



Politecnico di Bari
Dipartimento di Meccanica, Matematica e Management
Viale Japigia 182 - 70126 Bari - Italia

Bari, 08/ 05/2015

Ogg.: Consultazione per designazione di Componente del Consiglio di Amministrazione del Politecnico di Bari per il periodo 2015 – 2018

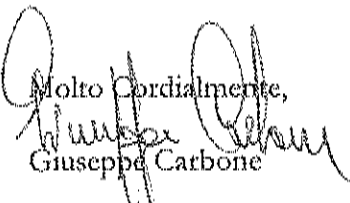
POLITECNICO DI BARI
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Al Decano del Politecnico di Bari
Prof. Ing. Michele Napolitano
c/o Direzione Generale del Politecnico
Politecnico di Bari
SEDE

Chiar.mo prof. Napolitano,

con la presente presento la mia candidatura ai fini della consultazione in oggetto, giusto Suo Decreto del 23 aprile 2015.

Allego alla presente mio curriculum vitae, elenco pubblicazioni e dichiarazione di sostegno alla candidatura firmata da alcuni colleghi.

Molto Cordialmente,

Giuseppe Carbone

Professore Associato di Meccanica Applicata alle Macchine
Dipartimento di Meccanica, Matematica e Management
Politecnico di Bari

CURRICULUM VITAE

Dr. Ing. Giuseppe CARBONE

Associate Professor of Mechanics of Machines

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Scopus Researcher ID: <http://www.scopus.com/authid/detail.url?authorId=35239801500>

Google scholar: <http://scholar.google.it/citations?user=uwXISbIAAAAJ&hl=it>

ResearchGate https://www.researchgate.net/profile/Giuseppe_Carbone2/

GENERAL INFORMATION

Place of birth and age

Giuseppe Carbone was born in Bitonto, Bari - Italy on August 9, 1971.

Academic Positions

- Since April 2012 *Associate Professor* at the Faculty of Engineering - Politecnico di Bari, Italy
- Nov. 2001 – April 2012, *Assistant Professor* at the Faculty of Engineering - Politecnico di Bari, Italy
- In Feb. 2007 he won a selection for a position as *University Docent* (UD) at the Department of Mechanical Engineering – Technical University of Eindhoven. However, Dr. Carbone declined the offer for personal reasons and kept his position at Politecnico di Bari.

Education

- Ph. D. in “Engineering of Advanced Production Systems”, 1999 - 2001 Politecnico di Bari – Italy.
- Qualification as Engineer, 1998, Italian Association Engineers.
- Summa cum laude Mechanical Engineering Degree, 20 February 1998 Politecnico di Bari – Italy.

Associations

- Currently Member of the American Society of Mechanical Engineering
- Currently Member of the Royal Society of Chemistry
- Currently Member of the Steering Committee of the Italian Association of Tribology
- Currently Member of the Italian Association of Engineers

- Currently Member of the Italian Physical Society
- Currently Member of the International Federation for the Promotion of Mechanism and Machine Science
- Currently Member of the Italian Association of Theoretical and Applied Mechanics
- Vicepresident of the Apulia and Lucania Section of the Technical Association of Automobile

Research Experience and collaboration with other research institutions

- He has been invited as *visiting scientist* at the Institute of Solid State Research of the Forschungszentrum-Juelich 52425 Juelich, Germany, where he collaborated with Dr. Bo N.J. Persson on tribology research. A brief list of periods spent in Juelich and projects he has carried out at the Forschungszentrum-Juelich is reported below:
 - September-October 2003: contact mechanics in wet microcontacts – dewetting transition.
 - February 2004: effect of surface morphology on the adhesion of thin elastic layers.
 - August – September 2004: crack propagation in viscoelastic solids.
 - December 2004 – February 2005: crack propagation in viscoelastic solids.
 - September – October 2006: contact mechanics and friction of viscoelastic solids
 - November 2008 – February 2009: rubber friction on anisotropic rough surfaces
- He has been invited as *visiting scientist* at the Department of Mechanical Engineering - Technical University of Eindhoven, where he collaborated with prof. M. Steinbuch in the field of Continuously Variable Transmission during the following periods:
 - September - December 2005: CVT dynamics: theory and experiments
 - November - December 2006: Shifting Behavior of Chain and Belt Continuously Variable Transmission.
 - October - December 2007: Dynamics of CVT transmissions.
- He has been invited in August 2005 as *visiting scientist* by Prof. E. Tosatti and Dr. U. Tartaglino at the International School for Advanced Studies (SISSA) - Trieste (Italy), Institute of Soft Matter, where his research activity has been focused on the mechanics of soft solids in contact with randomly rough substrates
- During the period 2007-2009 he has been *member of the committee* of the PhD course in Manufacturing Systems and Robotics at the Ecole Polytechnique Fédérale de Lausanne, Lausanne - Switzerland.
- Since December 2011 he is *member of the committee* on nanotechnologies and nanostructured innovative materials of the Scuola Interpolitecnica di Dottorato (SIPD) which is a special project whereby the three Italian Technical Universities, the Polytechnic of Torino (coordinator of the project), the Polytechnic of Bari and the Polytechnic of Milano, aim to offering a joint PhD program of high qualification in the areas of Information and Communication Technologies, Biomedical and Biomechanical Engineering, Environmental and Territorial Safety and Control, Innovation Management and Product Development, Nanotechnologies and nanostructured innovative materials.
- In May 2014 he has been *Examiner* of a PhD dissertation entitled “Local rheology of lubricants in the elastohydrodynamic regime” at Imperial College London.
- In June 2014 he has been invited to act as *member of the committee* for the assessment of the PhD thesis on the control of advanced CVT systems.

Main research areas

- contact mechanics, viscoelastic materials, friction
- lubrication, sealings, microtexturing
- biomimetics: superhydrophobic surfaces, super-adhesive surfaces
- continuously variable transmissions and toroidal traction drives
- mechanics of vibrations



Collaboration with peer reviewed international journals and conferences

- *Member of the Editorial Board* of Tribology International, Elsevier
- *Co-Editor in Chief* of the Open Mechanics Journal, Bentham Science Publishers Ltd until 2014
- *Member of the Editorial Board* of the journal ISRN Tribology The International Scholarly Research Network
- *Member of the Editorial Board* of Biomimetics - MDPI AG, Switzerland.
- *Guest Editor* of Current Nanoscience, Bentham Science Publishers Ltd
- *Senior Editor* of Journal of Nanoscience Letters, Cognizure.
- *Referee* of: (1) The Journal of the Mechanics and Physics of Solids, (2) Langmuir, (3) European Journal of Mechanics A/Solids, (4) Journal of Mechanics of Materials and Structures, (5) International Journal of Solids & Structures, (6) Lubrication Science, (7) Structural Engineering and Mechanics, (8) International Journal of Vehicle Design, (9) Mechanism and Machine Theory, (10) Journal of Engineering Mathematics, (11) Journal of Powertrain, (12) IEEE/ASME Transaction Mechatronics, (13) ASME Journal of Mechanical Design, (14) The Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, (15) Society of Automotive Engineers International, (16) Mechanics Research Communications, (17) EPL, (18) Journal of Physics Condensed Matter, (19) Applied Surface Science, (20) Journal of Testing and Evaluation, (21) Chinese Physics B, (22) Chinese Physics Letters, (23) Biomechanics and Modeling in Mechanobiology, (24) Soft Matter, (25) Theoretical & Applied Mechanics Letters, (26) Naturwissenschaften, (27) Journal of Zhejiang University-SCIENCE A, (28) Energy & Environmental Science, (29) Physical Review E, (30) Journal of the Royal Society Interface, (31) Physical Review Letters, (32) ASME IMECE congress, (33) Tribology Letters, (34) ASME Journal of Tribology, (35) Physics Letters A, (36) Advanced Engineering Materials, (37) Tribology International, (38) Advanced Functional Materials, (39) Microfluidics and Nanofluidics, (40) Proceedings of Royal Society A, (41) Journal of Materials Chemistry A, (42) Engineering Fracture Mechanics, (43) Beilstein Journal of Nanotechnology, (44) Materials - Open Access Materials Science Journal, (45) Journal of Applied Physics, (46) Interface Focus - Royal Society, (47) Wind Energy.
- *Track Organizer* of the World Tribology Congress 2013 for the Topic "Biomimetics". The congress has been held in Turin (Italy) Sept. 8-13, 2013.
- *Organizer of the Symposium* on "Superfici super-idrofobe e processi di nucleazione eterogenea" of the XXI congress of the Italian Association of Theoretical and Applied Mechanics (AIMETA 2013) 17-20 Sept. 2013, Turin - Italy.
- *Invited Member of the international programme committee* and also *Associate Editor* of the International Congress "CVT-Hybrid International Conference 2010 - CVT for the next decade" Maastricht (NL) on November 17-19, 2010.
- *Co-director of the scientific and organizing committee* of the Workshop on "Understanding Adhesion: from Nature to man-made devices" - FANAS - European Science Foundation, Alberobello (IT), 10-11 Maggio 2010
- *Director of the scientific and organizing committee* of the 2° workshop "Tribologia e industria", 18 - 19 Maggio 2010, I Facoltà Ingegneria - Politecnico di Bari (BARI)

Invited Contributions for Journals, Books and Conferences

- PUTIGNANO C., LE ROUZIC J., REDDYHOFF T., CARBONE G., DINI D., *A Theoretical and Experimental Study of Viscoelastic Rolling Contacts Incorporating Thermal Effects*, Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, **invited paper** doi: 10.1177/1350650114530681 (2014).
- CARBONE G., *Robust super-hydrophobicity of randomly rough isotropic and anisotropic surfaces: theory and experiments*, **invited lecture**, MMT-2014 Conference to be held in Ariel, Israel, July 28 - August 01, 2014.



- CARBONE G. *Predicting shape and contact angle of drops on superhydrophobic surfaces: an effective medium approach*, **invited lecture**, Superhydrophobicity, bubble stability, and heterogeneous nucleation, 25-27 June 2014 Faculty of Engineering, Sapienza Università di Roma via Eudossiana 18, Roma, Italia
- CARBONE G., *The Double Roller Full Toroidal Variator: A New Transmission For Fuel Saving*, **invited talk**, XII International CTI Symposium, December 2013, Berlin.
- CARBONE G., *Friction in viscoelastic materials: a numerical approach*, **invited talk**, XCIX Congresso della Società Italiana di Fisica, Trieste 23-27, settembre 2013
- AFFERRANTE L., CARBONE G., *The mechanisms of detachment of mushroom-shaped micro-pillars: from defect propagation to membrane peeling*, Macromolecular Reaction Engineering **7**, 609-615 **invited paper**, DOI: 10.1002/mren.201300125, (2013).
- CARBONE G., PIERRO E., *A review of adhesion mechanisms of mushroom-shaped microstructured adhesives*, Meccanica, **48** (8), 1819-1833, doi: 10.1007/s11012-013-9724-9 **Invited Paper**, (2013).
- CARBONE G., PIERRO E., GORB S., *Superlative adhesion of mushroom shaped microstructured surfaces*, **Invited Keynote Lecture**, XX Congresso AIMETA, Bologna – Italy (2011)
- CARBONE G., BOTTIGLIONE F., *The Super-hydrorepellence of fractal surfaces*, Joint ICTP-FANAS, **Invited Speaker** at the Joint ICTP-FANAS Conference on Trends In Nanotribology, 12 - 16 September 2011, International Center of Theoretical Physics (ICTP), Miramare, Trieste, Italy
- G. CARBONE, L. MANGIALARDI, *Contact mechanics, adhesion and friction of rubber materials*, **Invited Book Chapter** Editors R. Buzio & U. Valbusa in *Advances in Contact Mechanics: Implications for Materials Science, Engineering & Biology*, Research Signpost (2007).
- G. CARBONE: *Modelling belt and chain CVTs - traction, slip, and shift performance*, 2010 **Invited Keynote Lecture** International Conference on Continuously Variable and Hybrid Transmissions” MECC conference centre in the historic town of Maastricht, The Netherlands (NL), (Plenary-Lecture) November 17 – 19, 2010 - <http://www.cvt2010.org/downloads/key-note-presentations>
- G. CARBONE, E. PIERRO: *The influence of the fractal dimension of rough surfaces on the adhesion of elastic materials*, **Invited Paper** Journal of Adhesion Science and Technology, **26** (22), 2555-2570, doi:10.1163/156856111X623140, (2012)
<http://www.tandfonline.com/doi/abs/10.1163/156856111X623140>
- G. CARBONE, AND F. BOTTIGLIONE: *Contact mechanics of rough surfaces: a comparison between theories*, **Invited Paper** Meccanica, **46** (3), 557-565 DOI: 10.1007/s11012-010-9315-y, (2011)
- M. SCARAGGI, L. DE NOVELLIS, G. CARBONE, *EHL-Squeeze in High Loaded Contacts: The Case of Chain CVT Transmissions*, **Invited Paper** Strojniški vestnik - Journal of Mechanical Engineering, **56** (4), 253-260, (2010).
- M. SCARAGGI, G. CARBONE, *Mixed Lubrication in High Loaded Squeeze Contacts*, Technische Akademie Esslingen, **Invited Contributions** 17th International Colloquium Tribology, 19 – 21 January 2010.

Most Relevant Invited Lectures

- *Lecture on “Biomimetics: A powerful tool to design super-adhesives and ultra-hydrophobic self-cleaning surfaces”*, Università di Cassino e del Lazio Meridionale, Cassino-Italy, 18 Feb. 2013.
- *Lecture on “Contact Behavior of Bio-Inspired Microstructured Surfaces”*, University of Kiel, Germany 21-02-2012.
- *Lecture*, Carbone G., “*Tribological Aspects of Micro-Structured and Rough Surfaces*”, University of Modena – Reggio Emilia, 24 Feb. 2012.
- *Lecture*, Carbone G., “*Recent trends in wet, dry and lubricated contacts*”, Imperial College London, UK, Oct. 2011.
- *Lecture*, Carbone G., “*Modelling chain CVTs and Toroidal traction drives: traction, slip, and shift performance*”, University of Surrey, Guildford, UK, Oct. 2011.
- *Lecture*, Italian Institute of Technology - The Center for Biomolecular Nanotechnologies of IIT@UniLe, Title: *Tribological Aspects of Wet and Dry contact*, Dec. 2010.
- *Lecture*, Department of Mechanical and Structural Engineering - University of Trento (Italy). Title: *Contact mechanics, adhesion and friction of soft materials*, Sept. 2009



- *Lecture*, Department of Chemistry - University of Bari (Italy). Title: *Super-hydrophobic properties of wavy surfaces*, June 2008
- *Democritos Seminar*, International School for Advanced Studies (SISSA) - Italy, Soft Matter Sector. Title: *Adhesion and Friction of Rubber*, August 2005.
- 2005 - 2007 several *Lectures* have been given at the Eindhoven University of Technology on Continuously Variable Transmission.
- *Lecture* on "Tecnologie ispirate dalla natura: la BIOMIMETICA", ICAM 15/11/2012 seminario organizzato da ILO-Politecnico di Bari.

PhD projects coordinated by Dr. Carbone

- 2007 – PhD Project "Contact and friction modelling of randomly rough surfaces"
- 2007 – PhD Project "Traction and efficiency modelling of CVT transmissions"
- 2010 – PhD Project "Experimental investigation of defect propagation in viscoelastic materials"
- 2010 – PhD Project "Contact mechanics of rough elastic and viscoelastic solids"
- 2013 – PhD Project "Frictional properties of viscoelastic solids"
- 2013 – PhD Project "Vibrational behaviour of AFM cantilevers: effect of non-linear interactions and Brownian forces"

Undergraduate and Graduate projects

Dr. Carbone has supervised about 150 graduating projects (theses) of which about 50 at the undergraduate level and the remaining 100 at the graduate level.

Faculty assignments at Politecnico di Bari (Italy)

- He is *scientific coordinator* of the Tribology Laboratory (TribolAB) at the Department of Mechanical and Industrial Engineering (<http://tribolab.poliba.it>).
- He is the *scientific coordinator* of the Mechanical Transmission Laboratory at the Department of Mechanical and Industrial Engineering.
- 2009-2011 *component of the Committee* of the Ph.D. course in Mechanical and Biomechanical Engineering.
- 2009-2011 *component of the Committee* of the Ph.D. course in Machines Engineering.
- 2010-2013 *component of the Committee* of the Ph.D. course in Mechanical Engineering
- Since Nov. 2011 *component of the Committee* of the Ph.D. course in Mechanical and Managing Engineering.
- He is *component* of the research staff of the Centre of Excellence for Computational Mechanics (CEMeC) - Politecnico di BARI.
- 2007 – 2010 he has been *coordinator of the Socrates – Erasmus programme* – Mechanical Engineering Area.
- He is currently *delegate to the scientific research* nominated by the Rector of Politecnico di Bari

Other Assignments

- Since 2012 *reviewer* of project proposals submitted to the call *The Flagship Project "Factory of the Future"* funded by the Italian Ministry of Education, University and Research.
- Since April 2010 *component of the committee* of the Italian Ministry of Education , University and Research dedicated to the development of education programs of the Advanced Technical Schools (Istituti Tecnici Superiori - ITS).
- 2008 - 2009: *component of the committee* for the scientific evaluation of project of mobility between Italian and German researchers - PROGRAMMA VIGONI

Research Projects and Funding ID

Dr. Carbone has been *component* of the Research Unit of Bari in research projects funded by the Italian Government (PRIN) in 2000, 2002 and 2005 all focused on innovative mechanical transmissions. In 2007 he has been also involved in three projects funded by the Government of Regione Apulia – Italy.



Dr. Carbone has been also

- 2008-2011: *promoter* (with prof. P. Decuzzi being coordinator) of a research project within the programme Friction and Adhesion in Nanomechanical Systems (FANAS)/EUROCORES entitled “*An Integrated Framework for Engineering Bio-Mimetic Adhesive Interfaces (EBioAdI)*” funded for the period 2008-2011 by the European Science Foundation. Dr. Carbone *has been strictly involved* in the EBioAdI research activity which has involved 8 research institutions in 5 different European countries: (1) Juelich Research Centre (Germany), (2) Max-Planck-Institut für Metallforschung Munich (Germany), (3) ESPCI CNRS Paris (France), (4) Bilkent University - (Turkey), (5) Leibniz Institute for New Materials Saarbruecken (Germany), (6) Université de Mons-Hainaut Mons (Belgium), (7) Laboratory of Nanometallurgy ETH Zurich - Zurich (Switzerland), (8) Università Magna Graecia (Italy).
- 2007- 2010: *coordinator* of the research project on “Metal chain CVT efficiency and traction performances” funded by the dutch company Gear Chain Industrial B.V. Neunen – The Netherlands for a total amount of 66.000 €. The project involved also JTEKT – Corporation Japan.
- 2009-2011: *coordinator* of the Research Unit N. 3 within the project TRASFORMA Lab Network funded by the Government of Regione Apulia - Italy. The total funding was 2.500.000€ of which 490.000€ have been under the scientific responsibility of Dr. Carbone. The purpose of UR3 was to set up the Tribology LAB (TriboLAB). The TriboLAB has been completed in Sept. 2010 and comprise an Atomic Force Microscope, a Nanoidentation platform, a Microscratch instrumentation, a High Temperature pin-on-disc, ball-on-disk Tribometer, a Confocal Microscope, and a work-station for High Performances Parallel Computing comprising 24CPUs on the same motherboard.
- 2008-2011: *coordinator* of the research unit on *Tribology of surfaces* of the research project “Innovative models for Mechatronic systems”. The total funding under the responsibility of Dr. Carbone was of 130.000€
- 2010: *coordinator* of the research project on “*Friction and Wear of Ceramic and Composite Materials*”, funded by General Electric – Nuovo Pignone – Italy for a total amount of 37.000€ + VAT

TEACHING AT UNIVERSITY


Academic Year 1998 – 1999

- Tutor of “*Mechanics of Machines*” and “*Vehicle Dynamics*”, Degree Course in Mechanical Engineering – Politecnico di Bari
- 20 hours teaching of “*Fundamental of Theoretical and Applied Mechanics*” Engineering Faculty – Degree Course in Electrical Engineering – Politecnico di Bari.

Academic Year 1999 – 2000

- Tutor of “*Mechanics of Machines*” and “*Vehicle Dynamics*”, Degree Course in Mechanical Engineering – Politecnico di Bari
- Tutor of “*Fundamentals of Mechanics of Machines*” Diploma Course in Mechanical Engineering
- 20 hours teaching of “*Fundamentals of Theoretical and Applied Mechanics*” Engineering Faculty – Degree Course in Industrial Engineering – Politecnico di Bari.

Academic Year 2000 – 2001

- Tutor of “*Mechanics of Machines*” and “*Vehicle Dynamics*”, Degree Course in Mechanical Engineering – Politecnico di Bari
 - Tutor of “*Fundamentals of Mechanics of Machines*” Diploma Course in Mechanical Engineering
 - 40 hours teaching of “*Fundamental of Theoretical and Applied Mechanics*” Engineering Faculty – Degree Course in Industrial Engineering – Politecnico di Bari.
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Academic Year 2002 – 2003

- Course of *Applied Mechanics I*, Industrial Engineering Degree (ECTS 6) - Politecnico di Bari.

Academic Year 2003 – 2004

- Course of *Fundamentals of Tribology*, M.Sc. Degree Course in Engineering of Materials – Faculty of Engineering– Università di Lecce (C. U. 3);
- Course of *Mechanics of Machines I*, Industrial Engineering Degree (ECTS 6) - Politecnico di Bari.
- 12 hours teaching course on *Braking Systems – Second Level Master “Experts Vehicle Engineering”* – Università di Lecce;

Academic Year 2004 – 2005

- Course of *Applied Mechanics I*, Industrial Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Fundamentals of Tribology*, M.Sc. Degree Course in Engineering of Materials – Faculty of Engineering– Università di Lecce (ECTS 3);

Academic Year 2005 – 2006

- Course of *Mechanics of Machines I*, Industrial Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Vehicle Dynamics and Simulation*, M.Sc. Degree Course in Mechanical Engineering — Politecnico di Bari (ECTS 6).

Academic Year 2006 – 2007

- Course of *Mechanics of Machines I*, Industrial Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Vehicle Dynamics and Simulation*, M.Sc. Degree Course in Mechanical Engineering — Politecnico di Bari (ECTS 6).
- Course of *Functional Design of Machines*, M.Sc. Degree Course in Mechanical Engineering — Politecnico di Bari (ECTS 6).

Academic Year 2007 – 2008

- Course of *Mechanics of Machines I*, Industrial Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Vehicle Dynamics and Simulation*, M.Sc. Degree Course in Mechanical Engineering — Politecnico di Bari (ECTS 6).
- Course of *Functional Design of Machines*, M.Sc. Degree Course in Mechanical Engineering — Politecnico di Bari (ECTS 6).

Academic Year 2008 – 2009

- Course of *Mechanics of Machines I*, Industrial Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Vehicle Dynamics and Simulation*, M.Sc. Degree Course in Mechanical Engineering — Politecnico di Bari (ECTS 6).
- Course of *Functional Design of Machines*, M.Sc. Degree Course in Mechanical Engineering — Politecnico di Bari (ECTS 6).

Academic Year 2009 – 2010

- Course of *Mechanics of Machines I*, Mechanical Engineering Degree (C.F.U. 9) - Politecnico di Bari.
- Course of *Vehicle Dynamics and Simulation*, M.Sc. Degree Course in Mechanical Engineering — Politecnico di Bari (ECTS 6).

Academic Year 2010 – 2011



- Course of *Mechanics of Machines I* , Mechanical Engineering Degree (C.F.U. 9) - Politecnico di Bari.
- Course of *Vehicle Dynamics and Simulation*, M.Sc. Degree Course in Mechanical Engineering — Politecnico di Bari (ECTS 6).
- Course of *Elements of Tribology*, M.Sc. Degree in Material Science (ECTS 3), Università di Bari

Academic Year 2011 – 2012

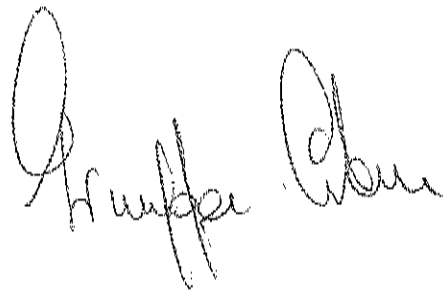
- Course of *Mechanics of Machines II*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Elements of Tribology*, PhD Course in Mechanical Engineering (ECTS 3), Politecnico di Bari

Academic Year 2012 – 2013

- Course of *Mechanics of Machines II*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Tribology*, PhD Course in Mechanical Engineering (ECTS 6), Politecnico di Bari

Academic Year 2013 – 2014

- Course of *Mechanics of Machines II*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Mechanics of Machines I – module I*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Tribology*, PhD Course in Mechanical Engineering (ECTS 6), Politecnico di Bari
- Course of *Aircraft Dynamics and Simulation*, M.Sc. Degree Course in Mechanical Engineering — Politecnico di Bari (ECTS 6).



PUBLICATIONS

International Archive Journal

1. CARAMIA G., CARBONE G., DE PALMA P., *Hydrodynamic lubrication of micro-textured surfaces: Two dimensional CFD-analysis*, Tribology International, **88**, 162–169, DOI: 10.1016/j.triboint.2015.03.019, (2015).
2. BOTTIGLIONE F., DI MUNDO R., SORIA L., CARBONE G., *Wenzel to Cassie Transition in Superhydrophobic Randomly Rough Surfaces*, Nanoscience and Nanotechnology Letters **7**(1), 74-78, doi: 10.1166/nml.2015.1922, (2015)
3. BOTTIGLIONE F., CARBONE G., *An effective medium approach to predict the apparent contact angle of drops on super-hydrophobic randomly rough surfaces*, Journal of Physics: Condensed Matter, **27** (1), 015009 doi: 10.1088/0953-8984/27/1/015009, (2015)
4. PUTIGNANO C., CARBONE G., *A review of boundary elements methodologies for elastic and viscoelastic rough contact mechanics*, Physical Mesomechanics, **17** (4), pp 321-333, DOI: 10.1134/S1029959914040092, (2014)
5. ANCONA A., CARBONE G., DE FILIPPIS M., VOLPE A., LUGARÀ P. M., *Femtosecond laser full and partial texturing of steel surfaces to reduce friction in lubricated contact*, Adv. Opt. Techn., doi: DOI 10.1515/aot-2014-0045 (2014)
6. PUTIGNANO C., AFFERRANTE L., MANGIALARDI L., CARBONE G., *Equilibrium states and stability of pre-tensioned adhesive tapes*, Beilstein Journal of Nanotechnology, **5** (1), 1725-1731, DOI:10.3762/bjnano.5.182, (2014)
7. PUTIGNANO C., AFFERRANTE L., CARBONE G., DEMELIO G., *Double peeling of elastic pre-tensioned tapes*, Fracture and Structural Integrity, **30**, 237--243, DOI: 10.3221/IGF-ESIS.30.30, (2014).
8. DI MUNDO R., BOTTIGLIONE F., CARBONE G., *Cassie state robustness of plasma generated randomly nano-roughsurfaces*, Applied Surface Science, **316**, 324–332, DOI: /10.1016/j.apsusc.2014.07.184, (2014)
9. MENGA N; PUTIGNANO C; DEMELIO G P; CARBONE G, *The sliding contact of a rigid wavy surface with a viscoelastic half-space*, Proceedings of The Royal Society of London Series A - Mathematical Physical And Engineering Sciences, **470** (2169), 20140392, doi: 10.1098/rspa.2014.0392, (2014).
10. DENING K., HEEPE L., AFFERRANTE L., CARBONE G., GORB S. N., *Adhesion control by inflation: implications from biology to artificial attachment device*, Applied Physics A: Material Science & Processing, **116** (2), 567-573, doi: 10.1007/s00339-014-8504-2 (2014).
11. PUTIGNANO C., LE ROUZIC J., REDDYHOFF T., CARBONE G., DINI D., *A Theoretical and Experimental Study of Viscoelastic Rolling Contacts Incorporating Thermal Effects*, Proceedings of the Institution of Mechanical Engineers. Part J: Journal of Engineering Tribology, 1350650114530681, doi: 10.1177/1350650114530681 (2014).
12. SCARAGGI M., MEZZAPESA F. P., CARBONE G., ANCONA A., SORGENTE D., LUGARÀ P. M., *Minimize friction of lubricated laser-microtextured-surfaces by tuning microholes depth*, Tribology International, **75**, 123, DOI: 10.1016/j.triboint.2014.03.014, (2014).
13. CARBONE G., PUTIGNANO C., *Rough viscoelastic sliding contact: theory and experiments*, Physical Review E, **89**, art. 032408, doi: 10.1103/PhysRevE.00.002400, (2014)
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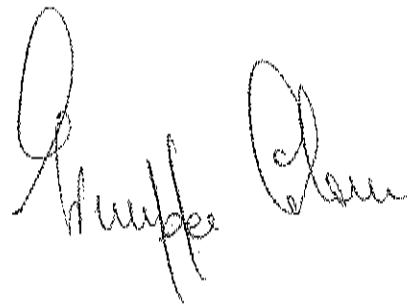


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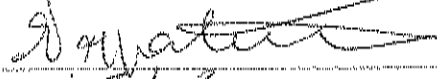
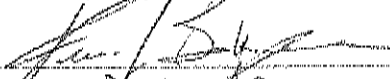



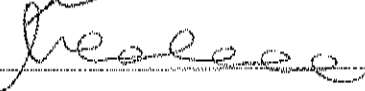


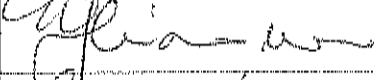


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8-5-2015



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