



## Rémi Lazzari

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Born on July 1972 (France)

- 2013 - : **LEADER OF « LOW-DIMENSIONAL OXIDES » GROUP,**  
NanoSciences Institute of Paris, UMR 7588, CNRS-University Pierre and Marie Curie  
(9 Researchers, 2 engineers, 8 PhD students and 2 Post-doc)  
Research topics: Model catalyst, hydroxylation and hydration, growth wetting and  
adhesion, oxide nanoobjects: thin films and nanoparticles, atomic and electronic  
structure  
Web : <http://www.insp.jussieu.fr/-Oxydes-en-basses-dimensions-.html?lang=en>
- June 2012: **HABILITATION OF UNIVERSITY PIERRE AND MARIE CURIE,**  
Title: “Watching nanoparticle growth: from nanoplasmonics to reciprocal space”  
Committee: Dr. J. Daillant (President, Head of SOLEIL synchrotron), Prof. Y. Garreau  
(University Paris 7/MPQ), Prof. S. Giorgio (University of Aix-Marseille/CINAM), Prof.  
P. Zeppenfeld (University of Linz, Austria), Dr. G. Renaud (ESRF, CEA Grenoble) and  
Prof. J. Jupille (University Paris 6/INSP)
- 2002 - 2013: **RESEARCHER AT CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE**  
NanoSciences Institute of Paris, UMR 7588, CNRS-University Pierre and Marie Curie  
« Low-dimensional oxides » group of Prof. J. Jupille  
Research topics: Structure and reactivity of oxide thin films, surfaces, and their  
interfaces with metals; catalytic activity of supported metallic nanoparticles; surface  
science and synchrotron studies.
- 2000 - 2002: **POST-DOCTORAL POSITION AT COMMISSARIAT À L'ÉNERGIE ATOMIQUE-GRENOBLE**  
Team “Interfaces and Synchrotron radiation” group of Dr. G. Renaud  
Research topics: X-ray scattering at grazing incidence; ESRF synchrotron beamline;  
self-organization of nanoparticles on surfaces.
- 1997 - 2000: **PH.D. IN SOLID STATE PHYSICS** from University Paris-Sud, Orsay, France  
Defended in September 2000 with honor, Supervisor: J. Jupille  
Industrial Contract at Laboratoire Mixte CNRS/Saint Gobain, Aubervilliers

Title: "Towards the control of thin film growth: a study by optical and electrons spectroscopies"

1996 - 1997: **RESEARCH POSITION AT CEA** - Theoretical and Applied Physics Department, France  
Topic: Modeling of IR-Raman phonons spectra of boron carbide by DFT supervised by Dr. N. Vast

1995 - 1996: **MASTER COURSES IN SOLID STATE PHYSICS WITH DISTINCTION**  
University Pierre and Marie Curie, Paris

1992 - 1996: **ESPCI INGENEER WITH DISTINCTION**  
**ECOLE SUPÉRIEURE DE PHYSIQUE ET CHIMIE INDUSTRIELLES DE PARIS**

### **Web of Science bibliometry and figures**

49 articles in peer-review journals  
12 articles in peer-review conference proceedings  
2 contributions to books  
Number of times cited: 1944 (1676)  
Average citation per item: 34.1  
h-index : 22  
12 invited conferences (9 international / 3 national)  
12 presentations in conferences  
6 courses to specialized schools (4 international / 2 national)  
10 seminars (3 abroad / 7 in France)  
10 presentations at workshops  
2 scientific softwares freely available for the community  
1 month of invited professor in Italy  
12 (co)supervised PhD thesis  
8 post-doctoral fellows

# Publications

## Peer-review regular articles

### **1) Atomic structure and vibrational properties of icosahedral B<sub>4</sub>C Boron carbide**

R. Lazzari, N. Vast, J.M. Besson, S. Baroni, A. Dal Corso, Phys. Rev. Lett. 83(16), 3230-3230 (1999) and erratum 85, 4194 (2000)

### **2) Substrate-induced multipolar resonance in supported free-electron metal spheres**

C. Beita, Y. Borensztein, R. Lazzari, J. Nieto, R.G. Barrera, Phys. Rev. B. 60 (8), 6018-6022 (1999)

### **3) Numerical modelling of the optical response of supported metallic particles**

I. Simonsen, R. Lazzari, J. Jupille, S. Roux, Phys. Rev. B., 61 (11), 7722-7733 (2000)

### **4) Polarizability of truncated spheroidal particles supported by a substrate: model and applications**

R. Lazzari, I. Simonsen, D. Bedeaux, J. Vlieger, J. Jupille, Eur. Phys. Jour. B, 24, 267-284 (2001)

### **5) Multipolar resonances in supported metallic particles: the case of Ag/Al<sub>2</sub>O<sub>3</sub>(0001)**

R. Lazzari, S. Roux, I. Simonsen, J. Jupille, D. Bedeaux, J. Vlieger, Phys. Rev. B, 65, 235424(1-11) (2002)

### **6) IsGISAXS: a program for Grazing Incidence Small-Angle X-Ray Scattering analysis for supported islands**

R. Lazzari, J. Appl. Cryst., 35, 406-421 (2002)

### **7) GranFilm: a software for calculating thin layer dielectric properties and Fresnel coefficients,**

R. Lazzari, I. Simonsen, Thin Solid Films, 419, 124-136 (2002)

### **8) Onset of charge localization on coupling multipolar absorption modes in supported metal particles**

R. Lazzari, I. Simonsen, J. Jupille, EuroPhys Lett., 61, 541-546 (2003)

### **9) Electron energy loss channels and plasmon confinement in supported silver particles,**

R. Lazzari, J.M. Layet, J. Jupille, Phys. Rev. B, 68, 045428(1-11) (2003)

### **10) Grazing incidence X-ray scattering investigations of silicon surface patterned with buried dislocation networks,**

F. Leroy, J. Eymery, D. Buttard, G. Renaud, R. Lazzari, F. Fournel, Appl. Phys. Lett., 82, 2598-2600 (2003)

### **11) Real time monitoring of growing nano-particles,**

G. Renaud, R. Lazzari, C. Revenant, A. Barbier, M. Noblet, O. Ulrich, F. Leroy, J. Jupille, Y. Borensztein, C. Henry, J.P. Deville, F. Scheurer, J. Mane-Mane, F. Fruchart, Science, 300, 1416-1419 (2003)

### **12) Quantitative analysis of grazing incidence small angle X-ray scattering,**

C. Revenant, F. Leroy, R. Lazzari, G. Renaud, C.R. Henry, Phys. Rev. B 69, 036411(1-17) (2004)

### **13) Apparatus for real time in situ quantitative studies of growing nanoparticles by grazing incidence small angle X-ray scattering and surface differential reflectance spectroscopy,**

G. Renaud, M. Ducruet, O. Ulrich and R. Lazzari, Nucl. Inst. Meth. B 222, 667-680 (2004)

**14) Effects of near-neighbor correlations on the diffuse scattering from a one-dimensional paracrystal,**

F. Leroy, R. Lazzari, G. Renaud, Acta. Cryst. A 60, 565-581 (2004)

**15) Wetting and interfacial chemistry of metallic films on the hydroxylated  $\alpha$ -Al<sub>2</sub>O<sub>3</sub>(0001) surface,**

R. Lazzari, J. Jupille, Phys. Rev. B 71, 045409(1-13) (2005)

**16) Flat-top silver nanocrystals on the two polar faces of ZnO: an all angle x-ray scattering investigation,**

N. Jedrecy, G. Renaud, R. Lazzari, J. Jupille, Phys. Rev. B, 72, 045430(1-14) (2005)

**17) Self-organized growth of nanoparticles on a surface patterned by a buried dislocation network**

F. Leroy, G. Renaud, A. Letoublon, R. Lazzari, C. Mottet, J. Goniakowski, Phys. Rev. Lett., 95, 185501 (1-4) (2005)

**18) Unstrained islands with interface coincidence sites versus strained islands: X-ray measurements on Ag/ZnO,**

N. Jedrecy, G. Renaud, R. Lazzari, J. Jupille, Phys. Rev. B, 72, 195404(1-7) (2005)

**19) X-ray scattering from stepped and kinked surfaces: An approach with the paracrystal model**

F. Leroy, R. Lazzari, G. Renaud, Surf. Sci. 601, 1915-1929 (2007)

**20) Structural and morphological evolution of Co on faceted Pt/W(111) surface upon thermal annealing**

C. Revenant, F. Leroy, G. Renaud, R. Lazzari, A. Létoublon, T. Madey, Surf. Sci. 601, 3431-3449 (2007)

**21) Size- and temperature-dependent epitaxy for a strong film-substrate mismatch: The case of Pt/MgO(001)**

J. Olander, R. Lazzari, J. Jupille, B. Mangili, J. Goniakowski, G. Renaud, Phys. Rev. B. 76, 75409(1-16) (2007)

**22) Grazing-incidence small-angle x-ray scattering from dense packing of islands on surfaces: Development of distorted wave Born approximation and correlation between particle sizes and spacing**

R. Lazzari, F. Leroy, G. Renaud, Phys. Rev. B. 76, 125411(1-14) (2007)

**23) Self-similarity during growth of the Au/TiO<sub>2</sub>(110) model catalyst as seen by the scattering of x-rays at grazing-angle incidence**

R. Lazzari, G. Renaud, J. Jupille, F. Leroy, Phys. Rev. B. 76, 125412(1-18) (2007)

**24) Growth of Co on Au(111) studied by multiwavelength anomalous grazing-incidence small-angle x-ray scattering: from nanostructures to percolated thin films and nanopillars**

F. Leroy, G. Renaud, A. Létoublon, R. Lazzari, Phys. Rev. B. 77, 235429(1-14) (2008)

**25) Looking by grazing incidence small angle x-ray scattering at gold nanoparticles supported on rutile TiO<sub>2</sub>(110) during CO oxidation**

M.C. Saint-Lager, A. Bailly, M. Mantilla, S. Garaudée, R. Lazzari, P. Dolle, O. Robach, J. Jupille, I. Laoufi, P. Taunier, Gold Bull. 41, 159-166 (2008)

**26) Oxidation of Mg/Ag(111) investigated by scanning tunneling microscopy: towards atomically smooth MgO nanostructures**

M. Mantilla, J. Jedrecy, R. Lazzari, J. Jupille, Surf. Sci. 602, 3089-3094 (2008)

**27) Adhesion of growing nanoparticles at a glance: Surface differential reflectivity spectroscopy and grazing incidence small angle x-ray scattering**

R. Lazzari, G. Renaud, C. Revenant, J. Jupille, Y. Borensztein, Phys. Rev. B. 79, 125428(1-8) (2009)  
Article selected for Virtual Journal of Nanoscale Science & Technology, Vol 19, Issue 14 (April 2009)

**28) Defect-pinned nucleation, growth and dynamic coalescence of Ag islands on MgO(001): an *in situ* grazing-incidence small-angle x-ray scattering**

C. Revenant, G. Renaud, R. Lazzari, J. Jupille, Phys. Rev. B. 79, 235424(1-10) (2009)

**29) Probing surface and interface morphology with Grazing Incidence Small Angle X-Ray Scattering**

G. Renaud, R. Lazzari, F. Leroy, Surf. Sci. Rep. 64, 255-380 (2009)

**30) X-ray diffraction analysis of thermally-induced stress relaxation in ZnO films deposited by magnetron sputtering on (100) Si substrates**

F. Conchon, P.O. Renault, P. Goudeau, E. Le Bourhis, E. Sondergard, E. Barthel, S. Grachev, E. Gouardes, V. Rondeau, R. Gy, R. Lazzari, J. Jupille, N. Brun, Thin Solid Films 518, 5237-5241 (2010)

**31) Size and catalytic activity of supported gold nanoparticles: an *operando* study during CO oxidation**

I. Laoufi, M.-C. Saint-Lager, R. Lazzari, J. Jupille, O. Robach, S. Garaudée, G. Cabailh, P. Dolle, H. Cruguel, J. Phys. Chem. C 115, 4673-4679 (2011)

**32) Stoichiometry-dependent chemical activity of supported MgO(100) films**

G. Cabailh, R. Lazzari, J. Jupille, L. Savio, M. Smerieri, A. Orzelli, L. Vattuone, and M. Rocca, J. Phys. Chem A 115, 7161-7168 (2011)

**33) Quantitative analysis of nanoparticles growth through plasmonics**

R. Lazzari, J. Jupille, Nanotechnology 22, 445703(1-14) (2011)

**34) Evidence for an active oxygen species on Au/TiO<sub>2</sub>(110) model catalysts during investigation with *in-situ* X-ray Photoelectron Spectroscopy**

K. Dumbuya, G. Cabailh, R. Lazzari, J. Jupille, L. Ringel, M. Pistor, O. Lytken, H.-P. Steinrück, J. M. Gottfried, Catalysis Today 181, 20-25 (2012)

**35) Growth kinetics and size-dependent wetting of Ag/ $\alpha$ -Al<sub>2</sub>O<sub>3</sub>(0001) nanoparticles studied via the plasmonic response**

R. Lazzari, J. Jupille, Nanotechnology 23, 135707(1-13) (2012)  
Article selected by Nanotechweb (<http://nanotechweb.org/cws/article/lab/49382>)

**36) Archetypal structure of ultrathin alumina films: Grazing-incidence x-ray diffraction on Ni(111)**

G. Prévot, S. Le Moal, R. Bernard, B. Croset, R. Lazzari, D. Schmaus, Phys. Rev. B 85, 205450 (1-12) (2012)

**37) CO-induced scavenging of supported Pt nanoclusters: a GISAXS study**

N. Chaâbane, R. Lazzari, J. Jupille, G. Renaud, E.A Soares, J. Phys. Chem. C 116, 23362-23370 (2012)

**38) Real time monitoring of nanoparticle film growth at high deposition rate with optical spectroscopy of plasmon resonances**

S. Grachev, M. de Grazia, E. Barthel, E. Sondergard, R. Lazzari, J. Phys. D: Appl. Phys. 46, 375305 (10pp) (2013)- Highlight of the journal

**39) Interfacial susceptibilities in nanoplasmonics via inversion of Fresnel coefficients**

R. Lazzari, I. Simonsen, J. Jupille, Plasmonics Plasmonics 9, 261–272 (2014)

**40) Structural investigation of nanoporous alumina with grazing incidence small-angle X-ray scattering**

D. Buttard, T. Schüllli, R. Lazzari, Phys. Stat. Sol. A 210, 2521-2525 (2014)

**41) *Ab initio* semi-quantitative analysis of micro-beam Grazing-Incidence Small-Angle X-Ray Scattering ( $\mu$ -GISAXS) during protein crystal nucleation and growth**

C. Nicolini, N.L. Bragazzi, E. Pechkova, R. Lazzari, J. Proteomics Bioinform 7, 064-070 (2014)

**42) Model-free unraveling of supported nanoparticles plasmon resonance modes**

R. Lazzari, J. Jupille, R. Cavallotti, I. Simonsen, J. Phys. Chem. C 118, 7032–7048 (2014)

**43) Role of surface hydroxyl groups on zinc adsorption characteristics on  $\alpha$ -Al<sub>2</sub>O<sub>3</sub>(0001) surfaces: first-principles study**

R. Cavallotti, J. Goniakowski, R. Lazzari, J. Jupille, A. Koltsov, D. Loison, J. Phys. Chem. C 118, 13578–13589 (2014)

**44) Spectral restoration in reflection energy electron loss spectroscopy based on iterative semi-blind Lucy-Richardson algorithm applied to rutile surfaces**

R. Lazzari, J. Li, J. Jupille, Rev. Sci. Instrum, 86, 013906-013919 (2015)

**45) Charge transfer at hybrid interfaces: plasmonics of aromatic thiol-capped gold nanoparticles**

C. Goldmann, R. Lazzari, X. Paquez, C. Boissière, F. Ribot, C. Sanchez, C. Chanéac, D. Portehault, ACS Nano, 7, 7572-7582 (2015)

**46) New routes for improving adhesion at metal/ $\alpha$ -Al<sub>2</sub>O<sub>3</sub>(0001) interface**

R. Cavallotti, H.-L. Thi Le, J. Goniakowski, R. Lazzari, J. Jupille, A. Koltsov, D. Loison, Phys. Chem. Chem. Phys, 18, 3032-3039 (2016)

**47) Grain growth: the key to understand silver solid-state dewetting**

P. Jacquet, R. Podor, J. Ravoux, J. Teisseire, I. Gozhyk, J. Jupille, R. Lazzari, Scripta. Mater., 115, 128-132 (2016)

**48) Surface and epitaxial stress for supported metal clusters**

R. Lazzari, J. Goniakowski, G. Cabailh, R. Cavallotti, N. Trcera, P. Lagarde, J. Jupille, NanoLetters 16 2574-2579 (2016)

**49) Photoemission fingerprints for structural identification of titanium dioxide surfaces**

P. Borghetti, E. Meriggio, G. Rousse, G. Cabailh, R. Lazzari, J. Jupille, Phys. Chem. Lett. 7, 3223-3228 (2016)

## **Peer-review conference proceedings**

### **1) In situ study of a thin metal film by optical means**

R. Lazzari, J. Jupille, Y. Borensztein, Appl. Surf. Sci. 142, 451-454 (1999)

### **2) Optical response of supported particles**

I. Simonsen, R. Lazzari, J. Jupille, S. Roux, Theoretical-Physics-Seminar-in-Trondheim. 10, 1 (1999)

### **3) On an optical technique for in situ thin film growth studies**

I. Simonsen, R. Lazzari, J. Jupille, S. Roux, Comm. Opt. 1, 48 (2000)

### **4) First study, in situ and in real time, of the morphology of growing nanoparticles by Grazing Incidence Small Angle X-Ray Scattering**

G. Renaud, M. Noblet, A. Barbier, C. Revenant, O. Ulrich, Y. Borensztein, R. Lazzari, J. Jupille, C. Henry, Proceedings of the HERCULES-X Euroconference (2000)

### **5) Silver layers on oxide surfaces: morphology and optical properties**

R. Lazzari, J. Jupille, Surf. Sci. 482-485, 823-828 (2001)

### **6) Chemical reaction via hydroxyl groups at the titanium/ $\alpha$ -Al<sub>2</sub>O<sub>3</sub>(0001) interface**

R. Lazzari, J. Jupille, Surf. Sci., 507-510, 683-887 (2002)

### **7) In situ GISAXS study of the growth of Pd on MgO(100)**

F. Leroy, C. Revenant, G. Renaud, R. Lazzari, Appl. Surf. Sci. 238, 233-237 (2004)

### **8) Growth of Ge on Si(0 0 1) studied in situ by grazing incidence small angle X-ray scattering**

F. Leroy, J. Eymery, D. Buttard, G. Renaud, R. Lazzari, J. Cryst. Growth. 275, e2195-e2200 (2005)

### **9) Growth of Ag on MgO(0 0 1) studied in situ by GISAXS**

C. Revenant, G. Renaud, R. Lazzari, J. Jupille, Nucl. Inst. Meth., B 246, 112-117 (2006)

### **10) Improving the wetting of oxides by metals**

J. Jupille, R. Lazzari, J. Optoelectron. Adv. Mater. 8, 901-908 (2006)

### **11) X-ray diffraction study of thermal stress relaxation in ZnO films deposited by magnetron sputtering**

F. Conchon, P.O. Renault, E. Le Bourhis, C. Krauss, P. Goudeau, E. Barthel, S. Yu. Grachev, E. Sondergard, V. Rondeau, R. Gy, R. Lazzari, J. Jupille, N. Brun, Thin Solid Films 519, 1563-1567 (2010)

### **12) Monitoring silver solid-state dewetting with *in situ* ellipsometry**

P. Jacquet, M. Kildemo, J. Teisseire, I. Gozhyk, J. Jupille, R. Lazzari, Appl. Surf. Sci (2016) accepté

## **Other publications**

### **1) The morphology of growing nanoparticles by Grazing Incidence Small Angle X-Ray Scattering**

G. Renaud, M. Noblet, A. Barbier, C. Revenant, O. Ulrich, Y. Borensztein, R. Lazzari, J. Jupille, C. Henry, ESRF Highlights (1999)

### **2) Watching nanoparticle growth**

R. Lazzari, G. Renaud, F. Leroy, French Society of Physics Bulletin 142, (December 2003-January 2004)

## **Chapters in books**

### **1) Optical properties of surfaces**

Dick Bedeaux, Jan Vlieger, Imperial College Press, 2002 (Figures of the books)

### **2) X-Ray and Neutron Reflectivity : Principles and Applications**

Editors: Jean Daillant and Alain Gibaud, Lectures Notes in Physics, Springer, Vol 770, 2009 (ISBN: 978-3-540-88587-0)

Chapter: Grazing Incidence Small Angle X-Ray Scattering from nanostructures, R. Lazzari, P283-340

## **Softwares**

### **1) GranFilm : optical properties of granular thin films**

R.Lazzari, I Simonsen, <http://ln-www.insp.upmc.fr/axe4/Oxydes/GranFilm/GranularFilm.html>

### **2) IsGISAXS : a program for analyzing Grazing Incidence Small Angle X-Ray Scattering**

R. Lazzari, <http://ln-www.insp.upmc.fr/axe4/Oxydes/IsGISAXS/isgisaxs.htm>



# Conferences / Presentations by R. Lazzari

## Invitations to conferences

**1) Metallic nanoparticle growth on oxide surfaces: a study with optical spectroscopy and grazing incidence small angle X-ray scattering**

Yearly colloquium of Groupe Français de Croissance Cristalline, Toulon, France, March 13-15 2002

**2) Simulation of Grazing Incidence Small Angle X-Ray Scattering from nanostructures**

GISAS 2005 workshop, HASYLAB/DESY, Hamburg, Germany, May 10-12 2005

**3) Watching metallic nanoparticle growth on oxide support: an approach of wetting and reactivity**

Matériaux 2006, Dijon, France, November 16-17 2006

**4) Watching metal nanoparticles grow on oxide surfaces with photon based techniques**

IWOX 5 (International Workshop on Oxide Surfaces), Lake Tahoe, USA, January 7-12 2007

**5) Analyzing Grazing Incidence Small Angle X-Ray Scattering from nanostructures**

GISAS 2007 workshop, HASYLAB/DESY, Hamburg, Germany, May 9-11 2007

**6) Watching metal nanoparticles grow on oxide surfaces with X-ray scattering: The case of the model catalyst Au/TiO<sub>2</sub>(110)**

Workshop France-Japan, Strasbourg, France, October 24-26 2007

**7) Following growth and catalytic reaction of oxide supported metal nanoparticles with GISAXS**

XXI Congress International Union of Crystallography, Osaka, Japan, August 23-31 2008

**8) Looking by GISAXS at growth and catalytic reaction of oxide supported metal nanoparticles**

Material Research Society conference, Boston, USA, December 01-05 2008

**9) Combining GISAXS with in situ techniques to unravel optical and chemical properties of nanoparticles**

GISAS 2009, Satellite Conference of SAS2009, HASYLAB/DESY, Hamburg, Germany, September 20-23 2009

**10) Grazing Incidence Small Angle X-Ray Scattering from nanoparticles on surfaces: from growth to reactivity**

Workshop SAXS-WAXS-GISAXS strategy to study bio/nano materials, Italian Association of Crystallography, Committee of Instrumentation and Computing, Bari, Italy, September 25-26 2012

**11) Watching metal nanoparticles: from nanoplasmonics to reciprocal space**

GDR NanoAlliages, Orléans, France, December 17-20 2012

**12) GISAXS from nanostructures: an overview of *Is*GISAXS potentialities**

GISS 2013, Workshop on Grazing Incidence Scattering Software, Munich, Germany, April 9-10 2013

## Courses to schools

### **1) Grazing Incidence Small Angle Scattering workshop**

Courses on GISAXS and practicals (8h), GISAS 2005, Hasylab/Desy, Hamburg, Germany, May 10-12 2005

### **2) Grazing Incidence Small Angle Scattering workshop**

Courses on GISAXS and practicals (8h), GISAS 2007, Hasylab/Desy, Hamburg, Germany, May 9-11 2007

### **3) 3<sup>rd</sup> French school on reflectivity, SAXS, GISAXS and surface diffraction**

Courses on GISAXS (3h) and practicals (3h), Presqu'île de Giens, France, May 4-8 2008

### **4) GISAXS and inorganic materials**

Courses on GISAXS (1h) and practicals (9h), CNRS permanent training, Grenoble, France, May 21-23 2008

### **5) SOMATAI Marie Curie Initial Training Network (SOft Matter AT Aqueous Interfaces)**

Courses on GISAXS (2h), SOLEIL, Saint-Aubin, France, May 27 2014

### **6) Training school on advanced experimental methods for energy materials characterization, COST action CM1104 "reducible oxide: chemistry, structure and functions"**

Courses on grazing incidence scattering (1.5h), Delmenhorst, Germany, September 8-12 2014

## Communications at international conferences

### **1) In situ study of a thin metal film by optical means**

R. Lazzari, J. Jupille, Y. Borensztein, oral presentation, ICSFS-9 (International Conference on Solid Films and Surfaces), Copenhagen, Denmark, July 6-10 1998

### **2) Morphology study of Ag/MgO(100) thin films by optics**

R. Lazzari, J. Jupille, poster, IVC-14 (International Vacuum Congress), Birmingham, Great Britain, August 31 - September 4 1999

### **3) Silver layers on oxide surfaces : morphology and optical properties**

R. Lazzari, J. Jupille, P. Naël, I. Simonsen, oral and poster presentation, ECOSS-19 (19<sup>th</sup> European Conference on Surface Science), Madrid, Spain, September 5-8 2000

### **4) Does hydroxyl-free $\alpha$ -Al<sub>2</sub>O<sub>3</sub>(0001) surface exist ?**

R. Lazzari, J. Jupille, oral and poster presentation, ECOSS-20 (20<sup>th</sup> European Conference on Surface Science), Krakow, Poland, September 4-7 2001

### **5) Grazing incidence small angle scattering of X-rays : a tool to study the morphology of metal islands on oxide surfaces**

R. Lazzari, G. Renaud, M. Noblet, A. Barbier, O. Ulrich, C. Revenant, F. Leroy, Y. Borensztein, J. Jupille, C. Henry, oral presentation, WS-8 (Workshop on Growth and Behaviour of Metal-Oxide Interfaces), Avila, Spain, July 23-26 2001

**6) Role of the stress in the epitaxy of silver on the basal planes of zinc oxide**

R. Lazzari, S. Djanarthany, D. Abriou, N. Jedrecy, G. Renaud, J. Jupille, oral presentation, AVS-49<sup>th</sup> International Symposium, Denver, USA, November 3-8 2002

**7) Grazing Incidence Small-Angle X-Ray Scattering from nanoparticles: beyond classical analysis approximations**

R. Lazzari, F. Leroy, G. Renaud, J. Jupille, oral presentation, XX Congress of the International Union of Crystallography, Florence, Italy, August 23-31 2005

**8) In situ X-ray scattering evidence for self-similar growth of gold on rutile**

R. Lazzari, F. Leroy, G. Renaud, J. Jupille, oral presentation, ECOS-24 (24<sup>th</sup> European Conference on Surface Science), Paris, France, September 4-8 2006

**9) Looking at growth kinetics of metal nanoparticles with plasmonics: the case of Ag/ $\alpha$ -Al<sub>2</sub>O<sub>3</sub>(0001)**

R. Lazzari, J. Jupille, oral presentation, VIIIth International Workshop on Oxide Surfaces (IWOX VIII, Baqueira, Spain, January 15-20 2012

**10) Disclosing growth kinetics of metal nanoparticles via the plasmonic response: the case of Ag/ $\alpha$ -Al<sub>2</sub>O<sub>3</sub>(0001)**

R. Lazzari, J. Jupille, oral presentation, Material Research Society conference, San Francisco, USA April 09-13 2012

**11) Quantitative analysis of supported nanoparticle growth through plasmonics**

R. Lazzari, I. Simonsen, J. Jupille, oral presentation, OSI 10 Optics of Surface and Interface conference, Chemnitz, Germany, September 08-13 2013

**12) Model-free unravelling of supported nanoparticle plasmon resonance modes: the case of Ag, Au, Zn on Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> and ZnO**

R. Lazzari, J. Jupille, R. Cavallotti, I. Simonsen, oral presentation, ICTF 16 International Conference on Thin Films, Dubrovnik, Croatia, October 13-16 2014

**13) Theoretical approach of diffuse X-ray scattering from density fluctuations close to rough surfaces**

R. Lazzari, poster presentation, GISAS 2015 (Grazing Incidence Small Angle Scattering Workshop), Satellite Conference of SAS2015, Nice, France, September 08-11 2015

**14) Electron energy loss study of excess electrons in reducible TiO<sub>2</sub>: dual behaviour or coexistence of trapped and free states? Bulk or surface defects?**

R. Lazzari, J. Li, J. Jupille, oral presentation, American Vacuum Society International Symposium, Nashville, USA, November 6-11 2016

## **Workshops**

**1) Structure of boron carbide B<sub>4</sub>C and evolution under pressure**

R. Lazzari, N. Vast, J. M. Besson, S. Baroni, poster, Semat'97 (Structure électronique dans les matériaux ; théorie et calculs), Orsay, France, May 29-30 1997

**2) Using Differential Reflectivity Spectroscopy to follow metal/oxide deposition**

R. Lazzari, J. Jupille, D. Martin, poster, Journées Surfaces et Interfaces, Paris, France, January 27-28 1998

**3) Differential Reflectivity Spectroscopy: a tool to study growth - The case of Ag/Al<sub>2</sub>O<sub>3</sub>(0001)**

R. Lazzari, J. Jupille, P. Naël, oral presentation, Groupement de recherche CNRS Métal/Oxyde, Paris, France, November 8-10 1999

**4) Morphological Characterization of supported nanoparticles with optical spectroscopy**

R. Lazzari, J. Jupille, I. Simonsen, G. Renaud, A. Barbier, Y. Borensztein, C. Henry, poster, JMC-7 (7<sup>ème</sup> Journées de la Matière Condensée), Poitiers, France, August 29 –September 1 2000

**5) In situ study of metallic island growth on MgO(100) by GISAXS**

R. Lazzari, G. Renaud, M. Noblet, A. Barbier, O. Ulrich, C. Revenant, F. Leroy, Y. Borensztein, J. Jupille, C. Henry, oral presentation, Groupement de recherche CNRS I3S/Relax, Toulouse, France, September 27-28 2001

**6) In situ X-ray scattering evidence of self-similar growth of gold on rutile**

R. Lazzari, F. Leroy, G. Renaud, J. Jupille, poster, European COST “Inorganic oxide surfaces and interfaces”, Vienna, Austria, November 2-4 2006

**7) Growth on defects and self-similar coalescence of gold particles on TiO<sub>2</sub>(110)**

R. Lazzari, F. Leroy, G. Renaud, J. Jupille, oral presentation, GDR Or-Nano, Paris, France, November 27-28 2006

**8) Defect-pinned nucleation, growth and dynamic coalescence of Ag islands on MgO(001) : a combined view from optical absorption and X-ray scattering**

R. Lazzari, G. Renaud, C. Revenant, J. Jupille, Y. Borensztein, poster, European COST “Inorganic oxide surfaces and interfaces”, Paris, France, October 22-24 2009

**9) Wetting of a polar surface**

W. Srour, B. Baris, R. Lazzari, G. Cabailh, J. Jupille, S. Grachev, Doctoriales OxyMore, Paris, France, September 24 2014

**10) EELS study of excess electrons in reducible TiO<sub>2</sub>: Bulk or surface defects? Dual behaviour or coexistence of trapped and free states?**

J. Li, J. Jupille, R. Lazzari, oral, COST workshop « Reducible Oxide Chemistry, Structure and Functions», Osnabrück, Germany, April 6-8 2016

## **Invited seminars**

**1) IsGISAXS: a program for analysis of Grazing Incidence Small Angle X-Ray Scattering from nanostructures**

ESRF Experiments Division Seminar, Grenoble, France, March 2002

**2) In situ study of nano-objects growth with X-ray diffuse scattering**

LURE seminar, Orsay, France, October 2003

### **3) Watching nanoobjects in reciprocal space**

Inauguration of Institut des NanoSciences de Paris et de l'Institut de Minéralogie et de Physique des Milieux Condensés, Paris, France, March 30 2005

### **4) Beyond the classical GISAXS analysis for nanoobjects: application to self-similar growth of gold aggregates on TiO<sub>2</sub>(110)**

Seminar RS, Grenoble, France, April 11 2006

### **5) Combining GISAXS with *in situ* techniques to unravel optical and chemical properties of nanoparticles**

Physics Department, Norwegian University of Science and Technology, Trondheim, Norway, September 9 2011

### **6) Simulation of Grazing Incidence Small Angle X-Ray Scattering from nanostructures**

Institute of Crystallography, CNR, Bari, Italy, October 25 2011

### **7) Probing silver layer growth by plasmonics and GISAXS**

Workshop on "Silver Nano-objects", Saint-Gobain Recherche, Aubervilliers, France, June 17 2014

### **8) Crystal growth in the light of nanoplasmonics**

Institut des Sciences Moléculaires d'Orsay, Orsay, France, December 9 2014

### **9) Silver layer growth in the light of nanoplasmonics**

Ångström Laboratory, Uppsala University, Sweden, September 17 2015

### **10) Methods to probe silver layer growth / Early stages of silver layer growth**

Scientific days of Service Couches Minces, Saint-Gobain Recherche, Aubervilliers, November 30th - December 1st 2015

## **Long-term stays abroad**

### **1) Leiden Institute of Chemistry, Leiden, Pays-Bas, février 2000**

Invited researcher, collaboration with Prof. Dick Bedeaux on the optical modelling of thin films

### **2) Norwegian University of Science and Technology, Department of physics, September 5-18 2011 and August 15 – September 7 2012**

Collaboration with Prof. Inge Simonsen in the framework of a mobility program Hubert Curien Aurora "Simulation of optical properties of nanoparticles"

### **3) Institute of Crystallography, Bari, Italy, October 20- November 4 2011**

Invited researcher CNR, Collaboration with Dr. Cinzia Giannini on "GISAXS simulation on nanostructured samples"