UNIVERSITÀ DEGLI STUDI DELL'AQUILA
Prof. Luca Ottaviano
Curriculum scientifico

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Luca Ottaviano

RESUME

ORCID ID: 0000-0001-5133-7541

ORCID QR CODE

Thomson Reuters ResearcherID: P-3335-2015

Personal details:

Born: L?Aquila (IT) February 24th 1967

Home address: Via della Vetriera 11 67100 L?Aquila ITALY

Mobile Phone: +39 338 7267089

Email: luca.ottaviano@aquila.infn.it

Work address: Dipartimento di Scienze Fisiche e Chimiche Università dell?Aquila Via Vetoio 10 67100 L?Aquila (Italy)

Phone: +39 0862 433035

Fax: +39 0862 433033

Short BIO (facts & figures)

Associate Professor in condensed matter experimental Physics. PhD in Physics 1996. Experimentalist with a broad cultural background in condensed matter physics. 128 ISI indexed papers, 36 as first author, 34 as senior author, H=26 (source ISI&SCOPUS merged). 33 invited talks and seminars. Supervisor of dozens of students. Chair of international workshops and conferences. Permanent member of several national and International Review Panels. Reviewer of the topmost ranked Scientific Journals. Fields of interest: surface and nanophysics with multidisciplinary contaminations. Current interest: graphene and 2D materials. Systems investigated in the past: 2D metals on Silicon, Organic semiconductor thin films, Diluted Magnetic Semiconductors. Personality features: Innovative yet pragmatic, persuasive, focused, confident, resilient. Excellent language skills.

Professional Experience:

- Since September 2002: Permanent position as researcher at the Department of Physical and Chemical Sciences (DSFC) University of L?Aquila.
- 1998-2002: INFM (National Institute for Condensed matter Physics) Research Scientist.
- 1997-1998: Service Engineer at Physical Electronics (Minneapolis MN-USA).

Research Associations:

- Since 2010 CNR research associate Institute SPIN (Unit of L?Aquila).
- Former INFN research associate LNGS (National Lab Gran Sasso).

Educational background:

- (1997) PhD in Cond. Matt. Physics at Università di Perugia & L'Aquila (Italy).
- (1992) Degree in Physics ***Summa cum Laude*** at Università dell'Aquila (Italy).
- (1985) High School diploma (Maturità Scientifica) with full marks (**60/60**).

Foreign Languages (CEFR level):

English (C2), French (B2), Spanish (B1), Polish (A2), German (A2).

Scholarly and Creative activitites (H index 26, more than 1900 citations, 40 first author papers, 37 senior author papers):

- Book Edited **1**
- Book Chapters **3**
- Guest Editor Conference Proceedings Issue **1**
- Refereed Journal articles (DOI Indexed) **86**
- Refereed Conference proceedings (DOI Indexed) **42**
- Invited talks **15**, Invited Seminars **19**, Oral presentations **21** & Posters **9 (**see the attached list).

Research Interests (present):

Graphene fundamental properties, and graphene oxide for sensing applications. Molybdenite. Biological applications and interfaces with 2D materials.

Research projects:

Led as coordinator

- INFN XILOPHON (2009-2010). National coordinator Total budget 50 k?
- COFIN 2004 (prot. MIUR N.1864 del 10.11.2004), Italian Minister of research. Local coordinator, total budget 80 k?

Others

- progetto MURST del 4-11-99 "MetalloMacrocicli ad alta delocalizzazione elettronica come materiali molecolari: sintesi, struttura, proprietà fisiche"
- COST ACTION MP0901 "Designing novel Materials for Nanodevices? Chair C. Bittencourt (Univ. Mons BE).
- COST ACTION MP0601 "Short Wavelength laboratory Sources" Chair prof. A.
- Michette (King's College London, UK).

Research stays off-campus (as visiting scientist):

- National Physical Laboratory (TEDDINGTON LONDON UK) 04/2009 05/2009.
- National Physical Laboratory (TEDDINGTON LONDON UK) 04/2008 06/2006.
- Physics Department University Knoxville Tennessee (USA) 09/1999 12/1999.
- CERN 9/1991-12-1991 Undergraduate staff member of ICARUS collaboration.

Professional service off-campus:

Reviewer and Evaluator:

- Expert evaluator of the Eurostars proposals
- Expert Evaluator of the Swiss National Foundation ("Science and Technology Co-operation Programme Switzerland-Russia" 2015)
- Expert Evaluator of the Danish Council for Independent Research (DFF-Mobilex grant 2015)
- Horizon Expert evaluator (Action FET) call of September 2015.
- Horizon Expert evaluator (Action MSCA IF-2014) call of September 2014.
- Horizon Expert evaluator (Action MSCA IF-2014) call of September 2014.
- European Science Foundation member of the panel of reviewers of the Graphene Call (Competitive Call for Consortium Extension) april 2014.
- Appointed EUREKA technical expert (Eurostars Programme).
- FP7 expert evaluator (11 Calls in the area People, 3 Calls in the area Capacities).
- Expert evaluator for MIUR (Italian Ministry of Education) VQR 2004-2010 Area Gev 02.
- Expert evaluator of the SOMOPRO Programme (South Moravian Region of the Czech Republic).
- Evaluator of post-doc projects for RBUCE (Consortium of Universities in Paris).
- Panel Member of Expert evaluators (section surface science and catalysis) for proposals at Elettra (Synchrotron Trieste IT).
- 2012-2013 Reviewer and member of the PhD in Physics *viva* committee (Univ. of Naples, Bologna, Torino (IT)).
- 2014 Reviewer and member of the PhD in Physics *viva* committee (Politecnico di Torino (IT)).

- Book Proposal Reviewer for World Scientific Publisher.
- Member of the Editorial Board: Condensed Matter Physics, of the ?Scientific World Journal? IF 1.7, Hindawi Publisher.
- Reviewer of Nature Communications, Physical Review Letters, Nanoscale, Scientific Reports, Carbon, Physical Review B, Physica Review Applied, Applied Physics Letters, Journal of Applied Physics, Journal of Physics Condensed Matter, Surface Science, Thin Solid Films, J. Physics D, Nanotechnology, JPCC.
- Guest Editor for Thin Solid Films (proceedings of the FNMA09 conference).

Conferences Chairs, organization, and member of the Scientific Committee:

- Member of the scientific Committee of CIMTEC 2016 Montecatini (IT) Symposyum F (on Graphene).
- Hybrid nanomaterials for functional applications, Nanotech France 2016 /European Graphene Forum 2016 Joint events. member of the International Scientific Committee.
- Founder of the GraphX Conferences series on Graphene (GraphITA 2015, GrapHEL 2012, and GraphESP 2014, GraphITA 2011).
- Member of the Scientific Committee of the COST action MP901 ?NanoTP?
- Member of the Scientific Committee of GraphEsp2014 Lanzarote (ES), Third conference of the GraphX series.
- Member of the Scientific Committee of GraphHEL Mikonos (GR), Second conference of the GraphX series.
- Member of the scientific Committee of CIMTEC 2012 Montecatini (IT) Focused Session A-13 (on Graphene).
- Inventor, Chair, and organizer of GraphITA (May 15-18 2011 L?Aquila (IT)). Opening Lecture **Sir. K. Novoselov Nobel Prize** in Physics 2010.
- Chair and Organizer of the FNMA09 conference (27-20 September 2009 Sulmona (IT))
- SGS2004, SGS2002, and SGS2000 International Seminar on Semiconductor Gas Sensors Ustron (PL) member of the international advisory board.

Professional service on-campus:

Service:

- 2015 Co-founder of the Association ?Alumni?
- 2015 Member of the University Board for Outreach Initiatives to schools.
- 2015, Member of the Board of Directors of the University Publisher ?L? Una?
- 2014-2015 Chair of the organizing committee for the University of L?Aquila of ?Sharper? European Project HORIZON 2020 MCSA ?researcher?s Night?
- Since 2003 ERASMUS Departmental Coordinator. In charge with several International Bilateral Agreements. ERASMUS Mundus departmental contact for the Programmes Phoenix, GATE, and TOSCA.

Research:

In Charge of the XIL laboratory for interference Lithography (200 m^2) , and for the Scanning Probe systems of the department.

Teaching:

- Since 2013 Member of the teaching body of the PhD course in Physics.
- Since 2003 Professor in Physics of the Nanostructures (Second Level degree in Physics).
- 2011-2012 Member of the scientific committee and of the teaching body of the 2nd level master degree in ?intellectual property and technology transfer?.
- 2003-2009 training classes in the course of ?Meccanica dei Sistemi? (Diploma in Physics).

· 2003-2008 training classes in the course of ?General Physics II? (Diploma in Mathematics).

*Student Supervising (**4 Post Doc, 6 PhD, 7 MS, 11 Bachelor, 11 Old type Deg.**)*

Please refer to the attached list of supervised students.

Educational and Professional Specializations:

· 1999, School on Synchrotron Radiation (ITCP) Trieste (IT).

· 1997/1998, Practical Training Stage on XPS and Scanning Auger Microscopy systems (Physical Electronics) Eden Prairie (MN-USA).

· 1997, Training on UHV AFM/STM and UHV VT-STM (Omicron) Frankfurt (DE). 1996, School on Scanning Probe Microscopy (CNR) Bologna (IT).

· 1995, ISASST1 First International School on Applied Surface Science Techniques (ITCP) Trento (IT).

· 1993/94/95, National School on Condensed Matter Physics (Villa Gualino) Torino (IT).

Technical areas of expertise:

Ultra High Vacuum UHV technology, photoelectron spectroscopy using standard and synchrotron radiation sources, Scanning Auger Electron Spectroscopy and Microscopy (AES), Atomic Force Microscopy (AFM), Magnetic Force Microscopy, Atomic Force Lithography, Variable Temperature Scanning Tunneling Microscopy and Spectroscopy (STM/STS), Spin Polarized STM, EXAFS, XAS, growth of thin organic and inorganic films on semiconductor surfaces. Plasma EUV sources.

Outreach:

· 2014 Coordinator for the University of L?Aquila of the European Reserarchers? Night ?Sharper?

· 2013 Dec 18 One page interview on graphene by ?il Centro?.

· 2012 April 06 Radio Interview by Radio Tre. Program ?Radio Tre Scienza?.

· 2010 Oct 07 Sole24Ore Presentation of the Graphita Conference.

· 2009 Youtube Presentation of the Physics Department http://www.youtube.com/watch?v=yXIKRKtV0eA (2300 views)

Awards and professional recognition:

· 2013 ?Premio Cultura dell?Eccellenza? awarded by AGICA (Agenzia Giornalistica Cultura in Abruzzo) for the Culture of Excellence in Abruzzo.

· 2011 Shortlisted for a position as Associate Professor at the University of Exeter (UK)

· 2001 Ranked first in the selection for a position as researcher at NNL, National Nanotechnology laboratory, University of Lecce.

· 1993 ?Premio Reiss Romoli? award for excellence in University studies.

· 1985 ?Premio Reiss Romoli? award for excellence in High School studies.

Luca Ottaviano

Publication List

BOOKS:

1. **L. Ottaviano**
and V. Morandi Eds., ?GraphITA 2011 Selected papers from the Workshop on Fundamentals and Applications of Graphene?, Springer, pp. 229, ISBN 978-3-642-20644-3

JOURNAL ARTICLES (62% as First or Senior)

First Author 22

Senior Author 33

1. ?Graphene oxide for gas detection under standard humidity conditions" M. Donarelli, S. Prezioso, F. Perrozzi, L. Giancaterini, C. Cantalini, E. Treossi, V. Palermo, S. Santucci**, L. Ottaviano 2D Materials2**, 035018 (2015).

2. ? Electronic and geometric structure of graphene/SiC(0001) decoupled by lithium intercalation? F. Bisti, G. Profeta, H. Vita, M. Donarelli, F. Perrozzi, P.M. Sheverdyaeva, P. Moras, K. Horn, and **L. Ottaviano, Phys. Rev. B91**, 245411 (2015).

3. ?Few layer MoS2 lithography with AFM tip: description of the technique and nanospectroscopy investigation?, M. Donarelli, F. Perrozzi, F. Bisti, F. Paparella, V. Feyer, A: Ponzoni, G. Munksaikhan, and **L. Ottaviano, Nanoscale7**, 11453 (2015) .

4. ?Electrostatic transparency of graphene oxide sheets?, C. E. Giusca, F. Perrozzi, **L. Ottaviano**, E. Treossi, V. Palermo, and Kazakova, **Carbon 86** , 188 (2015).

5. ?Comparative analysis of physico-chemical and gas sensing characteristics of two different forms of SnO_2 films ?, M. Kwoka, **L. Ottaviano**, J. Szuber, **Appl. Surf. Sci. 326**, 72 (2015).

6. "Graphene oxide: from fundamentals to applications" F. Perrozzi, S. Prezioso, **L. Ottaviano**, **J. Phys. Cond. Matter (Invited Topical Review)**, **27** , 013002 (2015).

7. ?Response to NO_2 and other gases of resistive chemically exfoliated MoS_2 -based gas sensors? M. Donarelli, S. Prezioso, F. Perrozzi, F. Bisti, M. Nardone, L. Giancaterini, L. Cantalini, and **L. Ottaviano**, **Sensors & Actuators 207**, 602 (2015).

8. ?Dose and wavelength dependent study of graphene oxide photoreduction with VUV synchrotron radiation?, S. Prezioso, F. Perrozzi, M. Donarelli, E. Stagnini, E. Treossi, V. Palermo, S. Santucci, M. Nardone, P. Moras, and **Luca Ottaviano, Carbon**, **79**, 478 (2014).

9. ?Reduction dependent wetting properties of graphene oxide? F. Perrozzi, S. Croce, E. Treossi, V. Palermo, S. Santucci, G. Fioravanti, and **L. Ottaviano**, **Carbon 77**, 473 (2014).

10. ?XPS and TDS studies of surface chemistry of Ag-covered L-CVD SnO_2 nanolayers? M.Kwoka, **L. Ottaviano**, P.Koscielniak , J.Szuber, **Nanoscale Research Letters 9**, 260 (2014).

11. ?Flake size-dependent cyto and genotoxic evaluation of graphene oxide on *in vitro* A549, CaCo2 and Vero cell lines ? L. De Marzi, **L. Ottaviano** , F. Perrozzi, M. Nardone, S. Santucci, J. de Lapuente, M. Borras, E. Treossi, V. Palermo and A. Poma, **Journal of Biological Regulators & Homeostatic Agents, 28,** 281 (2014).

12. ?Tetrakis Erbium quinolinate complexes, electronic structure investigation? F. Bisti, G. Anemone, M. Donarelli, S. Penna, A. Reale, **L. Ottaviano**, **Organic Electronics 15, 1810** (2014).

13. ?Metal-Induced Self-Assembly of Peroxiredoxin as a Tool for Sorting Ultrasmall Gold Nanoparticles into One-Dimensional Clusters? M. Ardini, F. Giansanti, L. Di Leandro, G. Pitari, A. Cimini**, L. Ottaviano**, M. Donarelli, S. Santucci, F. Angelucci, and R. Ippoliti**, Nanoscale 6**, 8052 **(**2014).

14. ?Components of strong magnetoresistance in Mn implanted Ge? A. Simons, A. Gerber, I. Ya. Korenblit, A. Suslov, B. Raquet, M. Passacantando, **L. Ottaviano**, G. Impellizzeri, and B. Aronzon, **J. of Appl. Phys.115**, 093703 (2014).

15. ?Graphene oxide coupled with gold nanoparticles for localized surface plasmon resonance based gas sensor? M. Cittadini, M. Bersani, F. Perrozzi, **L. Ottaviano**, W. Wlodarski, A. Martucci, **Carbon69**, 452 (2014).

16. ?Tunable sulphur desorption in exfoliated MoS2 by means of thermal annealing in ultra-high vacuum? M. Donarelli, F. Bisti, F. Perrozzi**,** **L. Ottaviano**, **Chem. Phys. Lett. 588,** 198?202 (2013).

17. ?Size-dependent impact of graphene oxide on phagocytic cells: evidencing the "mask effect", J. Russier, E. Treossi, A. Scarsi, F. Perrozzi, H. Dumortier, **L. Ottaviano**, M. Meneghetti, V. Palermo, and A. Bianco, **Nanoscale5**, 11234 (2013).

18. ?Graphene Oxide as a Practical Solution to High Sensitivity Gas Sensing? S. Prezioso, F. Perrozzi, L. Giancaterini, C. Cantalini, E. Treossi, V. Palermo, M. Nardone, S. Santucci, and **L. Ottaviano**, **J. Phys. Chem. C 117**, 10683?10690 (2013).

19. ?The electronic structure of gas phase croconic acid compared to the condensed phase: more insight into the hydrogen bond interaction ? F. Bisti, A. Stroppa, F. Perrozzi, M. Donarelli, S. Picozzi, M. Coreno, M. de Simone, K. C. Prince, and **L. Ottaviano**, **J. Chem. Phys.138** , 014308 (2013).

20. ?The Use of Optical Contrast to Estimate the Degree of Reduction of Graphene Oxide" F. Perrozzi, S. Prezioso, M. Donarelli, F. Bisti, P. De Marco, S. Santucci, M. Nardone, E. Treossi, V. Palermo, Vincenzo, and **L. Ottaviano**, **J. Phys. Chem. C 117**, 620 (2013).

21. "Unravelling the Role of the Central Metal Ion in the Electronic Structure of Tris-(8-Hydroxyquinoline) Metal Chelates: Photoemission Spectroscopy and Hybrid Functional Calculations" F. Bisti, A. Stroppa, M. Donarelli, G. Anemone, F. Perrozzi, S. Picozzi, and **L. Ottaviano, J. Phys. Chem. A116**, 11548 (2012).

22. ?Crystal Phase Dependent Photoluminescence of 6,13-Pentacenequinone? P. De Marco, F. Bisti, F. Fioriti, M. Passacantando, S. Prezioso, S. Santucci, C. Bittencourt, S. Lettieri, A. Ambrosio, P. Maddalena, and **L. Ottaviano**, **J. of Appl. Phys.112,**013512 (2012).

23. ?Combined microscopies study of the C-contamination induced by Extreme-UV radiation: a surface-dependent secondary-electron-based model.? S. Prezioso, M. Donarelli, F. Bisti, L. Palladino, S. Santucci, S. Spadoni, L. Avaro, A. Liscio, V. Palermo, and **L. Ottaviano**, **Appl. Phys. Lett. 100**, 201603 (2012).

24. ?Large area Extreme-UV lithography of graphene oxide via spatially resolved photo-reduction? S. Prezioso, F. Perrozzi, M. Donarelli, F. Bisti, S. Santucci, L. Palladino, M. Nardone, E. Treossi, V. Palermo, and **L. Ottaviano**, **Langmuir 28**, 5489 (2012).

25. ?Electronic structure of Tris(8-hydroxyquinolinato)aluminium (III) revisited using the Heyd-Scuseria-Ernzerhof hybrid functional: Theory and experiments? F. Bisti, A. Stroppa, M. Donarelli, S. Picozzi, **L. Ottaviano**, **Phys. Rev. B 84,**195112 (2011).

26. ?Bulk phase two dimensional chiral growth of 6,13 Pentacenequinone on SiO_2? P. De Marco, F. Fioriti, F. Bisti, P. Parisse, S. Santucci, **L. Ottaviano**, **J. Appl. Phys**. **109**, 063508 (2011).

27. ?Fingerprints of the Hydrogen bond in the photoemission spectra of Croconic acid condensed phase: an X-ray photoelectron spectroscopy and ab-initio study? F. Bisti, A. Stroppa, S. Picozzi, **L. Ottaviano**, **J. Chem. Phys.134**, 174505 (2011).

28. ?Room-temperature ferromagnetism in Mn-implanted amorphous Ge? **L. Ottaviano,** A. Continenza, G. Profeta, G. Impellizzeri, A. Irrera, R. Gunnella, O. Kazakova, **Phys. Rev. B 83,** 134426 (2011).

29. ?Infrared photoluminescence of erbium-Tris(8-hydroxyquinoline) in a distributed feedback cavity.? S. Prezioso, **L. Ottaviano** , F. Bisti, M. Donarelli, S. Santucci, L. Palladino, S. Penna, and A. Reale, **J. Luminesc. 131**, 4 (2011).

30. ? Cytogenetic stability of chicken T-cell line transformed with Marek?s disease virus: Atomic Force Microscope, a new tool for investigation.? S. Di Bucchianico, M. F. Giardi, P. De Marco, **L. Ottaviano,**D. Botti, **Journal of Molecular Recognition24,**608 (2011).

31. **?**Rapid identification of graphene flakes: Alumina does it better.**?** P De Marco, M Nardone, A Del Vitto, M Alessandri, S Santucci, **L Ottaviano**, **Nanotechnology 21,** 255703 (2010).

32. ?Localization of the dopant in Ge-Mn diluted magnetic semiconductors by x-ray absorption at the Mn K edge? R. Gunnella, L. Morresi, N. Pinto, A. Di Cicco, **L. Ottaviano,**M. Passacantando, A. Verna, G. Impellizzeri, A. Irrera, F. d?Acapito, **J. Phys.: Condens. Matter22** , 216006 (2010).

33. ?A study of the mechanical vibrations of a table-top extreme ultraviolet interference nanolithography tool? S. Prezioso, P. De Marco, P . Zuppella, S. Santucci, and **L. Ottaviano**, **Rev. Sci. Instr. 81**, 045110 (2010).

34. ?Magnetization driven metal ? insulator transition in strongly disordered Ge-Mn magnetic semiconductors.? O. Riss, A. Gerber, I.Ya. Korenblit, A. Suslov, M. Passacantando and **L. Ottaviano**, **Phys. Rev. B79**, 241202_R (2009).

35. ?Structural, electrical, electronic and optical properties of melanin films? M. Abbas, F. D'Amico, L. Morresi, N. Pinto, M. Ficcadenti, R. Natali, **L. Ottaviano**, M. Passacantando, M. Cuccioloni, M. Angeletti, and R. Gunnella, **Eur. Phys. Journal E** 28**,** 285 (2009).

36. ?Large area interference lithography using a table-top; extreme ultraviolet laser: a systematic study of the mutual coherence degree? P. Zuppella, D. Luciani, P. Tucceri, P. DeMarco, A. Gaudieri, J. Kaiser, **L. Ottaviano**, S. Santucci, A. Reale, **Nanotechnology 20**, 115303 (2009).

37. ?Influence of substrate doping on the surface chemistry and morphology of CuPc/Si(111) ultra thin films? M. Krzywiecki, L**. Ottaviano** , L. Grz?dziel, P. Parisse, S. Santucci, J. Szuber, **Thin Solid Films 517,** 1630 (2009).

38. ?Electron spin resonance and microwave magneto resistance in Ge-Mn thin film? R. Morgunov, M. Farle, M. Passacantando, **L. Ottaviano** , and O. Kazakova, **Phys. Rev. B 78,** 045206 (2008).

39. ?Effects of dimensionality on spin dynamics of Ge Mn systems? O. Kazakova, R. Morgunov, J. Kulkarni, J. Holmes, and **L. Ottaviano, Phys. Rev. B 77**, 235317 (2008).

40. ?XPS study of air exposed CuPc ultra-thin films deposited on Si (111) native substrates? M. Krzywiecki, L. Grz?dziel, **L. Ottaviano** , P. Parisse, S. Santucci, J. Szuber, **Mat. Science-Poland 26**, 287 (2008).

41. ?Photoluminescence sub micrometer spatial modulation of 6,13 pentacenequinone thin films? P. Parisse, D. Luciani, S. Santucci, P. Zuppella, P. Tucceri, A. Reale, **L. Ottaviano**, **J. Phys. D 48**, 111203 (2008).

42. ?Electronic, morphological, and transport properties of 6,13 Pentacenequinone thin films: theory and experiments? P. Parisse, S. Picozzi, and **L. Ottaviano**, **Org. Electronics 8**, 498 (2007).

43. ?Mn $L_{2,3}$ X-ray Absorption Spectra of a diluted Mn-Ge alloy.? **L. Ottaviano**, M. Passacantando, A. Verna, F. D?Amico, and R. Gunnella, **Appl. Phys. Lett. 90**, 242105 (2007).

44. ?Insulating Ground State of Sn/Si(111)-(?3x?3) R30°?S. Modesti, L. Petaccia, G. Ceballos, I. Vobornik, G. Panaccione, G. Rossi, **L. Ottaviano** , R. Larciprete, S. Lizzit, A. Goldoni, Phys. Rev. Lett. **98,** 126401 (2007).

45. ?Submicron patterning of a catalyst film by Scanning Probe Nanolithography for a selective chemical vapour deposition of carbon nanotubes ? P. Parisse, A. Verna, M. Rinaldi, F. Bussolotti, V. Grossi, M. Passacantando, M. Nardone, S. Santucci, **L. Ottaviano**, **J. Appl. Phys. 101** , 066101 (2007).

46. ?First-principles approach to the electronic structure in the Pentacene thin film polymorph? P. Parisse, **L. Ottaviano**, B. Delley, S. Picozzi, **J. Phys. Cond. Mat. 19**,106209 (2007).

47. ?Pentacene grown on self-assembled monolayer: adsorption energy, interface dipole and electronic properties? A. Kanjilal, **L. Ottaviano** , V. Di Castro, M. Beccari, M.G. Betti, and C. Mariani, **J. Phys. Chem**. **111**, 286 (2007).

48. ?Nanometer-scale spatial inhomogeneity of the chemical and electronic properties of an ion implanted Mn?Ge alloy? **L. Ottaviano** , P. Parisse, M. Passacantando, S. Picozzi, A. Verna, G. Impellizzeri, F. Priolo, **Surf. Sci. 600**, 4723 (2006).

49. ?Direct structural evidences of Mn dilution in Ge? **L. Ottaviano**, M. Passacantando, A. Verna, R. Gunnella, E. Principi, A. Di Cicco, G. Impellizzeri and F. Priolo, **J. of Appl. Phys 100**, 063528 (2006).

50. ?Conductivity of the thin film phase of Pentacene? P. Parisse, M. Passacantando, S. Picozzi, and **L. Ottaviano**, **Org. Elec. 7**, 403 (2006).

51. ?Ferromagnetism in ion implanted amorphous and Nano crystalline Mn*x*Ge1?*x?* A. Verna, **L. Ottaviano**, M. Passacantando, S. Santucci, P. Picozzi, F. D?Orazio, and F. Lucari, M. De Biase, R. Gunnella, M. Berti, A. Gasparotto, G. Impellizzeri and F. Priolo, **Phys. Rev. B 74**, 085204 (2006).

52. ?Growth of ferromagnetic nanoparticles in a diluted magnetic semiconductor obtained by Mn+ implantation on Ge single crystals? M. Passacantando, **L. Ottaviano**, F. D?Orazio, F. Lucari, M. De Biase, G. Impellizzeri and F. Priolo, **Phys. Rev. B73**, 195207 (2006).

53. ?Phase separation and dilution in ion implanted MnxGe(1-x) alloys? **L. Ottaviano**, M. Passacantando, S. Picozzi, A. Continenza, R. Gunnella, A. Verna, G. Bihlmayer, G. Impellizzeri, and F. Priolo, **Appl. Phys. Lett. 88**, 061907 (2006).

54. ?Morphological and electronic properties of the thin film phase of pentacene investigated by AFM and STM/STS ? P. Parisse, M. Passacantando, **L. Ottaviano**, **Appl. Surf. Sci**. **252,**7469 (2006).

55. ?Conformational and Electronic Properties of a Microperoxidase in Aqueous Solution: A Computational Study? C. Di Teodoro, M. Aschi, A. Amadei, D. Roccatano, F. Malatesta, and **L. Ottaviano**, **Chem. Phys.Chem.6**, 681 (2005).

56. ?Magnetization of epitaxial Mn-Ge alloys on Ge(111) substrates? R. Gunnella, L. Morresi, N. Pinto, R. Murri, **L. Ottaviano**, M. Passacantando, F. D?Orazio, F. Lucari, **Surf. Sci. 577**, 22 (2005).

57. ?X-ray absorption spectroscopy in MnxGe(1-x) diluted magnetic semiconductor: experiment and theory? S. Picozzi, **L. Ottaviano**, M. Passacantando, G. Profeta, A. Continenza, F. Priolo, M. Kim, and A. J. Freeman, **Appl. Phys. Lett. 86**, 062501 (2005).

58. ?Scanning Tunnelling Spectroscopy investigation of the Sn/Si(111) alpha and gamma surfaces? B. Ressel, C. Di Teodoro, G. Profeta, **L. Ottaviano**, V. Cháb, and K.C. Prince, **Surf. Sci**. **562**, 128 (2004).

59. **?**Structural distortion of the 1/3 ML C/Si(111) surface? G. Profeta, **L. Ottaviano**, and A. Continenza, **Phys. Rev. B 69,** 241307 (2004).

60. ?Electronic structure of a two dimensional alloy: Sn-Pb-Si on Si(111)?, C. Di Teodoro, B. Ressel, K.C. Prince, V. Cháb, S. Santucci, S. Faccani, G. Profeta, and **L. Ottaviano**, **J. Phys. Condens. Matter 16,**3507 (2004).

61. **?**Structural and electronic properties of the Sn/Si(111) 2rt3x2rt3 Surface revised.? **L. Ottaviano**, G. Profeta, L. Petaccia, C. B. Nacci, and S. Santucci, **Surf. Sci**. **554**, 109 (2004).

62. **?**Scanning Auger Microscopy study of W tips for Scanning Tunneling Microscopy? **L. Ottaviano**, L. Lozzi, and S. Santucci, **Rev. Sci. Instruments 74**, 3368 (2003).

63. ?Surface electronic properties of polycrystalline WO_3 thin films: a study by core level and valence band photoemission? F. Bussolotti, L. Lozzi, M. Passacantando, S. La Rosa, S. Santucci, and **L. Ottaviano**, **Surf. Sci. 538**,113 (2003).

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71. ?On the electronic structure of polycrystalline WO_3 investigated with spatially resolved Scanning Tunnelling Spectroscopy?, **L. Ottaviano** , L. Lozzi, M. Passacantando, and S. Santucci, **Surf. Sci. 475**, 73 (2001).

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73. **?**Defect induced perturbation on the Sn/Si(111) ? surface: a voltage dependent STM study?, **L. Ottaviano** , G. Profeta, A. Continenza, S. Santucci, A.J. Freeman, and S. Modesti, **Surf. Sci. 464**(2000) 57.

74. ?Structural and electronic properties of the Sn/Si(111) ? surface? G. Profeta, A. Continenza, **L. Ottaviano**, W. Mannstadt, and A. J. Freeman **Phys. Rev. B 62**, 1556 (2000).

75. ?STM investigation of the alpha-Sn/Si(111) phase at 120 K?, **L. Ottaviano**, M. Crivellari, L. Lozzi, and S. Santucci, **Surf. Sci. Letters 445,** L41 (2000).

76. ?Naphthalocyanine molecules onto Si(111)7x7 and Si(100)2x1: modes of adsorption investigated with XPS**?** **L.Ottaviano** , L. Lozzi, A. Montefusco, and S. Santucci, **Surf. Sci. 443** 227 (1999).

77. ?Copper Hexadecafluoro Phthalocyanine and Naphthalocyanine: the role of shake-up excitations in the interpretation and electronic distinction of high-resolution X-Ray photoelectron spectroscopy measurements? **L. Ottaviano**, L. Lozzi, F. Ramondo, P. Picozzi, and S. Santucci, **J. of Elec. Spectrosc. and Rel. Phen.105**, 145 (1999).

78. ?XPS studies on Hexadecafluoro-Copper-Phthalocyanine ultra thin films deposited onto Si(100)2x1? L. Lozzi, **L. Ottaviano** , F. Rispoli, P. Picozzi and S. Santucci, **Surf. Sci. 433**, 157 (1999).

79. ?Interaction of naphthalocyanine with oxygen and with Si(111)7x7: an in situ X-Ray photoelectron spectroscopy study? **L. Ottaviano** , L. Lozzi, and S. Santucci, **Surf. Sci. 431,** 242 (1999).

80. ?Thermally induced phase transition in crystalline lead phthalocyanine films investigated by XRD and atomic force microscopy? **L. Ottaviano** , L. Lozzi, A. R. Phani, A. Ciattoni, S. Santucci, and S. Di Nardo, **Appl. Surf. Sci. 136,** 81 (1998).

81. "Hexadecafluoro-copper-phthalocyanine UHV deposited onto Si(111)7x7 substrate: an XPS study" **L.Ottaviano** , L. Lozzi, F. Rispoli, and S. Santucci, **Surf. Sci. 402-404,** 518 (1998).

82. "PbPC growth onto silicon surfaces studied with XPS and various SPM techniques" **L. Ottaviano** , L. Lozzi, S. Santucci, S. Di Nardo, and M. Passacantando, **Surf. Sci. 392,**52 (1997).

83. "Thin and ultra-thin films of Nickel-Phthalocyanine grown on Highly Oriented Pyrolitic Graphite: an XPS, UHV-AFM, and air Tapping Mode AFM study." **L.Ottaviano**, S. Di Nardo, L. Lozzi, M. Passacantando, P. Picozzi, and S. Santucci, **Surf. Sci. 373,**318 (1997).

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85. "Structural investigation of gaseous, liquid, and solid Br_2 by X-ray absorption" A. Filipponi, **L. Ottaviano** , M. Passacantando, P. Picozzi, and S. Santucci, **Phys. Rev. E 48,** 4575 (1993).

86. **?**Double-electron excitation channels at the L edges of atomic Hg" A. Filipponi, **L. Ottaviano,** and T. A. Tyson, **Phys. Rev. A 48,** 2098 (1993).

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First Author 14

Senior Author 5

1. ?Photoemission studies of the surface electronic properties of L-CVD SnO_2 ultra thin films? M. Kwoka, **L. Ottaviano**, J. Szuber, **Appl. Surf. Sci. 258**, 8425 (2012).

2. ?3D island growth of 6,13 Pentacenequinone on silicon oxide and gold? P. Parisse, F. Bussolotti, M. Passacantando, **L. Ottaviano**, **Journal of non Cryst. Solids 356,** 2079 (2010).

3. ?XPS and SEM studies of oxide reduction of germanium nanowires? V. Grossi, L. Ottaviano, S. Santucci and M. Passacantando, **Journal of non Cryst. Solids 356,** 1988 (2010).

4. ?Nanowire directed diffusion limited aggregation growth of nanoparticles? L. Ottaviano, P. Parisse, V. Grossi, M. Passacantando, **Journal of non Cryst. Solids 356,** 2076 (2010).

5. ?Influence of Si substrate preparation on surface chemistry and morphology of L-CVD SnO_2 thin films studied by XPS and AFM? M. Kwoka , **L. Ottaviano**, N. Waczynska, S. Santucci, J. Szuber, **Appl. Surf. Sci. 256,** 5771 (2010).

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8. ?Mn doping of germanium nanowires by vapour-liquid-solid deposition? V. Grossi, F. Bussolotti, M. Passacantando, S. Santucci, and **L. Ottaviano**, **Super lattices and Microstructures 44**, 489 (2008).

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1. ?Electrical Response of GO Gas Sensors? C. Cantalini, L. Giancaterini, E. Treossi, V. Palermo, F. Perrozzi, S. Santucci and **L. Ottaviano**? **GraphITA 2011** Selected Papers from the Workshop on Fundamentals and Applications of Graphene, **Springer** p. 17 **(** 2012) Series Carbon Nanostructures.

2. ?Electronic properties of polycrystalline and amorphous Wo3 investigated with Scanning Tunnelling Spectroscopy? **L. Ottaviano** , E. Maccallini, and S. Santucci, LNP-Lecture Notes in Physics Series vol. XV, p. 278-286 (Watanabe Y., Heun S., Salviati G., and Yamamoto N. (Eds.) pp.310) Springer (2002).

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Luca Ottaviano (list of students mentored, topics & marks of their thesis)

Post Doc (in Physics):

· 2014 Francesco Perrozzi *?Fundamental properties and applications of two dimensional materials?*

· 2013 Federico Bisti *"Electronic properties of nanoscale systems"*

· 2012-2011 Stefano Prezioso *?Applicazioni di un laser X per litografia e fabbricazione di un laser a feedback distribuito nell'infrarosso?*

· 2006-2007 Adriano Verna *?Studio di strutture di pentacene su superfici vicinali di rame?*

PhD (in Physics):

· 2011-2013 Francesco Perrozzi *"Graphene oxide: from fundamentals to applications" Excellent.*

· 2011-2013 Maurizio Donarelli *"Electronic properties and potential device applications of exfoliated MoS_2 " Very good.*

· 2010-2012 Federico Bisti *"Ab-initio and photoelectron spectroscopy studies of carbon based materials" Excellent.*

· 2009-2011 Patrizia DeMarco
?Issues in structural identification of carbon based innovative materials: from pentacene derivatives to graphene? Very good.

· 2007-2009 Pietro Parisse *?Proprietà morfologiche, strutturali, elettroniche, e di trasporto di film sottili e cristalli singoli di molecole aromatiche: Pentacene, 6,13 Pentacenequinone, Rubrene? Excellent.*

· 2003-2005 Carla Di Teodoro *?Studio teorico-computazionale e sperimentale di proprietá elettroniche e strutturali di nanostrutture? Very good.*

MS Degree (in Physics):

- 2015 Marco Fantasia (under supervision).
- 2012 Gloria Anemone *?Composti organici innovativi per l'optoelettronica: studio sperimentale delle proprietá elettroniche.? 105/110.*
- 2010 Domenico Bonanni *?Self-regenerating, cost-effective, room-temperature, ultrasensitive rGO gas sensors for Environmental, Security and Military applications.? 110/110 e lode.*
- 2010 Francesco Perrozzi *"Studio di grafene ossidato mediante spettroscopia Raman e di fotoemissione" 110/110 e lode.*
- 2010 Maurizio Donarelli *"Uso di litografia interferenziale da raggi X per applicazioni in fotonica" 110/110.*
- 2005 Pietro Parisse *?Proprietà elettroniche e strutturali del Pentacene nella fase di film sottile?110/110 e lode*

Bachelor Degree (in Physics):

- 2015 Gianluca D?Olimpo (under supervision).
- 2012 Francesco Paparella ?*Nanolitografia per ossidazione anodica mediante microscopia a forza atomica di disolfuro di molibdeno.? 93/100.*
- 2012 Daniela Di Felice *?Esfoliazione e studio di cristalli bidimensionali di disolfuro di molibdeno? 93/100.*
- 2011 Alessio Pozzi *"Studio della composizione chimica ai bordi di Ossido di Grafene mediante spettroscopia di fotoemissione a raggi X e microscopia ottica." 110/110 e lode.*
- 2011 Matteo Cialone *"studio sperimentale dei bordi di ossido di grafene con tecniche di microscopia elettronica e spettroscopia a raggi X" 95/110.*
- 2011 Adolfo De Sanctis *?Deposition and characterization of Graphene from solid*

  carbon sources ? 110/110.
- 2010 Cesare Tresca *?Proprietà elettroniche di materiali organici ferroelettrici? 100/110.*
- 2008 Andrea D?Angelo *?Nanolitografia per ossidazione anodica mediante microscopia a forza atomica? 107/110.*
- 2006 Federico Bisti *"Studio mediante spettroscopia di fotoemissione X di film sottili di biossido di stagno" 110/110 e lode.*
- 2006 Maurizio Donarelli *"Studio mediante microscopia e spettroscopia a scansione tunnel di leghe manganese-germanio" 110/110.*
- 2004 Fortunato Piersimoni
  ?Determinazione della funzione di lavoro di Sistemi metallic bidimensionali con risoluzione subnanometrica mediante microscopia a scansione tunnel? 110/110.
- 2002 Fabio Valentini (Course in Material Sciences)
  ?Uso delle tecniche SP-STS e SP_STM per indagine morfologica dei domini magnetici di un multistrato Co10-Fe30? 110/110 e lode.

· 2002 Pietro Parisse *?Implementazione sperimentale di microscopia e spettroscopia a scansione tunnel spin polarizzato.? 106/110.*

Old Type Degree in Physics (Comprising First and 2nd level degrees):

· 2015 Stefano Palleschi (under supervision).

· 2009 Francesco Fioriti ?*Studio delle dinamiche di crescita di materiali organici basso fondenti: il caso del 6-13 pentacenequinone? 108/110.*

· 2005 Sandro Faccani *?Proprietà elettroniche strutturali di leghe metalliche bidimensionali investigate mediar spettroscopia di fotoemissione? 110/110.*

· 2004 Francesco D?Amico *?Caratterizzazione strutturale e elettronica di film sottili di molecole organiche di origine biologica? 110/110.*

· 2003 Michela Rossi *?Crescita di film ultrasottili di triossido di tungsteno: studio mediante tecniche di diffrazione e microscopie a scansione di sonda. ? 108/110.*

· 2002 Fabio Bussolotti *?Interazioni di gas con superfici cristalline di WO^3? 110/110 e lode.*

· 2001 Carla Di Teodoro
?Formazione e proprietá elettroniche di nanostrutture di stagno su silicio (111)? 110/110 e lode.

· 2001 Christophe Bonifacio Nacci ?*Trasferimento di carica in sistemi metallici bidimensionali: interpretazione microscopica degli spettri di fotoemissione? 108/110.*

· 2000 Marco Crivellari
?Studio al variare della temperature mediante microscopia a scansione a effetto tunnel (STM) del sistema Sn-Si(111) nell?intorno di deposizione di strato singolo. ? 110/110.

· 1999 Alessandro Montefusco
?Studio mediante XPS dei modi di adsorbimento della naftalocianina su Si(111)7x7 e Si(100)2x1: effetti di coadsorbimento di ossigeno? 110/110 e lode.

· 1997 Franco Rispoli
?Crescita e Caratterizzazione mediante XPS di strati sottili di ftalocianina depositati su substrati di SI(111)7x7 e SI(100)2x1? 110/110.

Luca Ottaviano List of participated Conferences and Invites Seminars

Conferences:

- February 2014, GraphESP Lanzarote (ES) (Oral).
- September 2012, GrapHEL 2012 Mikonos (GR) (2 Oral).
- June 2012, CIMTEC 2012 Montecatini (IT) (Oral).
- December 2011, Carbomat Catania (IT) (Oral).
- September 2011, SSP2010 Krakow (PL) (**Invited**).
- September 2010, Nano2010 Rome (IT) (2 Oral).

- October 2009, SIF (Italian Society of Physics) Bari (IT) (**Invited**).
- September 2008, SGS 2008 Ustron (PL) (**Invited**).
- July 2008, NanoSEA Frascati (IT) (Oral).
- September 2007, SSP2007 Ustron (PL) (**Invited**).
- June 2007, E-MRS Strasbourg (FR) (**Invited**).
- September 2006, IBMM Taormina (IT) (Oral).
- September 2006, SGS2006 Ustron (PL) (**Invited**).
- September 2006, E-MRS Warsaw (PL) (**Invited**).
- July 2006, NanoSEA Aix En Provence (FR) (**Invited**).
- September 2005, SSP2005 Ustron (PL) (**Invited**).
- July 2005, IVC16 Venice (IT) (Oral).
- September 2004, SGS2004 - Ustron (PL) (I**nvited**).
- July 2004, SILS annual meeting Camerino (IT) (Oral).

· May 2004, SPM2001 Nizhni Novgorod (RU) (**Invited**).

· September 2003, ECOSS 22 Prague (CZ) (Oral).

· March 2003, SPM2001 Nizhni Novgorod (RU) (Oral).

· September 2002, SGS2002 Ustron (Poland) (**Invited**).

· July 2002, ICSFS Marseille (FR) (Oral).

· July 2001, STM2001 Vancouver (CAN) (Oral).

· June 2001, INFMeeting Roma (IT) (3 posters).

· February 2001, SPM2001 Nizhni Novgorod (RU) (**Invited**).

· December 2000, Nanoscale Spectroscopy workshop Trieste (IT) (Oral).

· September 2000, SGS2000 Ustron (PL) (**Invited**).

· July 2000, SPS2000 Hamburg (DE) (Poster).

· June 2000, INFMeeting Genova (IT) (Poster).

· October 1999, AVS 99 Seattle (USA) (2 Oral).

· June 1999, INFMeeting - Catania (IT) (Oral).

· Sept 1998, SGS98 Ustron (PL) (**Invited**).

· Oct 1996, AVS96 Philadelphia (USA) (Oral).

· Sept 1996, ECOSS16 - Genova (IT) (Poster).

· July 1996, ICSOS-5 Aix En Provence (FR) (Poster).

· Aug 1994, XAFS VIII Berlin (DE) (Oral).

· Sept 1993, EPS, Second Liquid Matter Conference Firenze (IT) (Poster).

· Aug 1992, LAM VIII Liquid and Amorphous Metals Wien (AT) (Poster).

Invited Seminars:

· June 2015 ?Graphene oxide fundamental properties and applications? Department of Physics University of Naples (Italy).

· May 2015 ?Graphene oxide fundamental properties and applications in composite materials and interaction with living matter? Department of Chemistry University of Salerno (Italy).

· February 2015 ?Applications of graphene oxide? School of Technology University of Camerino

· February 2015 ?Two Dimensional Materials and Living matter? DISCAB, University of L?Aquila (Italy).

· January 2015 ?Graphene Oxide from fundamentals to applications? TAU, Department of Physics University of Tel Aviv (Israel).

· December 2014, ?Graphene Oxide from fundamentals to applications? ITAB & University of Chieti (IT).

· June 2014, ?Graphene Oxide from fundamentals to applications? National Physical Laboratory, London (UK).

· March 2013, ?Graphene Oxide from fundamentals to applications? Physics Department University of Torino (IT).

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