

Renato Buzio

CURRICULUM VITAE

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Formazione: 1998-2001, PhD in Fisica presso l'Università degli Studi di Genova; 1998, Laurea in Fisica presso l'Università degli Studi di Genova, 110/110 cum Laude.

Esperienze lavorative: 2009-oggi, ricercatore permanente presso il Consiglio Nazionale delle Ricerche CNR; 2006-2009, ricercatore post-doc del Dipartimento di Fisica, Università di Genova; 2003-2006, ricercatore a termine dell'Istituto Nazionale per la Fisica della Materia INFM (Genova); 2002-2003, ricercatore post-doc presso INFM (Genova).

Attività di ricerca: 1998-oggi, studi sperimentali nel campo della fisica delle superfici basati prevalentemente sull'uso delle microscopie a scansione di sonda (AFM, STM); indagini nel campo della nanotribologia, con particolare interesse per la meccanica del contatto e le proprietà di attrito di materiali 2D, attrito di materiali a base carbonio, processi elementari (a scala atomica) di dissipazione energetica, meccanica del contatto alla mesoscala; indagini nel campo delle proprietà morfologiche, meccaniche ed elettroniche alla superficie di materiali funzionali (superconduttori, semiconduttori organici ed ossidi).

Prodotti della ricerca: coautore di 59 articoli scientifici e 8 capitoli di *review*, rispettivamente su riviste scientifiche internazionali soggette a *peer-review* e monografie; coautore di 7 articoli su atti di convegni; citazioni totali WoS 1151, H-index 18 (Citazioni totali Google Scholar 1677, H-index 22); co-inventore di 1 brevetto internazionale; più di 40 interventi e poster a convegni nazionali e internazionali; 9 relazioni su invito a conferenze e workshop internazionali.

Partecipazione a progetti scientifici

- 2019-2020, Accordo bilaterale CNR/Royal Society of Edinburgh (Scotland) “Atomic-scale imaging of the superconducting condensate in the putative triplet superconductor Sr_3RuO_4 : a platform for topological quantum computation?”; ruolo: *partecipante*;
- 2019-2023, Ministero Università e Ricerca MIUR PRIN 2017 “Understanding and Tuning FRiction through nanostructure Manipulation UTFROM” 20178PZCB5; ruolo: *partecipante e responsabile* dell'attività scientifica di CNR-SPIN, finanziamento Euro 101894,00;
- 2015-2017, Progetto Premiale INFN-CNR “EOS - Organic Electronics for Advanced Research Instrumentation”; ruolo: *partecipante e responsabile* delle gestione del finanziamento per l'unità di Genova di CNR-SPIN, finanziamento Euro 35150,00;
- 2011-2014, FP7-NMP-2011-EU-Japan Collaborative Project “IRON-SEA: Establishing the basic science and technology for Iron-based Superconducting Electronics Applications”; ruolo: *partecipante*;
- 2006-2009, Ministero Università e Ricerca MIUR FIRB 2003 “NANOMED: Nanotechnologies for biomedicine”; ruolo: *partecipante*;
- 2004-2006, Ministero Università e Ricerca MIUR PRIN “Nanotribology”; ruolo: *partecipante*;
- 2003-2006, Ministero Università e Ricerca MIUR PNR “Carbon-based micro- and nano-structures”; ruolo: *partecipante*;
- 2001-2003, Istituto Nazionale per la Fisica della Materia INFM PRA 2001 “NANORUB: nanofriction”; ruolo: *partecipante*;

- 1998-1999, Istituto Nazionale per la Fisica della Materia INFM PRA 1997 “CLASS: Cluster assembled carbon based materials”; ruolo: *partecipante*;

Collaborazioni con l'industria: PI di programmi di collaborazione con aziende interessate alla ricerca nel campo della fisica delle superfici per scopi di R&D (2019-2020, HYPERTAC Genova, Italia; 2019, BATLAB SRL Genova, Italia; 2005 DRESSER ITALIA SRL Pavia, Italia).

Attività professionale: 2022, membro del Comitato Scientifico del Convegno “NFNS 2022 New Frontiers in Natural Science: 1st International Sencuk Meeting”, Konya (Turchia); 2016, membro del Comitato Scientifico della 3rd International Semiconductor Science and Technology Conference (ISSTC), Konya (Turchia); 2016-2020, membro dell'Advisory Board dell'Istituto CNR-SPIN; 2016, membro del comitato internazionale di *referee* al servizio dei programmi di ricerca della Executive Agency for Higher Education, Research, Development and Innovation Funding UEFISCDI (Romania); 2010-oggi, supervisore della strumentazione Microscopia a Forza Atomica AFM per l'Unità di Ricerca CNR-SPIN di Genova; 2008-2009, Professore a contratto dell'Università di Genova, Dipartimento di Fisica; 2008, membro del comitato scientifico del Primo Congresso Nazionale di Nanomedicina (Italia); 2008, membro del comitato internazionale di *referee* al servizio dei programmi di ricerca dell'Agenzia nazionale francese di ricerca ANR; 2007, membro del comitato organizzatore locale della European Science Foundation ESF "Nanotribo Workshop" (Italia).

Partecipazioni a commissioni di gara: 2010, Membro della commissione a supporto della fornitura “Fornitura ampliamento camera bianca da consegnare presso IOM Trieste” (prot. CNR-IOM 1340 del 09/07/2010); 2010, Membro della commissione a supporto della fornitura “Fornitura di elio liquido in dewar da consegnare presso IOM Trieste” (prot. CNR-IOM 1339 09/07/2010)

Referee e attività editoriale: 2023, membro dell'Editorial Board di Materials (MDPI, Basel, Switzerland; <https://www.mdpi.com/journal/materials/editors?search=buzio>); 2016 - 2023, membro dell'Editorial Board di Scanning (Hindawi e John Wiley & Sons, Inc.; <https://www.hindawi.com/journals/scanning/editors/>); 2006, co-editore del volume "Advances in Contact Mechanics: Implications for Material Science, Engineering and Biology", R. Buzio & U. Valbusa Eds., Transworld Research Network, India; 2003-oggi, attività di *referee* per riviste internazionali soggette a *peer-review* ed operanti nei campi della fisica della materia condensata, fisica delle superfici, film sottili, rivestimenti, microscopie a scansione di sonda e nanotribologia, pubblicate da Elsevier, Wiley, Institute of Physics, Springer, ASME, American Chemical Society, American Institute of Physics, American Physical Society, Nature, Royal Society of Chemistry, Beilstein-Institute.

Riconoscimenti: “Applied Physics Letters’ top reviewers for 2017” nel campo della Fisica della Materia Condensata e della Scienza dei Materiali (R.T. Collins et al. Appl. Phys. Lett. 111, 039801 (2017); doi: 10.1063/1.4991645).

Relazioni ad invito a workshop e conferenze internazionali

1. “Probing the nanoscale Schottky barrier height at metal/oxide-semiconductor heterostructures by Ballistic Electron Emission Microscopy: the case studies of SrTiO₃ and β -Ga₂O₃”, hybrid conference “NFNS 2022 - New Frontiers in Natural Science: 1st International Sencuk Meeting”, Konya (Turkey), October 17 - 19, 2022.
2. “Colloidal AFM Probes Sliding on Graphite: Triboinduced Material Transfer, Atomic-scale Friction and Superlubricity”, ICTP Meeting “Dissipation Mechanisms in Nano/Mesoscale Tribological Systems”, Trieste (Italy), 30 May - 2 June, 2022.
3. “Ultralow friction of ink-jet printed graphene flakes”, International Congress “NanoInnovation 2017”, Roma (Italy), September 26 - 29, 2017.
4. “Mesoscale contact mechanics by elastomer poly(dimethylsiloxane) colloidal AFM probes”, European Science Foundation - “FANAS NETWORKING ACTIVITIES” Workshop on "Understanding Adhesion: from Nature to man-made devices" Alberobello, Bari (Italy), May 10-11, 2010.
5. “Contact mechanics by elastomer colloidal AFM probes”, Congress “Modelling and simulation of friction at the nanoscale: from understanding to control”, Centre Européen de Calcul Atomique et Moléculaire CECAM, Lyon (France), November 7 - 10, 2007.

6. "Advances in Mesoscale Contact Mechanics: deformation and adhesion of poly(dimethylsiloxane) AFM probes", Congress "NANOMECH06 - Symposium on Materials Science & Materials Mechanics at the Nanoscale", Bari (Italy), November 19-23, 2006.
7. "Nanotribology: advances in nanoscale lubrication and contact mechanics" at the "11th International Ceramic Congress CIMTEC06", Acireale (Italy), June 2006.
8. "Advances in contact mechanics at the nano & mesoscale", Workshop "Broad-Minded Modeling in Continuum Physics" by Italian Institute for Higher Mathematics, Roma (Italy), October 3-7, 2005.
9. "Experimental investigations on the contact mechanics of rough fractal surfaces", Congress "IVC-16, ICSS-12, NANO-8, AIV-17", Venezia (Italy), June - July 2004.

Elenco delle pubblicazioni su riviste internazionali soggette a peer-review

1. R. Buzio, E. Gnecco, C. Boragno, U. Valbusa, P. Piseri, E. Barborini, & P. Milani, "Self-affine properties of cluster-assembled carbon thin films", *Surf. Sci.* 444, L1 (2000).
2. E. Gnecco, R. Buzio, C. Boragno, & U. Valbusa, "AFM analysis of tribological properties of amorphous carbon films", *Acta Physica Slovaca* 50, 423 (2000).
3. R. Buzio, E. Gnecco, C. Boragno, & U. Valbusa, "Friction force microscopy investigation of nanostructured carbon films", *Carbon* 40, 883 (2002).
4. F. Siviero, E. Barborini, C. Boragno, R. Buzio, E. Gnecco, C. Lenardi, P. Piseri, S. Vinati, U. Valbusa, & P. Milani, "In situ investigation of the first stages of growth of cluster-assembled carbon films by scanning tunneling microscopy", *Surf. Sci.* 513, 381 (2002).
5. D. Sekiba, S. Bertero, R. Buzio, F. Buatier de Mongeot, C. Boragno & U. Valbusa. "Stabilization of ripple structure by oxidation", *Appl. Phys. Lett.* 81, 2632 (2002).
6. R. Buzio, C. Boragno, U. Valbusa, "Nanotribology of cluster assembled carbon films", *Wear* 254, 981 (2003).
7. R. Buzio, F. Buatier de Mongeot, C. Boragno, U. Valbusa, "A Novel approach for the investigation of mesoscopic contact mechanics", *Thin Solid Films* 133, 111 (2003).
8. R. Buzio, C. Boragno, U. Valbusa, "Contact Mechanics and friction of fractal surfaces probed by AFM", *Wear* 254, 917 (2003).
9. R. Buzio, C. Boragno, F. Biscarini, F. Buatier de Mongeot & U. Valbusa, "The contact mechanics of fractal surfaces", *Nature Materials* 2, 233 (2003).
10. F. Buatier de Mongeot, W. Zhu, A. Molle, R. Buzio, C. Boragno, U. Valbusa, E. G. Wang & Zhenyu Zhang "Nanocrystal formation and faceting instability in Al(110) homoepitaxy: true upward adatom diffusion at step edges and island corners", *Phys. Rev. Lett.* 91, 16102-1 (2003).
11. R. Buzio, K. Malyska, Z. Rymuza, C. Boragno, F. Biscarini, F. Buatier de Mongeot, U. Valbusa, "Experimental investigation of the contact mechanics of rough fractal surfaces", *IEEE Transactions on Nanobioscience* 3, 27 (2004).
12. R. Buzio, P. Calvini, A. Ferroni, U. Valbusa, "Surface analysis of paper documents damaged by foxing", *Applied Physics A: Material Science & Processing* 79, 383 (2004).
13. A. Molle, F. Buatier de Mongeot, F. Granone, R. Buzio, G. Firpo, C. Boragno, U. Valbusa, "Temperature dependence of rippled corrugations induced on the Rh(110) surface via ion sputtering", *Nucl. Instrum. Meth. B* 230, 555 (2005).
14. A. Molle, F. Buatier de Mongeot, C. Boragno, R. Moroni, F. Granone, D. Sekiba, R. Buzio, U. Valbusa, R. Felici, C. Quiros "Dense arrays of Co nanocrystals epitaxially grown on ion-patterned Cu(110) substrates", *Appl. Phys. Lett.* 86, 141906 (2005).
15. A. Toma, F. Buatier de Mongeot, R. Buzio, G. Firpo, S. R. Bhattacharyya, C. Boragno, U. Valbusa, "Ion beam erosion of amorphous materials: evolution of surface morphology", *Nucl. Instrum. Meth. B* 230, 551 (2005).
16. A. Kravchuk, R. Buzio, U. Valbusa, Z. Rymuza, "Initial Penetration of an Elastic Axially Symmetric Indenter into a Rigid-Perfectly-Plastic Half-Space" - *Technische Mechanik*, 25, 81 (2005).
17. A. Kravchuk, A. Chigarev, R. Buzio, U. Valbusa, "Penetration of Elastic Roughness into Thick Plastic Coating", *Journal of Friction and Wear*, 25, 455 (2005).
18. E. Mele, F. Di Benedetto, R. Cingolani, D. Pisignano, A. Toma, F. Buatier de Mongeot, R. Buzio, C. Boragno, G. Firpo, V. Mussi and U. Valbusa, "Nanostructuring polymers by soft lithography templates realized via ion sputtering", *Nanotechnology* 16, 1 (2005).

19. R. Buzio, A. Chierichetti, G. Bianchi, U. Valbusa "Morphological characterization and scaling behaviour of WC coatings deposited by HVOF thermal spray", *Surface & Coat. Technol.* 200, 6430 (2006).
20. L. Bruschi, G. Fois, A. Pontarollo, G. Mistura, B. Torre, F. Buatier de Mongeot, C. Boragno, R. Buzio and U. Valbusa "Structural Depinning of Ne Monolayers on Pb at $T < 6.5$ K" *Phys. Rev. Lett.* 96, 216101 (2006).
21. R. Buzio, C. Boragno and U. Valbusa, "Friction laws for lubricated nanocontacts", *J. Chem. Phys.* 125, 094708 (2006).
22. R. Buzio, A. Toma, A. Chincarini, F. Buatier de Mongeot, C. Boragno & U. Valbusa, "Atomic Force Microscopy and X-ray Photoelectron Spectroscopy characterization of low-energy ion sputtered mica", *Surf. Sci.* 601, 2735 (2007).
23. R. Buzio, A. Bosca, S. Krol, D. Marchetto, S. Valeri, U. Valbusa "Deformation and adhesion of elastomer poly(dimethylsiloxane) colloidal AFM probes", *Langmuir*, 23, 9293 (2007).
24. G. Fois, L. Bruschi, L. d'Apolito, G. Mistura, B. Torre, F. Buatier de Mongeot, C. Boragno, R. Buzio and U. Valbusa "Low temperature static friction of N₂ monolayers on Pb(111)", *J. Phys. Condens. Matter* 19, 305013 (2007).
25. R. Moroni, R. Buzio, A. Chincarini, U. Valbusa, F. Buatier de Mongeot, L. Bogani, A. Caneschi, R. Sessoli, L. Cavigli and M. Gurioli "Optically Addressable Single-Molecule-Magnet Behaviour of Vacuum-Sprayed Ultrathin Films", *J. Mater. Chem.*, 18, 1 (2008).
26. E. Angeli, R. Buzio, G. Firpo, R. Magrassi, V. Mussi, L. Repetto and U. Valbusa, "Nanotechnology applications for medicine", *Tumori* 94, 206 (2008).
27. R. Buzio, U. Valbusa "Interfacial stiffness and adhesion of randomly rough contacts probed by elastomer colloidal AFM probes" *J. Phys. Cond. Matt.*, 20, 354014 (2008).
28. V. Califano, F. Bloisi, L.R.M. Vicari, M. Barra, A. Cassinese, E. Fanelli, R. Buzio, U. Valbusa, A. Carella, A. Roviello "Substrate temperature dependence of the structure of polythiophene thin films obtained by Matrix Assisted Pulsed Laser Evaporation (MAPLE)", *Eur. Phys. J. Appl. Phys.* 48, 10505 (2009).
29. L. Repetto, R. Buzio, C. Denurchis, G. Firpo, E. Piano, U. Valbusa "Fast three-dimensional nanoscale metrology in dual-beam FIB-SEM instrumentation" *Ultramicroscopy*, 109, 1338 (2009).
30. E. Bellingeri, R. Buzio, A. Gerbi, D. Marrè, S. Congiu, M.R. Cimberle, M. Tropeano, A.S. Siri, A. Palenzona, C. Ferdeghini "High quality epitaxial FeSe_{0.5}Te_{0.5} thin films grown on SrTiO₃ substrate by pulsed laser deposition", *Supercond. Sci. & Technol.*, 22, 105007 (2009).
31. E. Bellingeri, I. Pallecchi, R. Buzio, A. Gerbi, D. Marrè, M. R. Cimberle, M. Tropeano, M. Putti, A. Palenzona, C. Ferdeghini " $T_c=21$ K in epitaxial FeSe_{0.5}Te_{0.5} thin films with biaxial compressive strain", *Appl. Phys. Lett.* 96, 102512 (2010).
32. E. Bellingeri, I. Pallecchi, R. Buzio, A. Gerbi, D. Marrè, M.R. Cimberle, M. Tropeano, M. Putti, A. Palenzona, S. Kaciulis, C. Ferdeghini "Critical Temperature Enhancement by Biaxial Compressive Strain in FeSe_{0.5}Te_{0.5} Thin Films" *J. Supercond. Nov. Magn.*, 24, 35-41 (2010).
33. A. S. Kravchuk, A. I. Kravchuk, Z. Rymuza, U. Valbusa, R. Buzio, "Theoretical bases of identification of solid surface fractality", *Journal of Friction and Wear*, 32 (5) 333-337 (2011).
34. A. Gerbi, R. Buzio, E. Bellingeri, S. Kawale, D. Marrè, A. S. Siri, A. Palenzona, C. Ferdeghini "Superconducting FeSe_{0.5}Te_{0.5} thin films: a morphological and structural investigation with STM and XRD", *Supercond. Sci. Technol.* 25, 012001 (2012).
35. E. Bellingeri, S. Kawale, I. Pallecchi, A. Gerbi, R. Buzio, V. Braccini, A. Palenzona, M. Putti, E. Sarnelli, M. Adamo and C. Ferdeghini, "Strong vortex pinning in FeSe_{0.5}Te_{0.5} epitaxial thin film", *Appl. Phys. Lett.* 100, 082601 (2012).
36. R. Buzio, L. Repetto, F. Giacomelli, R. Ravazzolo and Ugo Valbusa, "Label-free, atomic force microscopy-based mapping of DNA intrinsic curvature for the nanoscale comparative analysis of bent duplexes", *Nucleic Acids Research* 40, e84 (2012).
37. R. Buzio, A. Gerbi, A. Gadaleta, L. Anghinolfi, F. Bisio, E. Bellingeri, A.S. Siri, D. Marrè, "Modulation of resistance switching in Au/Nb:SrTiO₃ Schottky junctions by ambient oxygen", *Applied Physics Letters* 101 (24), 243505 (2012).
38. M. Biasotti, L. Pellegrino, R. Buzio, E. Bellingeri, C. Bernini, A.S. Siri, D. Marre, "Fabrication and electromechanical actuation of epitaxial SrTiO₃(001) microcantilevers", *Journal of Micromechanics and Microengineering* 23, 035031 (2013).

39. M. Langer, M. Kisiel, R. Pawlak, F. Pellegrini, G.E. Santoro, R. Buzio, A. Gerbi, G. Balakrishnan, A. Baratoff, E. Tosatti, E. Meyer, “Giant frictional dissipation peaks and charge-density-wave slips at the NbSe₂ surface”, *Nature Materials* 13, 173 (2014).
40. A. Gerbi, R. Buzio, A. Gadaleta, L. Anghinolfi, M. Caminale, E. Bellingeri, A.S. Siri, D. Marré “Ballistic transport at the nanometric inhomogeneities in Au/Nb:SrTiO₃ resistive switches”, *Adv. Mat. Interf.* 1, 1300057 (2014).
41. R. Buzio, L. Repetto, F. Giacomelli, R. Ravazzolo, U. Valbusa, “Symmetric curvature descriptors for label-free analysis of DNA” *Scientific Reports* 4, 6459 (2014).
42. R. Buzio, A. Gerbi, D. Marré, M. Barra, A. Cassinese, “Electron injection barrier and energy-level alignment at the Au/PDI8-CN₂ interface via current–voltage measurements and ballistic emission microscopy” *Organic Electronics* 18, 44-52 (2015).
43. F. Bisio, G. Gonella, G. Maidecchi, R. Buzio, A. Gerbi, R. Moroni, A. Giglia and M. Canepa “Broadband plasmonic response of self-organized aluminium nanowire arrays”, *J. Phys. D: Appl. Phys.* 48, 184003 (2015).
44. S. Kawale, E. Bellingeri, V. Braccini, R. Buzio, A. Gerbi, A. Sala, E. Reich, B. Holzapfel, M. Adamo, E. Sarnelli, C. Tarantini, M. Putti, C. Ferdeghini, “Potentiality for Low Temperature—High Field Application of Iron Chalcogenide Thin Films”, *IEEE Transactions on Applied Superconductivity* 25, 7300305 (2015).
45. M. Kisiel, F. Pellegrini, G. E. Santoro, M. Samadashvili, R. Pawlak, A. Benassi, U. Gysin, R. Buzio, A. Gerbi, E. Meyer, and E. Tosatti, “Noncontact Atomic Force Microscope Dissipation Reveals a Central Peak of SrTiO₃”, *Phys. Rev. Lett.* 115, 046101 (2015).
46. G. Maidecchi, C.V. Duc, R. Buzio, A. Gerbi, G. Gemme, M. Canepa, F. Bisio, “Electronic Structure of Core-Shell Metal/Oxide Aluminum Nanoparticles”, *J. Phys. Chem. C* 119, 26719 (2015).
47. A. Perasso, C. Toraci, A.M. Massone, M. Piana, A. Gerbi, R. Buzio, S. Kawale, E. Bellingeri, C. Ferdeghini, “An automatic method for atom identification in scanning tunnelling microscopy images of Fe-chalcogenide superconductors”, *Journal of Microscopy* 260, 302 (2015).
48. R. Buzio, Andrea Gerbi, Daniele Marré, Mario Barra, Antonio Cassinese, “Ballistic electron and photocurrent transport in Au/organic/Si(001) diodes with PDI8-CN₂ interlayers”, *J. Vac. Sci. Technol. B* 34, 041212 (2016).
49. R. Buzio, A. Gerbi, S. Uttiya, C. Bernini, A.E. Del Rio Castillo, F. Palazon, A.S. Siri, V. Pellegrini, L. Pellegrino, F. Bonaccorso, “Ultralow friction of ink-jet printed graphene flakes”, *Nanoscale* 9, 7612 (2017).
50. A. Gerbi, R. Buzio, S. Kawale, E. Bellingeri, A. Martinelli, C. Bernini, C. Tresca, M. Capone, G. Profeta, C. Ferdeghini, “Atomic-scale distortions and temperature-dependent large pseudogap in thin films of the parent iron-chalcogenide superconductor Fe_{1+y}Te”, *J. Phys. Cond. Matt.* 29, 485002 (2017).
51. R. Buzio, A. Gerbi, M. Barra, F. Chiarella, E. Gnecco, A. Cassinese, “Subnanometer Resolution and Enhanced Friction Contrast at the Surface of Perylene Diimide PDI8-CN₂ Thin Films in Ambient Conditions”, *Langmuir* 34, 3207-3214 (2018).
52. R. Buzio, A. Gerbi, E. Bellingeri, D. Marré, “Temperature- and doping-dependent nanoscale Schottky barrier height at the Au/Nb:SrTiO₃ interface” *Appl. Phys. Lett.* 113, 141604 (2018).
53. A. Gerbi, C. González, R. Buzio, N. Manca, D. Marré, L. D. Bell, D. G. Trabada, S. Di Matteo, P. L. de Andres, and F. Flores, “Accurate *ab initio* determination of ballistic electron emission spectroscopy: Application to Au/Ge”, *Phys. Rev. B* 98, 205416 (2018).
54. A. Gerbi, R. Buzio, C. González, N. Manca, D. Marré, S. Marras, M. Prato, L. Bell, S. Di Matteo, F. Flores, P.L. De Andres, “Macroscopic Versus Microscopic Schottky Barrier Determination at (Au/Pt)/Ge(100): Interfacial Local Modulation”, *ACS Appl. Mater. Interf.* 12, 28894 (2020).
55. R. Buzio, A. Gerbi, Q. He, Y. Qin, W. Mu, Z. Jia, X. Tao, G. Xu, S. Long, “Benchmarking β -Ga₂O₃ Schottky Diodes by Nanoscale Ballistic Electron Emission Microscopy”, *Adv. Electr. Mater.* 6, 1901151 (2020).
56. R. Buzio, A. Gerbi, C. Bernini, L. Repetto, A. Vanossi, “Graphite superlubricity enabled by triboinduced nanocontacts” *Carbon* 184, 875 (2021).
57. C.A. Marques, L.C. Rhodes, R. Fittipaldi, V. Granata, C.M. Yim, R. Buzio, A. Gerbi, A. Vecchione, A.W. Rost, P. Wahl, “Magnetic-Field Tunable Intertwined Checkerboard Charge Order and Nematicity in the Surface Layer of Sr₂RuO₄”, *Adv. Mater.* 33, 2100593 (2021).

58. R. Buzio, A. Gerbi, C. Bernini, L. Repetto, A. Vanossi, "Sliding Friction and Superlubricity of Colloidal AFM Probes Coated by Tribo-Induced Graphitic Transfer Layers" *Langmuir* 38, 12570 (2022).
59. A. Gerbi, R. Buzio, C. González, F. Flores, P.L. de Andres, "Phase-space *ab-initio* direct and reverse ballistic-electron emission spectroscopy: Schottky barriers determination for Au/Ge(100)" *Appl. Surf. Sci.* 609, 155218 (2023).

Elenco delle pubblicazioni su atti di convegni nazionali e internazionali

1. L. Pellegrino, N. Manca, T. Kanki, S. Yamasaki, H. Tanaka, M. Biasotti, R. Buzio, E. Bellingeri, V. Ceriale, AS Siri, D. Marré "All-oxide microcantilevers: Perspectives for device applications" Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS & EUROSENSORS XXVII), 2013 Transducers & Eurosensors XXVII: The 17th International Conference on Page 988-991, Editor IEEE.
2. R. Buzio and U. Valbusa, "Friction laws for lubricated nanocontacts", *Proceedings of the VIENNANO07 conference*, Vienna (2006).
3. R. Buzio and U. Valbusa, "Advances in mesoscale contact mechanics" in *Proceedings of the NANOMECH06 conference*, Bari (2006).
4. R. Buzio and U. Valbusa, "Probing the role of nanoroughness in contact mechanics by AFM" in *Proceedings of the CIMTEC06 Conference*, Acireale (2006).
5. R. Buzio, K. Malyska, Z. Rymuza, C. Boragno, F. Buatier de Mongeot, U. Valbusa, "Nanoindentations on SrTiO₃ substrates: effects of fractal roughness on contact mechanics" in *Proceedings of 2003 ASME/STLE Joint International Tribology Conference*, Ponte Vedra Beach (2003).
6. R. Buzio, C. Boragno, F. Biscarini, F. Buatier de Mongeot & U. Valbusa, "Investigation of the mesoscopic contact mechanics of sexithienyl thin films" in *Proceedings of the IEEE-EMBS Special Topic Conference on Molecular, Cellular and Tissue Engineering*, Genova (2002).
7. R. Buzio, C. Boragno, U. Valbusa, "Investigation of nanostructured carbon films by Atomic Force Microscopy" in *Proceeding of the Workshop Nanotubes & Nanostructures 2001*, Roma (2002).
8. R. Buzio, C. Boragno, U. Valbusa, "Nanotribologia di Film a base di carbonio" in *Proceeding of the CNR, ASI, PF-MSTA II, Elettra Conference* "Materiali per lo spazio: sintesi, metodologie, tecnologie", Roma (2001).

Elenco delle pubblicazioni su monografie

1. R. Buzio, "Exploring mesoscale contact mechanics by Atomic Force Microscopy" in *Scanning Probe Microscopy in Nanoscience and Nanotechnology 3*, B. Bhushan Ed., NanoScience and Technology, Springer-Verlag Berlin Heidelberg (2013).
2. R. Buzio, B. Torre, L. Bruschi, G. Mistura, U. Valbusa "Dry friction phenomena at the nanoscale" in *Encyclopedia of Nanoscience and Nanotechnology*, 2nd Edition, H. S. Nalwa Ed., Volume 13, 159-193 American Scientific Publishers (2011).
3. R. Buzio, U. Valbusa "Poly(dimethylsiloxane) colloidal AFM probes: a new tool for mesoscale contact mechanics investigations" in *The Nanomechanics in Italy*, N. M. Pugno Ed., Transworld Research Network, India (2008).
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5. R. Buzio, U. Valbusa, Chapter 16 "The Role of Nanoroughness in Contact Mechanics" in *Fundamentals of Friction and Wear on the Nanoscale*, E. Gnecco & E. Meyer Eds., Springer, Heidelberg (2007).
6. R. Buzio, U. Valbusa, Chapter 19 "Morphological and tribological characterization of rough surfaces by Atomic Force Microscopy" in *Applied Scanning Probe Methods III*, B. Bhushan & H. Fuchs Eds., Springer-Verlag, Heidelberg (2006).
7. R. Buzio, U. Valbusa, Chapter 8 "Mesoscopic contact mechanics" in *Advances in Contact Mechanics: Implications for Material Science, Engineering and Biology*, R. Buzio & U. Valbusa Eds., Transworld Research Network, India (2006).
8. R. Buzio, C. Boragno, F. Biscarini, F. Buatier de Mongeot, U. Valbusa, "A fractal approach to the contact mechanics of randomly rough surfaces", *Recent Res. Devel. Appl. Phys.* 6, 859, Transworld Research Network, India (2003).

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Genova, 30 Maggio 2023