezoresistive transduction for nanomechanical beam resonators Alvaro San Paulo
16.50	15	Oral 23	MEMS 3D topography, vibration and resonance dynamical analysis by DHM Yves Emery

