CURRICULUM VITAE

EUROPEAN FORMAT

PERSONAL INFORMATION

Name, Surname	Alessio Lamperti
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Work Address	Via C. Olivetti, 2 – 20864 Agrate Brianza (MB) - Italy
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Nationality	**Italiana**
Birthplace and birthday	

PROFESSIONAL EXPERIENCE

CNR employee:	**ID N. 11300 – PROFILE RESEARCH ENGINEER (*IN ITALIAN: TECNOLOGO*) – LEVEL III**
From / To	December 2012 / present
Name and address of the employer	National Research Council (CNR) - Institute for Microelectronics and Microsystems (IMM), Agrate Brianza Unit, Via Olivetti 2, 20864, Agrate Brianza (MB), Italy
Sector of Activity	Public Body
Profile	Permanent Research Engineer (*in Italian: Tecnologo*). Technological sector: support to the research. Topic: Management of scientific instrumentation and processes. (*Bando n. 364/114, Prot. AMMCNT CNR n.79896 28/12/2012; Prot. AMMCNT CNR n.8704 13/02/2013; Prot. IMM CNR n.769 31/01/2013*)
Main duties and responsibilities	**Main research topics:** **I** –Anisotropy engineering in 2D-materials (transition metal di-chalcogenides, TMDs): growth by chemical methods and characterization mainly by X-ray photoelectron spectroscopy and Raman spectroscopy; target applications in nanoelectronics, photonics, optoelectronics, catalysis. **II** – structural and chemical-physics characterization of thin films and multilayers for integration as high-capacitor in Bipolar CMOS-DMOS (BCD) technology platform by X-ray scattering, X-ray photoemission spectroscopy and ion beam techniques (XRR, XRD, XPS, ToF-SIMS). **III** – (1) ferromagnetic materials with perpendicular magnetic anisotropy (PMA) and (2) non-magnetic materials for integration as tunnel barrier in magnetic junctions and spin injections/filters; (3) diluted magnetic oxides (DMO). Study on the correlation between structural and chemical properties and magnetic and magneto-transport properties. Structural and chemical-physics characterization of thin films and multilayers by X-ray scattering (synchrotron light included), X-ray photoemission and ion beam techniques (XRR, XRD, XPS, ToF-SIMS, XRMS), such as: (1) ferromagnetic materials (Co, Fe, CoFe, CoFeB, Co/Ni); (2) non-magnetic materials (i.e. MgO, AlO_x); (3) diluted magnetic oxides (Fe, Ni doped ZrO_2). **IV** – Study on the thermal stability in process integration for CMOS compatibility of high permittivity dielectrics or of phase change alloys, for applications as emerging non-volatile memories (TANOS, RRAM, PCM, MRAM) by X-ray scattering, X-ray photoemission and ion beam techniques (XRR, XRD, XPS, ToF-SIMS). **V** – Characterization of piezoelectric materials for integration in advanced MEMS devices by X-ray scattering (mainly XRD).

The research activities are undertaken also as part of the research in the following research projects:

- Ministero Istruzione, Università e Ricerca of Italy, MIUR-PRIN aSTAR “Attosecond transient absorption and reflectivity for the study of exotic materials” (contract 2017RKWTMY) 2019-2022. – **Unit project responsible** (*Prot. CNR-IMM n.0004933/2020 del 11/09/20*).
- ERC CoG XFab “Xene Fabrication for a Two-Dimensional Nanotechnology Platform” (contract 772261) 2018-2023 – **Key investigator.** (*Lettera incarico, Prot. IMM CNR del 30/06/2020*).
- EU-H2020-ECSEL R3POWERUP “300mm Pilot Line for Smart Power and Power Discrete” (contract 737417) 2017-2021 – **Expert for WP1.**
- EU-H2020-FET-PROACTIVE SKYTOP “Skyrmion-Topological insulator and Weyl semimetal technology” (contract 824123) 2018-2022 – **Expert for WP2.**
- Research contract between CNR-IMM and ST-Microelectronics Italy 2014-present (Prot. IMM-CNR n.1192/2017 03/03/2017). – **Key person for activity on piezoelectric materials as actuators (PZT).**

- Ministero Istruzione, Università e Ricerca of Italy, MIUR-PRIN HotPlasMoS2 “Hot-electrons in self-organised plasmonic metasurfaces coupled to semiconducting MoS_2 nanosheets: Photon harvesting in 2D materials” (contract 2015WTW7J3) 2017-2020. – **Unit project responsible.**
- Regione Lombardia, Accordo Quadro Regione Lombardia-CNR, Project: “I-ZEB Verso Edifici Intelligenti a Energia Zero per la crescita della città intelligente” 2017-2019 (Decreto Reg Lombardia n.7884 del 05/08/2016). – **Responsible for activity A 2.2** (*Lettera incarico, Prot. IMM CNR 6041/2017 del 22/11/2017*).
- EU-H2020-ECSEL R2POWER300 “Preparing R2 extension to 300mm for BCD Smart Power” (contract 653933) 2015-2018 – **Unit project responsible; Expert for WP1 & WP3.**
- EU-FP7 MAGWIRE “Magnetic nanowires for High Density Non Volatile Memories” (contract 257707) 2011-2014. **Expert for WP1**.
- MIUR-FIRB “Oxides at the nanoscale: multifunctionality and applications” (contract RBAP115AYN) 2012-2015. **Key investigator for growth and physical characterizations.**
- Fondazione CARIPLO, Progetto OSEA “Oxides for Spin Electronic Applications” (contract 2009-2552) 2010-2013. **Key investigator for the experimental activities.**

Main technology transfer topics

I – Characterization of piezoelectric materials for integration in advanced MEMS devices by X-ray diffraction: from research lab to fab tool measurements on 8” wafer scale. Development, establishment and continuous monitoring of a standard protocol for measure validation for process control in fab (with ST-Microelectronics, Agrate Brianza) 2014-present

II – Characterization of coatings of metal-alloys on metal electrodes for electrochemical applications by X-rays photoelectron spectroscopy (with Industrie De Nora, Milan) 2018-present

Scientific responsible

- 1 post-grad Ph.D. student (*ref. Bando AR IMM011/2020/MB-Prot 0012814*) 11-05-2020 – present. Research topic: Chemical vapour deposition growth and morphological and structural characterization of low-dimension (2D) sulfur and tellurium based dichalcogenides.
- 1 post-grad student (*ref. Bando BS IMM004/2019/MB*) 16-09-2019 – 10-05-2020. Research topic: Chemical vapour deposition growth and morphological and structural characterization of low-dimension (2D) sulfur and tellurium based dichalcogenides.
- 1 post-doc (*ref. Bando 04_2017 ADR ISC RMSAP*) 30-04-2017 – 31-03-2019. Research topic: Growth and characterization of bi-dimensional layers of MoS_2 or similar compuonds grown on patterned substrates: study on anisotropy properties.

Instrumentation responsible

- Time-of-flight Secondary Ion Mass Spectrometer (ToF-SIMS) ION-TOF IV upgraded (15-12-2020 – present) [Advanced independent user] Development and definition of measurements parameters depending on the type of measurement and material under investigation. Static and dynamic mode. Spectroscopy, imaging and depth profiling.
- Ultraviolet-Visible-Near-infrared spectrophotometer (UV-VIS-NIR) Agilent Cary 5000 (01-10-2020 – present) Continuos monitoring of instrument performance; technical maintenance with support from instrument manufacturer; training to users, including PhD and Master students; scheduling of the instrument usage; writing of procedures and guidelines documents as first aid to the users.
- Facility for the synthesis by chemical vapor deposition (CVD) of transition metal dichalcogenides at low dimensionality (2D) on large scale (CVD Planartech) (01-04-2018 – present).

Definition and validation of growth processes, continuos monitoring of instrument performance; technical maintenance with support from instrument manufacturer; training to users, including PhD

and Master students; scheduling of the instrument usage; writing of procedures and guidelines documents as first aid to the users.
- Fourier transformed infrared spectrometer (FTIR) Bruker IFS 66v (01-01-2016 – present).

Continuos monitoring of instrument performance; technical maintenance with support from instrument manufacturer; training to users, including PhD and Master students; scheduling of the instrument usage; writing of procedures and guidelines documents as first aid to the users.
- X-ray photoelectron spectroscopy (XPS) PHI ESCA 5600 (01-12-2012 – present).

Continuos monitoring of instrument performance; technical maintenance with support from instrument manufacturer; training to users, including PhD and Master students (including data collection, treatment and analysis); scheduling of the instrument usage; writing of procedures and guidelines documents as first aid to the users. Performing advanced measurements and data analysis to support research (non-conductive samples, angle resolved XPS).
- Optical Laboratory (visible and UV-Raman and FTIR spectroscopies)

Co-responsibility (with 1 Senior researcher and 1 Researcher) of the lab management.

From / To	February 2020 / present
Name and address of the employer	National Research Council (CNR) - Institute for Microelectronics and Microsystems (IMM), Agrate Brianza Unit, Via Olivetti 2, 20864, Agrate Brianza (MB), Italy
Sector of Activity	Public Body
Profile	Local contact for the Lombardy Region Cluster on Sustainable and Social Communities (SCC) (https://www.clusterscclombardia.it/)
Main duties and responsibilities	Continuous monitoring of calls and actions of interest for the cluster. Participation to different woking tables on the thematics of interest in the cluster.
From / To	July 2009 / present
Name and address of the employer	National Research Council (CNR) - Institute for Microelectronics and Microsystems (IMM), Agrate Brianza Unit, Via Olivetti 2, 20864, Agrate Brianza (MB), Italy
Sector of Activity	Public Body
Profile	Local community contact and questionnaire responsible for QuESTIO and Open Innovation research and innovation platform of Lombardy Region. (Identified via username and password credentials on the Open Innovation web portal: www.openinnovation.regione.lombardia.it/)
Main duties and responsibilities	Continuous monitoring of calls and actions promoted by Research and Innovation Department of Lombardy Region. Annual review and compilation of the CRTT data in the QuESTIO database.
From / To	March 2018 / present
Name and address of the employer	National Research Council (CNR) - Institute for Microelectronics and Microsystems (IMM), Agrate Brianza Unit, Via Olivetti 2, 20864, Agrate Brianza (MB), Italy
Sector of Activity	Public Body
Profile	Local contact (*Referente*) for the technology area "Characterizations" of the IMM Institute. (*Lettere di incarico Direttore IMM, prot. IMM-CNR n. 1191 del 14/03/18, prot. IMM-CNR n. 6072/2020 del 26/10/20*).
Main duties and responsibilities	The main scope of the local contact network of the technological areas is the integration of the instrumentation, processess and facilities of the Institute and to coordinate the stratergies of technological development. Main duties are: survey of the facility/instruments; integration of the net of instruments/facility/technique and tools of analysis; identification of the areas of technological developments (processes, apparatus, techniques of analysis,….); coordination for relevant and key acquisitions; contributing to the scientific planning of the Institute.
From / To	July 2008 / December 2012

Name and address of the employer	National Research Council (CNR) - Institute for Microelectronics and Microsystems (IMM), Agrate Brianza Unit, Via Olivetti 2, 20864, Agrate Brianza (MB), Italy
Sector of Activity	Public Body
Profile	Research Scientist (fixed term contract) (*Prot. AMMCNT CNR n.29776 08/05/2012; Prot. AMMCNT CNR n.45551 13/06/2011; Prot. INFM CNR n.936 29/01/2009; Prot. INFM CNR n.10993 26/06/2008*).
Main duties and responsibilities	Research project: EU-FP7 MAGWIRE (contract 257707) 2011-2014: Structural and chemical-physics characterization of thin films and multilayers of ferromagnetic materials (i.e. Co, Fe, CoFe, CoFeB, Co/Ni) with perpendicular magnetic anisotropy and non-magnetic materials (i.e. MgO, AlO_x) as tunnel barriers mainly by X-ray scattering techniques (synchrotron light included) and ion beam techniques (XRR, XRD, ToF-SIMS, XRMS). Study on the possible correlations between structural and chemical properties and magnetic and magneto-transport properties. Study on the thermal stability in integration processes CMOS compatible. Research project: Ministero Istruzione, Università e Ricerca of Italy, MIUR-FIRB (contract RBIP06YSJJ) 2008-2011. Structural and chemical-physics characterization of thin films and multilayers of oxides, binary and ternary with high permittivity, nitrides and metals for applications and integration in architectures of emerging non volatile memories (SONOS, TANOS) by X-ray scattering techniques (synchrotron light included) and ion beam techniques (XRR, XRD, ToF-SIMS). Research project: EU-FP6 GOSSAMER (contract 214431) 2008-2011. Support to the activities related to the structural and chemical-physics characterization. Research project: Cariplo Foundation SPAM^3 (contract 2008-2363) 2009-2012. Development of a low-cost CVD-ALD apparatus for the synthesis of ferromagnetic thin films and oxides for the integration in a magnetic tunnel junction based on spin torque effect (STT-MTJ). Structural and Functional characterization of the deposited films and of the patterned structures. Support to structural and chemical-physics characterizations. Contribution to the project planning and management.
From / To	June 2007 / July 2008
Name and address of the employer	National Research Council (CNR) - Institute for Microelectronics and Microsystems (IMM), Agrate Brianza Unit, Via Olivetti 2, 20864, Agrate Brianza (MB), Italy. – Prof. M. Fanciulli
Sector of Activity	Public Body
Profile	Post-Doc Fellow (*in Italian: Assegnista di ricerca*) (*Prot. INFM CNR n.6699 15/04/2008*).
Main duties and responsibilities	Research Project: EU-FP6 EMMA (contract 033751) 2006-2009. Structural and physical-chemical characterization on thin films and multilayers of transition metals binary oxides as emerging materials for memory architectures (i.e. resistive switch random access memory ReRAM elements) by X-ray scattering and ion beam techniques (XRR, XRD, ToF-SIMS). Research Project: Cariplo Foundation SOLARIS. Hybrid atomic layer and chemical vapor deposition (ALD/CVD), structural and physical-chemical characterization on thin films and multilayers of ferromagnetic metals/oxides and binary oxides for spintronics (spin valves, magnetic tunnel junctions) by X-ray scattering and ion beam techniques (XRR, XRD, ToF-SIMS).
From / To	May 2005 / June 2007
Name and address of the employer	University of Durham, Department of Physics, Condensed Matter Area, X-Ray and Magnetism Group, DH1 3LE Durham, United Kingdom – Prof. B.K. Tanner
Sector of Activity	Public Research and Educational Body
Profile	EU Marie Curie Post-Doc Fellow
Main duties and responsibilities	Research Project: EU Research Training Network ULTRASMOOTH (contract MRTN-CT-2003-504462). In lab and synchrotron light X-Ray scattering advanced characterization of thin films,

multilayers and heterostructures for spintronics, with emphasis on AlO_x and MgO based magnetic tunnel junctions (eg. CoFeB/MgO/CoFeB).

From / To	October 2006 / January 2007
Name and address of the employer	Ruhr Universität Bochum, Experimental Physics IV – Condensed Matter Physics, D-44780 Bochum, Germany.
Sector of Activity	Public Research and Educational Body
Profile	EU Marie Curie Post-Doc Fellow
Main duties and responsibilities	Research Project: Secondment within the EU Research Training Network ULTRASMOOTH (contract MRTN-CT-2003-504462). X-Ray scattering and Polarised Neutron Reflectivity (PNR) measurements on Fe/Au multilayers and Huesler alloys for spintronics. PNR measurements performed at ADAM instrument, Institut Lauè Langevin, Grenoble, France.

QUALIFICATIONS

2017 – National Scientific Habilitation (*in Italian: Abilitazione Scientifica Nazionale, ASN*) for Experimental Physics of Matter (*Italian classification: SC 02/B1 Fisica sperimentale della materia, Fascia II) – Validità: 12/04/2017 – 12/04/2023 (art.16, comma 1, Legge 240/10).*

2017 – National Scientific Habilitation (*in Italian: Abilitazione Scientifica Nazionale, ASN*) for Foundation of Chemical Sciences and Inorganic Systems (*Italian classification: SC 03/B1 Fondamenti delle Scienze Chimiche e Sistemi Inorganici, Fascia II) – Validità: 05/12/2017 – 05/12/2023 (art.16, comma 1, Legge 240/10).*

2003 – Professional Practice Examination and Engineering Licence - Qualified Engineer (*in Italian: Esame di Stato per l'esercizio della professione di Ingegnere*); Politecnico di Milano (II Session 2002); mark 90/100.

EDUCATION AND TRAINING

From / To	February 2002 / March 2005
Name and type of education or training institution	Politecnico di Milano, Ph.D. (Dottorato di Ricerca) in Radiation Science e Technology. The research activity has been mainly held at the Scanning Ion Lab, The Enrico Fermi Institute, University of Chicago (Chicago, IL, USA) with short visits at the laboratory of chemical-physics analysis at the Istituto Trentino di Cultura (ITC-IRST) [now FBK] in Trento (Italy).
Main subjects and professional skills learned	Ph.D. Thesis on "FIB-SIMS, analytical technique for the study of nanoscale materials". Analysis of nanostructures, thin films and biological tissues by nano-focused secondary ion mass spectrometry (2D surface chemical maps, compositional depth profiles). Analysis of metal-ceramic multilayers of thin films by dynamic SIMS profilometry.
Certificate o degree gained	Ph.D. (Dottorato di Ricerca) in Radiation Science e Technology. Director of the Doctorate School: Prof. M. Marseguerra – Tutor: Prof. C.E. Bottani – Scientific Supervisor: Prof. R. Levi-Setti (University of Chicago), Prof. P.M. Ossi (Politecnico di Milano).
Level of national or international classification	Ph. D., mark Excellent (cum laude) (EQF Lev.8)
List of marked exams	Methods for the Characterization of Materials - Materials of Tomorrow (held at The University of Chicago) - Energetic Beams in Surface Physics and Technology - Applications of Scattering Techniques - Radiation Sources for Medical Applications - Radiation Transport with Montecarlo methods (with Lab) - Safety Analysis of Plants with Montecarlo methods (with Lab).
From / To	September 1990 / December 2001
Name and type of education or	Politecnico di Milano, Faculty of Engineering, Master Degree (Laurea) in Nuclear Engineering

training institution	
Main subjects and professional skills learned	Master Thesis on “Structural and mechanical properties of Diamond Like-Carbon films synthesized by C_2H_2 e CF_4 precursors grown by plasma assisted chemical vapor deposition”.
Certificate o degree gained	Master in Nuclear Engineering (Laurea)
Level of national or international classification	Master Degree, mark: 91/100 (EQF Lev.7).
List of marked exams	Mathematical Analysis I, II, III - General Physics I, II, III - Geometry and Algebra - Technical Physics (Thermodynamics and Heat Transportation) - General Chemistry - Fundamentals of Computer Science I - Rational Mechanics - Structural Mechanics (Science of Constructions) - Theory of Systems - Electrical Engineering (Electrotechnics) - Electronics - Mechanics Applied to Machinery (Machinery and Vibrations) - Machines (Pumps, Turbines and Engines) - Business Economics and Organization - Physics of Nuclear Reactors - Nuclear Measures and Instruments - Nuclear Power Plants I - Radioactivity - Protection and Safety in Nuclear Power Plants - Atomic Physics I e II - Solid State Physics - Chemical Physics of Solid Materials (with Statistical Thermodynamics) - Technology of Nuclear Materials - Metals Science - Materials Science (with Spectroscopy Fundamentals) - Corrosion and Protection of Materials.

TRAINING HIGH-EDU SCHOOLS

2016, May 12 – PoliFab, Workshop on neuromorphic computing systems, Milan, Italy (*Prot. IMM CNR n. 2084 20/04/2016*).

2016, Apr 22 – PoliFab, Workshop on spintronics, Milan, Italy (*Prot. IMM CNR n. 2085 20/04/2016*).

2009, June 15-20 – CNR Management and Results Exploitation in Research Course, Genova, Italy - Course contents: general management, proposal management, research policy, problem solving, public awareness.

2006, July 11-15 – Ultrasmooth Summer School, Durham, United Kingdom - School contents on Spintronics and related materials. Session dedicated to Intellectual property and patenting issues within the framework of EU funded projects.

2006, February 25-March 26 – Higher European Research Course for Users of Large Experimental Systems, HERCULES 2006, Grenoble, France – 1-month school providing training for students, postdoctoral and senior scientists from European and non-European universities and laboratories, in the field of Neutron and Synchrotron Radiation for condensed matter studies (Biology, Chemistry, Physics, Materials Science, Geosciences, Industrial applications). It included lectures, practicals, tutorials, and visits of Large Facilities: ESRF, ILL in Grenoble and ELETTRA in Trieste.
Composition and strain in the near surface region of polished yttria-stabilized tetragonal polycrystalline zirconia. (Poster) - A. Lamperti, B.K. Tanner, H. Wu

2005, September 18-21 – 6th Autumn School on X-ray Scattering from Surfaces and Thin Layers, Smolenice, Slovakia – Tutorials and practicals on X-ray scattering techniques.
Interface sharpening during low temperature annealing of CoFeB TMR electrodes (Oral) - A.T.G. Pym, V. Semencova, A. Lamperti, T.P.A. Hase, B.K. Tanner, J. Wecker, T. Dimopoulos

2004, September 5-11 – Istututo Nazionale Fisica della Materia (INFM) International School on Single Molecule Biophysics, ISI Foundation, Torino, Italy – Lessons on Biophysics topics.
High Resolution Ion Microprobe Imaging of Ions in Biological Tissues. (Poster)
A. Lamperti, P. Galle, K. Gavrilov, J. Li, P.M. Ossi, C.E. Bottani, R. Levi-Setti

TRAINING ON SOFT-SKILLS
(WITH CERTIFICATION)

2021, March 2-3 – webinar (5 hours) – Unità Formazione e Welfare CNR – The european framework Cooperation in Science and technology (COST) (*Il frameowrk europeo Cooperation in Science and Technology (COST)*) – Certificate of frequency with final test (*attestato di frequenza con verifica di apprendimento, Rep. n. 002118/2021*).

2021, March 11 – webinar (1 hour) – Consortium GARR – Open Research Europe: the new platform for publishing from European Commission (*Open Research Europe: la nuova piattaforma di pubblicazione della Commissione Europea*) – Certificate of participation (*attestato di partecipazione*).

2021, February 23 – webinar (1.5 hours) – Unità Formazione e Welfare CNR – Publishing Open Access at CNR (*Pubblicare Open Access al CNR*) – Certificate of frequency with final test (*attestato di frequenza con verifica di apprendimento, Rep. n. 001940/2021*).

2020, December 01-22 – webinar series (50 hours) – Valore P.A. Edition 2019 – Scuola Nazionale dell'Amministrazione (SNA), – La comunicazione efficace. Principali temi affrontati: complessità della comunicazione nei sistemi organizzativi, strumenti di comunicazione interpresonale; la comprensione della diversità e dei modelli del mondo; tecniche dell'ascolto attivo; linguaggio non verbale; comunicazione digitale nelle sue varie piattaforme. (Level II A) – Certificate of frequency (*attestato di frequenza*).

2020, November 19, 20, 24 – webinar (2 hours) – Unità Formazione e Welfare CNR – Protect and enhance CNR research outcomes (*Tutelare e valorizzare i risultati della ricerca CNR*) Certificate of frequency with final test (*attestato di frequenza con verifica di apprendimento, Rep. n. 000690/2020*).

2020, October 15 – webinar (2 hours) – Unità Formazione e Welfare CNR – The behavior code of public employees, 3rd edition (*Il codice di comportamento dei dipendenti pubblici, terza edizione*) – Certificate of frequency with final test (*attestato di frequenza con verifica di apprendimento, Rep. n. 010301/2020*).

2020, October 5, 7, 8 – webinar series (6 hours) – Unità Formazione e Welfare CNR – Towards Horizon Europe: origin and context, missions & partnerships and deepening (*Verso Horizon Europe: genesi e contesto, missions & partnerships e approfondmenti*) – Certificate of frequency with final test (*attestato di frequenza con verifica di apprendimento, Rep. n. 009296/2020*).

2019, February – SPP-CNR and Ufficio Formazione CNR – Training on specific risks for the employers (*Formazione rischi specifici dei lavoratori*) – Certificate of frequency with final test (*attestato di frequenza con verifica di apprendimento, Rep. n. 001053/2019*).

2018, July – CALAM Centro di Formazione Professionale, Lodi (MI) – Training on STEM Teaching Lab - HANDS ON MIND: tecnologie e tecniche di didattica digitale collaborative – Certificate fo frequency (*certificato di frequenza*).

2018, March June – Valore P.A. Edition 2017 – Scuola Internazionale Superiore di Studi Avanzati (SISSA) and Scuola di Formazione e Perfezionamento per la P.A. (EBIT), Milan, Italy – Conflict Management: conoscere le dinamiche di gruppo per una ottimale gestione dei conflitti attraverso la negoziazione e la cooperazione (Level II A) – Certificate of participation with final exam (*attestato di partecipazione e profitto*).

2009, June 15-20 – CNR Management and Results Exploitation in Research Course, Genova, Italy - Course contents: general management, proposal management, research policy, problem solving, public awareness – Certificate of participation (*attestato di partecipazione*).

TEACHING

Lessons at Ph.D. Courses

2018, February October – Methods of Characterization of Materials Course, Doctoral School in Materials Engineering, Milano, Italy - SIMS Fundamentals and Applications.

2014, October – Methods of Characterization of Materials Course, Doctoral School in Materials Engineering, Milano, Italy - SIMS Fundamentals and Applications.

2011, November – Structural and Compositional Analyses Course, Doctoral School in Materials Engineering, Milano, Italy - SIMS Fundamentals and Applications.

2009, October – Structural and Compositional Analyses Course, Doctoral School in Materials Engineering, Milano, Italy - DAFS: Diffraction Anomalous Fine Structure Fundamentals and Applications.

2007, December – Structural and Compositional Analyses Course, Doctoral School in Materials Engineering, Milano, Italy - Spettrometria di massa degli ioni secondary: SIMS and NanoSIMS.

2006, April – Structural and Compositional Analyses Course, Doctoral School in Materials Engineering, Milano, Italy - X-Ray Reflectivity: theory, experiments and simulations.

2005, October – Applications of Scattering Techniques Course, Doctoral School in Radiation

Science and Technology, Milano, Italy - X-Ray Reflectivity: theory, experiments and simulations.

2004, November – Structural and Compositional Analyses Course, Doctoral School in Materials Engineering, Milano, Italy - Basics of Secondary Ion Mass Spectrometry (SIMS): theory and applications.

2004, February – Chemical and Compositional Analyses Course, Doctoral School for Materials Engineering, Milano, Italy - High lateral resolved SIMS.

2002, December – Electronic Spectroscopies and Compositional Analyses Course, Doctoral School for Materials Engineering, Milano, Italy - FIB-SIMS: theory and applications.

Lessons at Master Classes

2007, Jan-Mar – "New Skills in Physics" Laboratory demonstrator to Physics Undergraduate Students at University of Durham, Durham, United Kingdom.

2006, Jan-Mar – "New Skills in Physics" Laboratory demonstrator to Physics Undergraduate Students at University of Durham, Durham, United Kingdom.

2005, Oct – "XRR Theory, experiments and simulations" lecture in the framework of the course "Plasma Physics and Technology" to final year students at Politecnico di Milano, Milan, Italy.

Teaching in Professional High Schools

From 2010: Fixed term contract Teacher (*in Italian: rapporto occasionale*) at ASLAM – Cooperativa Sociale, at Magenta (MI) & S. Macario (VA) locations, Italy, High School of Professional Education, course in Mechanical Operator, Thermohydraulic Operator, course in Technician of Energy Plants, course in Refrigerator Technician (Lombardia Plus), course in Technician of Meccatronics (IFTS).

(*Prot.CNR-IMM n.0006374 del 17/12/2012, Prot.CNR-IMM n.0010530 del 20/12/2013, Repertorio n. INCN 2018 / 67, Repertorio n. INCN 2019 / 425, Repertorio n. INCN 2020 / 33, Repertorio n. INCN 2021 / 216*).

Seminars

2019, July – Politecnico di Milano, Department of Energy, NanoLab Talk Series

Extended MoS_2 monolayer growth using chemical vapor deposition on flat and patterned substrates

2007, January – Experimental Physics IV, Condensed Matter Physics, Bochum, Germany

Interface stability in magnetic heterostructures with oxide interlayers.

2003, January – Istituto Trentino di Cultura – Istituto per la Ricerca Scientifica e Tecnologica, Trento, Italy

FIB-SIMS: "chemical" analysis at nano scale.

Thesis Supervision

2020, July – Master Thesis in Materials Engineering and Nanotechnology, Politecnico di Milano, Milano, Italy (*Supervisor*)

"Study on 2D $MoTe_2$ from mechanical exfoliation and CVD growth"

2019, July – Master Thesis in Materials Engineering and Nanotechnology, Politecnico di Milano, Milano, Italy (*Supervisor*)

"Large area growth of MoS_2 nanosheets by chemical vapor deposition"

2010, April – Master Thesis in Nuclear Engineering, Politecnico di Milano, Milano, Italy (*Correlatore*)

"Sulla struttura di film di Zirconia stabilizzata irraggiati in regime di collisioni inelastiche".

Tutoring

2006-2007, University of Durham, Durham, United Kingdom

Pastoral tutor service to undergraduate students at Grey College, University of Durham.

2000-2002, Politecnico di Milano, Milano, Italy

Supervision, coordination and support of tutor activities to undergraduate students.

1998-2000, Politecnico di Milano, Milano, Italy

Tutor in General Mathematics, Physics and Chemistry to freshman (1st year undergraduate) students.

BOARD MEMBERSHIP

Editorial member of scientific publications

2020, June, Member of the editorial board of MDPI Coatings.

Recruiting exam and evaluation

2020, Member of the board of evaluators (*in Italian Commissione esaminatrice*) related to recruitment Bando N. AR IMM011/2020/MB (*Prot. CNR-AMMCEN n. 0012814 15/02/2020*).

2019, Member of the board of evaluators (*in Italian Commissione esaminatrice*) related to recruitment Bando N. BS IMM004/2019/MB (*Prot. IMM CNR n. 4598 08/08/2019*).

2019, Member of the board of evaluators (*in Italian Commissione esaminatrice*) related to recruitment Bando N. AR IMM013/2019/MB (*Prot. IMM CNR n. 3336 11/06/2019*).

2019, Member of the board of evaluators (*in Italian Commissione esaminatrice*) related to recruitment Bando n. 380.2 IMM RIC (*Prot. IMM CNR n. 167 16/01/2019*).

2018, Substitute Member of the board of evaluators (*in Italian Commissione esaminatrice*) related to recruitment Bando n. 380.1 IMM RIC (*Prot. IMM CNR n. 5928 12/12/2018*).

2018, Substitute member of the board of evaluators (*in Italian Commissione esaminatrice*) related to recruitment Bando n. AR IMM007/2018/MB (*Prot. IMM CNR n. 5832 20/11/2018*)

2017, Member of the board of evaluators (*in Italian Commissione esaminatrice*) related to recruitment Bando n. 04/2017 ADR ISC RMSAP (*Prot. CNR AMMCEN n. 21001 27/03/2017*).

2015, Substitute member of the board of evaluators (*in Italian Commissione esaminatrice*) related to recruitment Bando n. AR IMM002/2015/MB (*Prot. IMM CNR n. 1575 09/03/2015*).

2014, Member of the board of evaluators (*in Italian Commissione esaminatrice*) related to recruitment Bando n. IMM/05/2014/MB (*Prot. IMM CNR n. 7133 22/09/2014*).

2013, Substitute member of the board of evaluators (*in Italian Commissione esaminatrice*) related to recruitment Bando n. IMM/03/2013/MB (*Prot. IMM CNR n. 7656 01/10/2013*).

Technical commissions

2021, Member of the board of evaluators (*in Italian Commissione giudicatrice*) related to negotiation n. CIG: 8777811EC6 (*Prot. IMM CNR n. 6464/2021 27/08/2021*).

2017, Member of the board of evalutaors (*in Italian Commissione giudicatrice*) related to negotiation n. CIG 7251615DFE (*Prot. IMM CNR n. 5558 30/10/2017*).

President of the Board Commission for the Final Examination in Professional High Schools

(*in Italian:* DDIF - Prove di Accertamento finale)

a.f. 2020-2021, Presidente della Commissione Esaminatrice presso Istituto scolastico o formativo CIOFS - CENTRO ITALIANO OPERE FEMMINILI SALESIANE, Via M. Montessori 6, Castellanza (VA), Tel. 0331503107 per i percorsi: 17473 - Tecnico commerciale delle vendite-Vendita assistita; 17476, 19702 - Tecnico dei servizi di impresa-Amministrazione e contabilità; 17480, 19425, 19426, 19650, 19845 - Tecnico dei servizi di sala bar; 19574, 19577, 17290 - Operatore ai servizi di vendita; 17236, 19540 - Operatore amministrativo-segretariale-Informatica gestionale; 17265 - Operatore della ristorazione-Servizi di sala e bar. (*Prot. Reg. Lomb. E1.2021.0161285 del 10/06/2021 10:37 e Repertorio n. INCN 2021 / 1155*).

a.f. 2018-2019, Presidente della Commissione Esaminatrice presso Istituto scolastico o formativo IAL INNOVAZIONE APPRENDIMENTO LAVORO LOMBARDIA S.R.L. IMPRESA SOCIALE, Via C. Marx 1, 21047 Saronno (VA), Tel: 02/252011317, per i percorsi: 2417, 2780, 2767 - Operatore alla riparazione di veicoli a motore Riparazioni parti e sistemi meccanici ed elettromeccanici del veicolo; 307, 2800 - Tecnico riparatore dei veicoli a motore. (*Prot. Reg. Lomb. E1.2019.0239937 28/05/2019 16:04 e Prot. Reg. Lomb. E1.2019.0239978 del 28/05/2019 16:05 e Repertorio n. INCN 2019 / 1667*).

a.f. 2016-2017, Presidente della Commissione Esaminatrice presso Istituto scolastico o formativo FONDAZIONE ENAIP LOMBARDIA, Via Uberti 44, 21100 VARESE (VA), Tel: 0332/802811, (sessione supplettiva) per i percorsi: 166566, 166631 - Operatore grafico - Stampa e allestimento. (*Prot. Reg. Lomb. E1.2017.0371037 del 09/08/2017 12:15*).

a.f. 2016-2017, Presidente della Commissione Esaminatrice presso Istituto scolastico o formativo FONDAZIONE ENAIP LOMBARDIA, Via Uberti 44, 21100 VARESE (VA), Tel: 0332/802811, per i percorsi: 170822, 170828 - Operatore edile; 156763 - Operatore grafico - Stampa e allestimento. (*Prot. Reg. Lomb. E1.2017.0244217 del 24/05/2017 16:33*).

REVIEWING

Project evaluation

2020 – TACR Technology Agency of Czech Republic – Programme KAPPA – Expert Opponent.

2020 – UE-FISCDI Romanian Executive Agency for Higher Education, Research, Development and Innovation Funding – Calls: PN-III-P1-1.1-TE-2019; PN-III-P1-1.1-PD-2019; PN-III-P2-2.1-PED-2019 External Exert Evaluator and Rapporteur.

2017 – NFFA-Trieste Continuous Call - External Independent Reviewer.

2016 – UE-FISCDI Romanian Executive Agency for Higher Education, Research, Development and Innovation Funding – Call: PN-III-P2- 2.1-PED 2016 External Expert Evaluator and Rapporteur.

2016 – COST Call OC-2016-1 External Independent Reviewer and Rapporteur.

2014 – Romanian RDI National Strategy 2014-2020 Domains External Expert Evaluator.

2013 – Romanian PCCA 2013 External Expert Evaluator.

Scientific Reviewer (including peer-review process)

2021 – External reviewer for the Quality Research Evauation (VQR) years 2015-2019 (*in italian: Incarico di revisore esterno per la VQR 2015-2019*) for the National Agency for the Evaluation of Universities and Research Institutes – ANVUR.

From 2003: Scientific Reviewer (peer-review process) for the following publishers/journals:
AIP: Applied Physics Letters, Journal of Applied Physics, APL Materials, Journal of Vacuum Science and Technology A & B, Physical Chemistry Chemical Physics
ACS: Chemistry of Materials, Applied Materials and Interfaces, Crystal Growth and Design, Omega, Journal of Advanced Oxidation Technologies
APS: Physical Review Letters, Physical Review B, Physical Review X, Physical Review Accelerators and Beams, Physical Review Applied
Beilstein: Beilstein Journal of Nanotechnology
ECS: Journal of the Electrochemical Society, ECS Journal of Solid State Science
Elsevier: Applied Surface Science, Surface Coatings and Technology, Thin Solid Films, Microelectronic Engineering, Journal of Alloy and Compounds, Journal of Magnetism and Magnetic Materials, Journal of Crystal Growth, Materials Science and Engineering B, Materials Science in Semiconductor Processing, Journal of Nuclear Materials, Superlattices and Microstructure, Journal of Zhejiang University Science A (Applied Physics & Engineering), International Conference on Metallurgical Coatings and Thin Films
IEEE: IEEE Transactions on Magnetics
MDPI: Applied Sciences, Coatings, Crystals, Electronic Materials, Materials, Nanomaterials, Surfaces
NPG: Asia Materials
RSC: RSC Advances, Journal of Materials Chemistry C, Nanoscale
Springer: Applied Physics B, Friction
Taylor&Francis: Philosophical Magazine
Wiley: Advanced Materials, Physica Status Solidi A, Physica Status Solidi B, Physica Status Solidi Rapid Research Letters, Surface and Interface Analysis

CONFERENCE, SYMPOSIA, WORKSHOP ORGANIZATION

2021 – IMM Institute Congress 2021 (*Congresso di Istituto 2021*), October 25-27, 2021, Sheraton Congress Centre, Aci Castello (CT). Congress Scientific and Organizing Committee member (*Prot. CNR-IMM n.0005480/2021 del 05/07/21*).

2014 – AIV XXII Conference - From Evangelista Torricelli to Andre Geim: conceptual architectures for Ambient, Energy, Healthcare – Symposium: Innovative Materials for Microelectronics and Sensors. Symposium Organizer and Conference Scientific Committee member.

2007 – Workshop on Smoothing and Characterization of Magnetic Films for Advanced Devices, July 4 - 6, 2007, Faculty of Physics and Applied Computer Science, AGH - University of Science and Technology Krakow, Poland. Scientific Program Committee member.

RESEARCH PROJECT PLANNING AND MANAGEMENT

2009 - Contribution to the preparation of the project “Oxides for Spin Electronic Applications” (OSEA) submitted under the CARIPLO Foundation call on Advanced Materials 2009 – Project duration: 30 months – Granted – Starting date 01 April 2010.

2008 - Contribution to the preparation and to the project management of the national project “Spin Polarized Advanced Materials for Magnetic Memories” (SPAM3) submitted under the CARIPLO Foundation call on Advanced Materials 2008 – Project duration: 24 months – Granted – Starting date 01 February 2009.

ADMINISTRATIVE

2013-2015 – Responsible for Procedures (*in Italian Responsabile del Procedimento, RUP*) for the fulfillments required by the Italian Public Authority for the Public Contracts. (Prot. IMM CNR 560 23/01/2013)
10/06/2013 IMM Bologna (Italy) – Formation day on RUP role and responsibilities (Teacher Avv. Vittorio Miniero) (Prot. IMM CNR 4743 10/06/2013).

RESEARCH AT LARGE FACILITIES

Synchrotron light sources

Each of the following proposal has been subjected to peer-review, selection and ranking to be approved and assigned to beamtime.

20/02/2017-23/02/2017 HZB BESSY, UE46_PGM-1/High-Field Diffractometer beamline, Proposal number 16204394-ST/R: Magnetism in Fe doped Zirconia thin films.

09/01/2017-15/01/2017 HZB BESSY, UE46_PGM-1/High-Field Diffractometer beamline, Proposal number 16204394-ST/R: Magnetism in Fe doped Zirconia thin films.

15/10/2013-25/10/2013 ELETTRA, VUV Photoemission Beam line, Proposal number 20130063: Band structure identification in hexagonal silicon nanosheets on MoS_2.

19/09/2013-25/09/2013 ELETTRA, APE Beamline, Proposal number 20130304: Room temperature magnetism of Fe doped Zirconia thin films.

14 Mar 2014-18 Mar 2014 ESRF, Beam line BM-02, Experiment Number MA-2234: Evaluation of crystallographic ordering in atomic layer deposited Al2O3 layers for application in micro electro-mechanical systems.

08/06/2011-13/06/2011 ESRF, Beam line BM-28, Experiment Number SI-2237: X-ray reflectivity measurements to study the interface stability in MgO-based magnetic tunnel junctions upon in-situ annealing.

02/03/2011-07/03/2011 ESRF, Beam line BM-28, Experiment Number MA-1203: Phase identification and quantification in Er-doped HfO_2 and La-doped ZrO_2 thin films by high resolution grazing incidence X-ray diffraction

23/02/2011-28/02/2011 ESRF, Beam line ID-31, Experiment Number MA-1185: Identification of the crystallographic structure of Yttria Fully Stabilized Zirconia after irradiation with GeV Uranium ions.

23/04/2010-27/04/2010 ESRF, Beam line BM-2, Experiment Number MA-1052: Phase identification in pure and rare earths (La, Er) doped ZrO_2 and HfO_2 thin films by high resolution grazing incidence X-ray diffraction.

13/02/2007-19/02/2007 ESRF, Beam line BM-2, Experiment Number 02 02 685: Structural and chemical characterisation at the interfaces in metal/nitride multilayers by Diffraction Anomalous Fine Structure (DAFS).

25/01/2007-30/01/2007 ESRF, Beam line BM-28, Experiment Number SI 1440: Strain dependence in Fe/Cr/Fe at varying temperature and in magnetic field with Grazing Incidence X-ray Diffraction (GIXRD).

28/06/2006-04/07/2006 ESRF, Beam line ID-31, Experiment Number MA 48: Nucleation and annealing kinetics of the monoclinic phase in the near surface region of yttria-stabilzed zirconia.

08/03/2006-13/03/2006 ESRF, Beam line BM-28, Experiment Number SI 1349: Variable Energy Reflectivity from magnetic tunnel junctions.

04/12/2005-11/12/2005 SRS Daresbury, Station 2.3 Experiment Number 44217: X-ray reflectivity under annealing of CoFeB/MgO based magnetic tunnel junctions.

20/09/2005-27/09/2005 SRS Daresbury, Station 2.3 Experiment Number 44215: X-ray reflectivity under annealing of CoFeB/AlOx based magnetic tunnel junctions.

06/07/2005-11/07/2005 ESRF, Beam line ID-31, Experiment Number ME 1153: Strain and the nucleation of the monoclinic phase in the near-surface region of yttria-stablized zirconia.

Neutron sources

16/05/2011-18/05/2011 ILL, Instrument: D17, Experiment Number 5-23-622: Identification of hydrogenated phases at Fe/MgO and Fe_3O_4/MgO thin films by neutron reflectivity.

01/12/2006-11/12/2006 ILL, Instrument: ADAM, Proposal Number 7-09-158: Polarised Neutron Reflectivity of Huesler alloys at varying temperature and in remanent and saturation magnetic fields.

LANGUAGE PROFICIENCY

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
IT	C2	IT	C2	IT	C2	IT	C2	IT	C2
EN	C2	EN	C2	EN	C1	IT	C2	EN	C2
FR	B2	FR	B1	FR	B1	FR	B1	FR	B1
CZ	A1	CZ	A1	CZ	A1	CZ	A1	CZ	A1

According to the Common European Framework of Reference for Languages

Italian: mother tongue

PERSONAL SKILLS

Excellent comunication skills gained at: (i) the professional activity in many international working groups and meetings in Agrate Brianza (MB), Durham (UK), Chicago (USA), Bochum (Germany); (ii) the participation at scientific symposia and conferences and research program meetings at national and international level.

Excellent management and planning skills in the preparation of presentations and in the coordinations of the activities gained at: (i) the professional activity in many international working groups and meetings in Agrate Brianza (MB), Durham (UK), Chicago (USA), Bochum (Germany); (ii) the participation at meeting of European collaborative projects; (iii) the organization and participation at scientific symposia and meetings; (iv) the organization and participation at research program meetings at national and international level.

Ability to work autonomously and responsibility in the techniques for scientific investigations in the fields and topics mentioned above, including the capability to perform instrument manintenance. Knowledge of the good skills of working in a clean room environment.

IT skills: Software programs for simulation, data fitting, data refinement; SRIM (Range of Ion Implantation) - Bede REFS (X-Ray Reflectivity) - MAUD (X-Ray Reflectivity and Diffraction) - Polar (Polarised Neutron Reflectivity) - FullProf (X-Ray Diffraction Retvield refinement). Software programs for data analysis: Indx – Celref – Easyplot –Peakfit - Microcal Origin – Kaleidagraph. OS: DOS, MS-Windows, Linux (Ubuntu); MS-Office, Adobe Illustrator, Adobe Photoshop, Jasc; Paint Shop Pro, ImageJ, OpenShot or equivalents (es. Inkscape, Gimp2). Good knowledge of Networking.

Other skills: Photography (analog and digital), Video editing

PERSONAL INTERESTS

Reading, in particular books on Historical Romance and Essay, Detective Story, Mystery and Fantasy

Sports: watching many sports disciplines, in particular Volleyball, Soccer, Motors, Fencing, Handball. I am active supporter of the female Volleyball team in my city.

Animals: I own a dog and I participate in educational and apprentice dog classes. I am also interested in studies on canine breed origins, character and behavior, in particular of Pyrenean Shepherd breed.

BIBLIOMETRIC IDENTIFIERS

ORCID ID: orcid.org/0000-0003-2061-2963
ResearcherID: B-5637-2015
Scopus Author ID: 56273561100
Google Scholar ID: yncGdt0AAAAJ

BIBLIOMETRIC INDEXES

ISI Web of Science (02 Sep 2021) – Publications: 132 – Citations: 1478 – H-index: 21
Scopus (02 Sep 2021) – Publications: 133 – Citations: 1562 – H-index: 22
Google Scholar (02 Sep 2021) – Articles: 171 – Citations: 2040 – H-index: 25 – i10-index: 61

PUBLICATIONS

See Annex I “List of publications”

CONFERENCE CONTRIBUTIONS

See Annex II “List of conference contributions”

Alessio Lamperti

Dated 02 September 2021 Signed Alessio Lamperti

ITALIAN PRIVACY LAW & GDPR
(UE REG. 2016/679)

Dichiaro che le informazioni riportate nel presente *Curriculum Vitæ* sono esatte e veritiere.
Dichiaro di essere consapevole di quanto comporta l’affermazione della veridictà di quanto sopra rappresentato e di essere a conoscenza delle sanzioni penali di cui all’art.76 del Decreto del Presidente della Repubblica del 28/12/2000, n.445 *“Testo unico delle disposizioni legislative e regolamentari in materia di documentazione amministrativa”* ed in particolare di quanto previsto dall’art.495 del Codice Penale in caso di dichiarazioni mendaci o di false attestazioni.
Quanto sopra viene presentato sotto forma di autocertificazione (dichiarazione sostitutiva di certificazione e dichiarazione sostitutiva di atto di proprietà) ai sensi degli artt.19, 46 e 47 del Decreto del Presidente della Repubblica del 28/12/2000, n.445.
Autorizzo il trattamento dei miei dati personali, ai sensi e per gli effetti dell’art.13 del Decreto Legislativo 30 giugno 2003, n. 196 *“Codice in materia di protezione dei dati personali”*, e dell’art. 13 del GDPR (Regolamento UE 2016/679).

Alessio Lamperti

Dated 02 September 2021 Signed Alessio Lamperti

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ANNEX I – LIST OF PUBLICATIONS (LIFETIME) OF ALESSIO LAMPERTI - UPDATED 02 SEPTEMBER 2021

AUTHOR IDENTIFIERS OF ALESSIO LAMPERTI

ORCID ID: 0000-0003-2061-2963
Google Scholar ID: user =yncGdt0AAAAJ&hl

Researcher ID: B-5637-2015
Scopus Author ID: 56273561100

ARTICLES

INDEXED IN WEB OF SCIENCE/SCOPUS

C. Martella, A. Quadrelli, P.P. Tummala, C. Lenardi, R. Mantovan, **A. Lamperti**, and A. Molle, **Tailoring the phase in nanoscale $MoTe_2$ grown by barrier-assisted chemical vapor deposition**, Crystal Growth & Design **21**(5) 2970-2976 (2021), American Chemical Society, 1155 16th Street, NW, Washington, DC 20036 USA, ISSN 1528-7483, 30 March 2021, doi: 10.1021/acs.cgd.1c00130

A. Bosio, A. Parisini; **A. Lamperti**; C. Borrelli; L. Fornasini; M. Bosi; I. Cora; Z. Fogarassy; B. Pecz; Z. Zolnai; A. Nemeth; S. Vantaggio; R. Fornari, **n-Type doping of ε-Ga_2O_3 epilayers by high-temperature tin diffusion**, Acta Materialia **210** 116848 (2021), Pergamon-Elsevier Science LTD, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England, ISSN 1359-6454, 23 March 2021, doi : 10.1016/j.actamat.2021.116848

M. Bhatnagar, M. Gardella, M.C. Giordano, D. Chowdhury, C. Mennucci, A. Mazzanti, G. Della Valle, C. Martella, P. Tummala, **A. Lamperti**, A. Molle, F. Buatier de Mongeot, **Broadband and tunable light harvesting in Nanorippled MoS_2 ultra-thin films**, ACS Applied Materials & Interfaces (accepted), Wiley, 111 River Street, Hoboken 07030-5774, NJ USA, ISSN 2196-7350, 09 March 2021, doi:.10.1021/acsami.0c20387

C. Mennucci, A. Mazzanti, C. Martella, **A. Lamperti**, M. Bhatnagar, R. Lo Savio, L. Repetto, A. Camellini, M. Zavelani-Rossi, A. Molle, F. Buatier de Mongeot, G. Della Valle, **Geometrical engineering of giant optical dichroism in rippled MoS_2 nanosheets**, Advanced Optical Materials **9** 2001408 (2021), Wiley VCH Verlag GmbH, Postfach 101161, 69451 Weinheim, Germany, ISSN 2195-1071, 18 November 2020, doi: 10.1002/adom.202001408

R. Cecchini, C. Martella, C. Wiemer, **A. Lamperti**, A. Debernardi, L. Nasi, L. Lazzarini, A. Molle, and M. Longo, **Vapor phase epitaxial of antimonene-like nanocrystals on germanium by an MOCVD process**, Applied Surface Science **535** 147729 (2021), Elsevier Science BV, PO Box 211, 1000 AE Amsterdam, The Netherlands, ISSN 0169-4332, eISSN 1873-5584, 03 September 2020, doi:.10.1016/j.apsusc.2020.147729

A. Molle, G. Faraone, **A. Lamperti**, D. Chiappe, E. Cinquanta, C. Martella, E. Bonera, E. Scalise, and C. Grazianetti, **Stability and universal encapsulation of epitaxial Xenes**, Faraday Discussions **227** 171-183 (2021), Royal Soc. Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, Cambs, England, ISSN 1359-6640, eISSN 1364-5498, 30 December 2019 (online), doi: 10.1039/C9FD00121B

M.Bhatnagar, M.C.Giordano, C.Mennucci, D.Chowdhury, A.Mazzanti, G.Della Valle, C.Martella, P.Tummala, **A.Lamperti**, A.Molle, and F.Buatier de Mongeot, **Ultra-broadband photon harvesting in large-area few-layer MoS_2 nanostripe gratings**, Nanoscale **12** 24385-24393 (2020), Royal Society of Chemistry, Thomas Gtaham House, Science Park, Milton Raod, Cambridge CB4 0WF, Cambs, England, ISSN 2040-3364, eISSN 2040-3372, 20 November 2020, doi:10.1039/d0nr06744j

A. Camellini, A. Mazzanti, C: Martella, **A. Lamperti**, A. Molle, F. Buatier de Mongeot, G. Della Valle, M. Zavelani-Rossi, **Evidence of Plasmon Enhanced Charge Transfer in Large-Area Hybrid Au-MoS_2 Metasurface**, Advanced Optical Materials **8** 2000653 (2020), Wiley VCH Verlag GmbH, Postfach 101161, 69451 Weinheim, Germany, ISSN 2195-1071, 10 October 2020, doi: 10.1002/adom.202000653

C. Martella, E. Kozma, P.P. Tummala, G. Scavia, U. Giovanella, L.G. Nobili, **A. Lamperti** and A. Molle, **Changing the electronic polarizability of monolayer MoS_2 by perylene-based seeding promoters**, Advanced Materials Interfaces **7** 2000791 (2020), Wiley, 111 River Street, Hoboken 07030-5774, NJ USA, ISSN 2196-7350, 23 August 2020, doi: 10.1002/admi.202000791

E. Longo, C. Wiemer, R. Cecchini, M. Longo, **A. Lamperti**, A. Khanas, A. Zenkevich, M. Cantoni, C. Rinaldi, M. Fanciulli and R. Mantovan, **Fe/Sb_2Te_3 interface reconstrcution through Mild Thermal Annealing**, Advanced Materials Interfaces **7** 2000905 (2020), Wiley, 111 River Street, Hoboken 07/030-5774, NJ USA, ISSN 2196-7350, 23 August 2020, doi: 10.1002/admi.202000905

P. Tummala, **A. Lamperti**, M. Alia, E. Kozma, L.G. Nobili, A. Molle, **Application oriented growth of Molybdenum disulfide (MoS_2) single layer by means of parametrically optimized chemical vapor deposition**, Materials **13** 2786 (2020), MDPI, St Alban-Anlage 66, CH-4052, Basel, Switzerland, 18 June 2020, ISSN 1996-1944, doi: 10.3390/ma13122786

M. Rimoldi, R. Cecchini, C. Wiemer, A. Lamperti, E. Longo, L. Nasi, L. Lazzarini, R. Mantovan, M. Longo, **Epitaxial and large area Sb_2Te_3 thin films on silicon by MOCVD**, RSC Advances **10** 19936-19942 (2020), Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, Cambs, England, 18 May 2020, ISSN 2046-2069, doi:10.1039/d0ra02567d/

R. Ciprian, **A. Lamperti**, L. Capasso, E. Cianci, E. Weschke, A. Debernardi, **Magnetic behavior of Fe-doped zirconia studied by synchrotron radiation measurements and first-principles simulations**, Physical Review Materials **4** 054417 (2020) American Physical Society, One Physics Ellipse, College PK, MD 20740-3844 USA, 21 April 2020, ISSN: 2475-9953, doi:10.1103/PhysRevMaterials.00.004400

P. Lagonegro, C. Martella, B.M. Squeo, F. Carulli, G. Scavia, **A. Lamperti**, F. Galeotti, B. Dubertret, M. Pasini, S. Brovelli, A. Molle, U. Giovanella, **Prolonged lifetime in nanocrystal light-emitting diodes incorporating MoS_2-based conjugated polyelectrolyte interfacial layer as alternative to PEDOT:PSS**, ACS Applied Electronic Materials **2**(5) 1186-1192 (2020), American Chemcial Society, 1155 16TH ST, NW, Washington, DC 20036 USA, 21 April 2020, ISSN: 2637-6113, doi: 10.1021/acsaelm.0c00097

F. Motti, C. Martella, S. Vangelista, **A. Lamperti**, M. Cantoni, A. Molle, and R. Mantovan, **Growth of 2D-molybdenum disulfide on top of magnetite and iron by chemical methods**, Thin Solid Films **701** 137943 (2020), Elsevier Science SA, PO Box 564, 1001 Lausanne, Switzerland, ISSN: 0040-6090, 13 March 2020 (online), doi: 10.1016/j.tsf.2020.137943

R. Cecchini, C. Martella, **A. Lamperti**, S. Brivio, F. Rossi, L. Lazzarini, E. Varesi, M. Longo, **Fabrication of ordered Sb-Te and In-(Ge-)Te nanostructures by selective MOCVD,** Journal of Physics D: Applied Physics **53** 144002 (2020), IOP Publishing LTD, Temple Circus, Temple Way, Bristol BS1 6BE, England, ISSN 0022-3727, eISSN 1361-6463, 23 January 2020, doi: 10.1088/1361-6463/ab5d6e

L. Strambini; A. Paghi; S. Mariani; A. Sood; J. Kalliomaki; P. Jarvinen; F. Toia; M. Scurati; M. Morelli; **A. Lamperti**; G. Barillaro, **Three-dimensional silicon-integrated capacitor with unprecedented areal capacitance for on-chip energy storage** , Nano Energy **68** 104281 (2020), Elsevier, Radarweg 29, 1043 NX Amsterdam, The Netherlands, ISSN 2211-2855, eISSN 2211-3282, 13 November 2019 (online), doi: 10.1016/j.nanoen.2019.104281

L. Herrera Diez, Y.T. Liu, D. A. Gilbert, M. Belmeguenai, J. Vogel, S. Pizzini, E. Martinez, **A.Lamperti**, J. B. Mohammedi, A. Laborieux, Y. Roussigné, A. J. Grutter, E. Arenholtz, P. Quarterman, B. Maranville, S. Ono, M. Salah El Hadri, R. Tolley, E. Fullerton, L. Sanchez-Tejerina, A. Stashkevich, S.M. Chérif, A. D. Kent, D. Querlioz, J. Langer, B. Ocker, and D. Ravelosona, **Nonvolatile ionic modification of the Dzyaloshinskii-Moriya interaction**, Physical Review Applied **12** 034005 (2019), American Physical Society, One Physics Ellipse, College PK, MD 20740-3844 USA, ISSN 2331-7019, 04 September 2019, doi: 10.1103/PhysRevApplied.12.034005

R. Cecchini, R. S. R. Gajjela, C. Martella, C. Wiemer, **A. Lamperti**, L. Nasi, L. Lazzarini, L.G. Nobili and M. Longo, **High-density Sb$_2$Te$_3$ nanopillars arrays by templated, bottom-up MOCVD growth**, Small **15** 1901743 (2019), Wiley-VCH Verlag GmbH, Postfach 101161, 69451 Weinheim, Germany, ISSN 1613-6810, eISSN 1613-6829, 21 June 2019 (online), doi: 10.1002/smll.201901743

C. Martella, E. Cianci, **A. Lamperti**, L. Ortolani, V. Morandi, A. Molle, **Large-area patterning of substrate-conformal MoS$_2$ nano-trenches**, Nano Research **12**(8) 1851-1854 (2019), Tsinghua Univ. Press and Springer-Verlag GmbH Germany, part of Springer Nature 2019, B605D, Xue Yan Building, Beijing, 100084, Peoples Republic of China, ISSN 1998-0124, eISSN 1998-0000, 04 June 2019, doi: 10.1007/s12274-019-2446-0

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S. Spiga, G. Congedo, U. Russo, **A. Lamperti**, O. Salicio F. Driussi, E. Vianello**, Experimental and simulation study of the program efficiency of HfO_2 based charge trapping memories**, IEEE Technical Proceedings - Solid-State Device Research Conference (ESSDERC), 2010 Proceedings of the European ESSDERC 2010, 408-411 (2010), IEEE Sevilla Spain, ISSN: 1930-8876, 1 November 2010, doi: 10.1109/ESSDERC.2010.5618194

P.M. Ossi, A. Lamperti, **Predicting Structural Stability of Ion Bombarded Thin Films**, Atti del XVII Congresso Associazione Italiana del Vuoto (AIV 28 June-2 July 2004, Venice) 269-276 (2004), Editrice Compositori, Bologna, ISBN 88-7794-495-1

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D. H. Douma, L. T. Poaty, **A. Lamperti**, S. Kenmoe, A. Debernardi, B. M'Passi Mabiala, **Theoretical insights into nickel oxidation states through X-ray Absorption Near Edge Structure (XANES) at the O K-edge in nickel doped zirconia (ZrO_2:Ni)** (under preparation).

A. Lamperti, C. Martella, P. Tummala, A. Molle, **Phase Kinetics of the $MoTe_2$ nucleation through chemical vapour deposition from solid precursors**, (under preparation).

G. Tallarida, S. Spiga, L. Gelmi, A. Corna, **A. Lamperti**, M. Fanciulli, **$AlHfO_2$-based capacitive transducers for neuroelectronics**, (under preparation).

ANNEX II – LIST OF CONFERENCE CONTRIBUTIONS
(LIFETIME) OF ALESSIO LAMPERTI UPDATED 03 SEPTEMBER 2019

NOTA BENE: PER TUTTE LE PARTECIPAZIONI ANTERIORI AL GIUGNO 2016 IL PROTOCOLLO DI AUTORIZZAZIONE ALLA MISSIONE NON E' INDICATO PER OGGETTIVA DIFFICOLTA' NEL REPERIRE LA DOCUMENTAZIONE ARCHIVIATA PRESSO LA SEGRETERIA AMMINISTRATIVA DELL'IMM. LA DOCUMENTAZIONE RELATIVA POTRA' ESSERE ESIBITA SU RICHIESTA.

INVITED

2017, September 26-29 – Symposium on “2D materials and low-dimensional systems” - NanoInnovation 2017 Conference and Exhibition, Roma, Italy - **Revealing anisotropy in MoS_2 nanosheets grown on self-organized nanopatterned substrates**. (Prot. IMM CNR n. 4816 20/09/2017)

2009, November 17-19 – Convegno “Le tecnologie del vuoto per un futuro responsabile nei confronti dell’ambiente” – Vacuum and Technology Exhibition (VTE 2009), Rho Milano Fiera, Italy - **La spettrometria di massa di ioni secondari nell’analisi chimica di strutture biologiche**.

ORAL

2017 September 18-21 – Symposium on “Synchrotron radiation and atomic layer deposition for advanced materials” - European Material Research Society fall meeting E-MRS 2017, Warsaw, Poland - **CeO_2 thin films deposited by ALD on Si or TiN: can the initial growth steps explain the crystalline orientation?**. (Prot. IMM CNR n. 3679 28/06/2017)

2017 September 18-21 – Symposium on “Basic research on ionic-covalent materials for nuclear applications” - European Material Research Society fall meeting E-MRS 20107, Warsaw, Poland - **Response of crystalline thin films of Yttria Fully Stabilized Zirconia exposed to GeV Uranium ions**. (Prot. IMM CNR n. 3679 28/06/2017)

2016 December 12-16 – Materials.it 2016 Conference, Aci Castello (CT), Italy - **Synthesis of MoS_2 nanosheets from molybdenum oxide film precursors**. (Prot. IMM CNR n. 5164 03/11/2016)

2016 June 12-16 – Workshop on the Study of ALD by Synchrotron Radiation, Cerdanyola ALBA, Spain - **Experimental and ab-inito XANES and XMCD of Fe doped ZrO_2 grown by ALD**. (Prot. IMM CNR n. 2041 19/04/2016)

2014 June 15-19 – CIMTEC 2014 - **Atomic Layer- and Chemical Vapor- deposition of Multiferroic Er-Fe-O Thin Films**.

2013 November 4-8 – 58th MMM Conference, Denver (CO), USA - **Control of perpendicular magnetic anisotropy in Ta/CoFeB/MgO/Ta ultra-thin films by using He ion induced interface intermixing**.

2012 May 14-18 – European Material Research Society spring meeting E-MRS 2012, Strasbourg, France - **Magnetic anisotropy and crystallinity of CoFeB/MgO sracks grown upon different buffer layers**.

2011 September 18-26 – XXVIII SIMS Conference, Riva del Garda (TN), Italy - **Thermal stability fo high-k oxides on SiO_2/Si or Si_3N_4/SiO_2/Si for charge trapping non volatile memories**.

2010, June 28-30 – 16th workshop on Dielectrics in Microelectronics WoDiM 2010, Bratislava, Slovakia - **Synthesis and characterization of DyScO films deposited on Si and Si-rich SiN by atomic layer deposition for blocking layer replacement in TANOS stack**.

2010, June 7-11 – European Material Research Society spring meeting E-MRS 2010, Strasbourg, France - **Role and nature of the passivation layer in Gd_2O_3/GeO_2/Ge stacks grown by molecular beam deposition depending on the oxidizing precursor**.

2008, May 26-30 – European Material Research Society spring meeting E-MRS 2008, Strasbourg, France - **X-ray and ToF-SIMS comparison of resistive switching NiO films obtained from controlled Ni thermal oxidation, e-beam and ALD**.

2007, July 4-6 – Workshop on Smoothing and Characterization of Magnetic Films for Advanced Devices, Faculty of Physics and Applied Computer Science AGH, University of Science and Technology, Krakow, Poland - **Ultrasmooth Fe/Au multilayers**.

2006, September 19-22 – XTOP 2006, Baden-Baden, Germany - **Interface stability of magnetic tunnel barriers and electrodes**.

2004, March 14-18 – The Minerals, Metals and Materials annual meeting TMS 2004, Charlotte, NC, USA - Surfaces and Interfaces in Nanostructured Materials Symposium - **XRD, HRTEM and FIB-SIMS study of Interfaces in TiN/Cu Multilayered Thin Films**.

2003, September 14-19 – Secondary Ion Mass Spectrometry conference SIMS XIV, San Diego, CA, USA - **SIMS analyses on Co:ns-C thin films** -STUDENT TRAVEL AWARD WINNER

2003, June 10-13 – European Material Research Society spring meeting E-MRS 2003, Strasbourg, France - **FIB-SIMS analyses on nanostructured thin films**. - STUDENT AWARD WINNER

2003, March 2-6 – The Minerals, Metals and Materials annual meeting TMS 2003, San Diego, CA, USA - **Modeling structural metastability of irradiated thin films**.

POSTER

2019, May 26-31 – European Material Research Society spring meeting E-MRS 2019, Nice, France - **MoS_2 nanoshhets grown by CVD methods**. (Ord. Miss. IMM CNR n. 21/19 28/01/2019)

2018 March 18-21 – Materials for Advanced Metallization 2018, Milano, Italy - **Evaluation of structural and chemical properties of La_2O_3/CeO_2 stacks by atomic layer deposition under in-situ annealing**. (Ord. Miss. IMM CNR n. 52/18 09/03/2018)

2016 May 2-6 – European Material Research Society spring meeting E-MRS 2016, Lille, France - **Induced effective n-doping at Si/MoS_2 heterosheet interface**.

2013 November 4-8 – 58th MMM Conference, Denver (CO), USA - **XRR, HRTEM and ToF-SIMS characterization of thin Ta/CoFeB/MgO/Ta stacks with PMA**.

2012 May 14-18 – European Material Research Society spring meeting E-MRS 2012, Strasbourg, France - **Fe doped Zirconia as dilute ferromagnetic oxide: atomic layer deposition, characterization and ab-initio data**.

2011 October 30 - November 4 – 56th MMM Conference, Scottsdale (AZ), USA - **Iron doped Zirconia as Diluite Magnetic Semiconductor**.

2010 September 20-23 –10th Biennial Conference on High Resolution X-Ray Diffraction and Imaging XTOP 2010, Warwick (UK) - **Crystalline phase and permittivity changes in ZrO_2 thin films deposited using H_2O or O_3 by ALD**.

2008, September 3-5 – Spin Momentum Transfer Workshop, Krakow, Poland - **Thin films and multilayers for spintronics deposited by a CVD-ALD process**.

2008, May 26-30 – European Material Research Society spring meeting E-MRS 2008, Strasbourg, France - **Study of the interfaces in resistive switching NiO thin films coupled with different electrodes (Si, Ni, Pt, W) deposited by ALD and e-beam**.

2006, September 16-18 – SIMS EUROPE 2006, Münster, Germany

2006, April 5-7 – Physics in low dimensions: Structure meets Magnetism, Rühr Universität Bochum, Bochum, Germany - **Interface stability in CoFe and CoFeB based multilayers**.

2003, November 9-12 – Material Science & Technology conference MS&T 2003, Chicago, IL, USA

2002, September 15-20 - International Conference on Thin Films 12, Bratislava, Slovakia - **Structure and mechanical properties of PACVD fluorinated amorphous carbon films**.

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Autorizzo il trattamento dei miei dati personali, ai sensi e per gli effetti dell’art.13 del Decreto Legislativo 30 giugno 2003, n. 196 “Codice in materia di protezione dei dati personali”, e dell’art. 13 del GDPR (Regolamento UE 2016/679).