

Synchrotron Radiation to study Atomic Layer Deposition

Sunday 12 June 2016 - Wednesday 15 June 2016

ALBA Synchrotron Programme

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Sunday 12 June 2016

 Welcome Party - (20:00-22:00)

Monday 13 June 2016

Talks 1 (09:15-13:00)

time	title	presenter
09:15	Welcome messages	
09:30	ALD – From Ideal to Real	Prof. NILSEN, Ola (University of Oslo)
10:15	Epitaxial complex oxide thin films by atomic layer deposition	Dr. COLL, Mariona (ICMAB-CSIC)
10:35	Coffee break	
10:55	Controlling the short-range order of amorphous oxides by nanometer size	Mrs. ETINGER-GELLER, Yael (Technion)
11:15	Straightforward conversion of MnO ₂ to Li _x Mn ₂ O ₄ by gas-solid reactions	Dr. MIIKKULAINEN, Ville (University of Helsinki)
11:35	Use of atomic layer deposition for improving pattern transfer in directed self-assembly of PS-b-PMMA	Mrs. EVANGELIO, Laura (IMB-CNM (CSIC))
11:55	Synchrotron Radiation and thin film growth phenomena	FERRER, Salvador (ALBA-CELLS)
12:40	Characterization Capabilities for Atomic Layer Deposition at the National Synchrotron Light Source II	Dr. ATTENKOFER, Klaus (Brookhaven National Laboratory)

Posters (14:30-16:00)

title	presenter	board
In Situ GISAXS Characterization of ALD in Mesoporous Thin Films	Dr. DENDOOVEN, Jolien	
ALD of Titanium Dioxide Films Used as Protective Coatings for Photoelectrochemical Cells	Mr. COTTRE, Thorsten Mr. HAJDUK, Andreas	
A Future Path for Selective Atomic Layer Deposition	Mrs. KORNBLUM, Noga	
Phase Transitions in Compositionally Graded Ferroelectric Superlattices	Mrs. RAZUMNAYA, Anna	
Atomic layer deposited HfO₂-based magnetic tunnel junctions	Dr. THOMAS, Andy	
Untangling Diffraction Contributions from Epitaxial Thin Films	Mr. SØNSTEBY, Henrik	
Visualizing the incipient growth of ZnO ultra thin films on InGaAs for tailoring contact resistivity	Mr. SKOPIN, Evgenii	
Near Ambient Pressure Photoemission at ALBA	Dr. ESCUDERO, Carlos	
CLÆSS: the Core Level Absorption & Emission Spectroscopies Beamline at ALBA	Dr. SIMONELLI, Laura	
The non-crystalline diffraction beamline at ALBA	MARTINEZ, Juan Carlos	
BOREAS: Polarization-dependent Soft X-ray Absorption and Resonant Scattering Beamline	Dr. GARGIANI, Pierluigi	
Monitoring of Atomic Layer Deposition by Infrared Spectroscopy	KREUZER, Martin	

Talks 2 (16:00-18:20)

time	title	presenter
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16:00	Gas-source MBE growth of 2D materials examined using synchrotron radiation	Dr. ENGSTROM, James (School of Chemical and Biomolecular Engineering, Cornell University Ithaca, NY, USA)
16:20	Speciation depth-profiling of nano-structured specimen by combined GIXRF-NEXAFS	Dr. POLLAKOWSKI, Beatrix (Physikalisch-Technische Bundesanstalt)
16:40	Production and tailoring of etched ion-track nanopores and nanotubes by ALD	Dr. CARRILLO SOLANO, Mercedes (GSI Helmholtzzentrum für Schwerionenforschung GmbH)
17:00	Coffee break	
17:20	Bulk Heterojunction Electrodes Based on CNT fibre/ZnO Hybrids Produced by ALD	Mr. MONREAL, Alfonso (IMDEA Materials)
17:40	Investigation of Si-doped HfO ₂ ALD films by means of EXAFS and XANES	Mr. SCHENK, Tony (NaMLab gGmbH)
18:00	SAXS Investigation of Nano-Pore Membranes Coated By Atomic Layer Deposition	Ms. HADLEY, Andrea (Department of Electronic Materials Engineering, Research School of Physics and Engineering, The Australian National University)

Tuesday 14 June 2016

Talks 3 (09:00-13:05)

time	title	presenter
09:00	In-situ characterization during ALD	Prof. DETAVERNIER, Christophe
09:45	The need for validation of ALD mechanisms predicted from first principles	Dr. ELLIOTT, Simon (Tyndall National Institute)
10:05	Controlling the Ti Oxidation State in TiO ₂ – An In-Line XPS Study	Dr. BRONNEBERG, Aafke (Helmholtz-Zentrum Berlin)
10:25	In Situ Study of the Morphological Stability of ALD-Grown Pt Nanoparticles During Thermal Annealing	Dr. SOLANO, Eduardo (Ghent Univesity)
10:45	Coffee break	
11:05	SR X-ray diffraction and X-ray absorption fluorescence spectroscopy study of Er-doped HfO ₂ deposited by atomic layer deposition	Dr. WIEMER, Claudia (CNR IMM)
11:25	On the Oxidation State of MnO _x – An In-Line XPS Study	Mr. PLATE, Paul (Helmholtz-Zentrum Berlin, Institute for Solar Fuels)
11:45	Quantitative and chemical characterization capabilities for atomic layer depositions using synchrotron-based reference-free X-ray spectrometry	Mr. HOENICKE, Philipp (Physikalisch-Technische Bundesanstalt)
12:05	XANES and XMCD of pure and Fe doped ZrO ₂ thin films grown by ALD	Dr. LAMPERTI, Alessio (CNR IMM)
12:25	Interfacial and surface effects during the growth of Sb ₂ Te ₃ /Sb ₂ Se ₃ ternary films and multilayer structures studied by QCM in situ analysis.	Mr. WIEGAND, Christoph (Universität Hamburg / IFW Dresden)
12:45	In Situ High Temperature X-Ray Scattering Studies of some Atomic Layer Deposited Layers of Metals and Metal Oxides	Mr. HEIKKILÄ, Mikko (Laboratory of Inorganic Chemistry, University of Helsinki)

Talks 4 (14:30-18:15)

time	title	presenter
14:30	Live monitoring of ALD by ambient pressure x-ray photoelectron spectroscopy	Prof. SCHNADT, Joachim
15:15	The MOON reactor: optimizing oxyde nanostructures ALD by combining in situ synchrotron X-ray and optical analysis	Prof. RENEVIER, Hubert (Grenoble Institut of Technology)
16:00	Aluminum Nitride Grown by Atomic Layer Epitaxy Characterized with Real-Time Grazing Incidence Small Angle X-ray Scattering	Dr. ANDERSON, Virginia (US Naval Research Laboratory)
16:20	Near-Ambient Pressure X-ray Photoelectron Spectroscopy Study of the Atomic Layer Deposition of HfO ₂ on SiO ₂ / Si	Dr. YEROMONAHOS, Christelle (CNRS)
16:40	Coffee break	
17:00	Thin, low roughness Ru films deposited by thermal and plasma enhanced atomic layer deposition using RuO ₄ and H ₂ at low temperatures	Mr. MINJAUW, Matthias (Ghent University)
17:20	An atomistic view of the incipient growth of zinc oxide by in-situ x-ray absorption spectroscopy	Dr. CIATTO, Gianluca (Synchrotron SOLEIL)

17:40	In Situ Synchrotron-based XRF and GISAXS Study of ALD Encapsulation of Supported Nanocrystals	Dr. DENDOOVEN, Jolien (Ghent University - CoCooN)
18:00	Open Session proposals	

Social dinner - (20:30-23:00)

Wednesday 15 June 2016

Visit to ALBA (09:30-11:00)

Open session (11:30-13:00)

Tutorials (14:30-16:30)

time	title	presenter
14:30	EXAFS - Tutorial	Dr. ANSPOKS, Andris (Institute of Solid State Physics, University of Latvia)
15:30	GISAXS - tutorial	Dr. GANEVA, Marina (Forschungszentrum Juelich GmbH) Dr. DENDOOVEN, Jolien (Ghent University - CoCooN)

Tutorials (17:00-18:00)

time	title	presenter
17:00	XPS - Tutorial	Prof. GUZIEWICZ, Elzbieta (Institute of Physics Polish Academy of Sciences)