

# CURRICULUM VITAE

English Version

**Prof. Ing. Giuseppe CARBONE - PhD**

*Full Professor of Applied Mechanics*

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## Bibliometric Indicators

Scopus H-index: 33

Scopus Contemporary H-index: 21

Scopus Total Citations: 3570

Number of paper indexed by Scopus: 162 of which 131 on international archive journals.

Web of Science H-Index: 30

Web of Science Contemporary H-Index: 20

Web of Science Total Citations: 3053

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[Orcid ID](#)

[Web of Science Researcher ID](#)

[Scopus Researcher ID](#)

[Google scholar:](#)

[ResearchGate](#)

## GENERAL INFORMATION

### Place of birth and age

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

### Academic Positions

- *Full Professor* since 10-Sept-2016.
- From 27 April 2012 to 09 September 2016 *Associate Professor* at the School 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. Prof. 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 Tribology Technical Committee of dell’IFTOMM International Federation for the Promotion of Mechanism and Machine Science;
- Currently Member of the Steering Committee of the Italian Association of Tribology (AIT)
- Currently Member of the Italian Association of Theoretical and Applied Mechanics (AIMETA)

### Research Experience and collaboration with other research institutions

- Since 16<sup>th</sup> Nov. 2017 he is *Visiting Professor* at the University of North Texas
- Since 24<sup>th</sup> Feb. 2015 he is *Permanent Academic Visitor* at Imperial College London.
- Since 4<sup>th</sup> Aug. 2015 he is *Research Associate* at the *Institute of Photonics and Nanotechnologies of the National Council of Research, U.O.S. Bari - Physics Department M. Merlin – Bari, Italy.*
- He has been *external examiner* for for Francesc Pérez Ràfols’ PhD-thesis dissertation on the 2<sup>nd</sup> of February 2018
- He is currently *external referee* for the thesis evaluation of the PhD Student SIMONE GHIO (supervisors prof. Nicola Pugno - UNITN and dr. Maurizio Boscardin - FBK). The title of the PhD Thesis is: Design and Microfabrication of Multifunctional Bio-inspired Surfaces.
- In July 2017 he has been *member of the PhD examining committee* for the PhD dissertation of the PhD student Solhjoo, S. - P268670, Title of the thesis: Nanotribology investigations with classical molecular dynamics.
- Oct. 2015 – Dec. 2015 he has been *member of the PhD committee* for the assessment of the PhD thesis “Modélisation du contact entre matériaux hétérogènes: application au contact aube/disque” at the Institute National Des Sciences Appliquée, Lyon – France.
- In January 2015 he has been *member of the PhD committee* for the assessment of the the PhD thesis “Advanced CVT Modeling and Control” at the Technische Universiteit Eindhoven, Eindhoven– Paesi Bassi.
- 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.
- In May 2014 he has been *Examiner* of a PhD dissertation entitled “Local rheology of lubricants in the elastohydrodynamic regime” at Imperial College London.
- 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, the Polytechnic of Bari and the Polytechnic of Milano.
- 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

#### Main research areas

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

#### Collaboration with peer reviewed international journals and conferences

- *Founding Associate Editor* of the *Tribology Section* of the journal *Frontiers in Mechanical Engineering*
- *Associate Editor* of the journal *Chaos Solitons & Fractals*, IF. 2.213, Elsevier.
- *Founding Associate Editor* of the *Tribology Section* of the journal *Frontiers in Mechanical Engineering*.
- *Guest Editor* special issue *Adhesion, Friction and Lubrication of Viscoelastic Materials*, della rivista *Lubricants*, MDPI AG, Klybeckstrasse 64, 4057 Basel, Switzerland.
- *Guest Editor* special issue *Anti-Adhesive Surfaces*, della rivista *Coatings* IF. 2.350, MDPI AG, Klybeckstrasse 64, 4057 Basel, Switzerland.
- *Guest Editor* special issue *Biomimetic surfaces*, della rivista *Technologies*, MDPI AG, Klybeckstrasse 64, 4057 Basel, Switzerland.
- *Guest Editor* of the special issue *Viscoelastic Solids: Mechanical Behaviour, Contact Mechanics, Fracture and Wear*, of *Applied Science* IF. 1.689, MDPI AG, Klybeckstrasse 64, 4057 Basel, Switzerland.
- *Guest Editor* of special issue *Micro- and Nano-Structured Bio-Inspired Surfaces*, of the journal *Biomimetics* MDPI AG, Klybeckstrasse 64, 4057 Basel, Switzerland.
- *Member of the Editorial Board* of *Tribology International*, IF 2.9, 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.

- *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, (48) Journal of Micromechanics and Microengineering, (49) Physical Review X, (50) Scientific Reports - Nature, (51) Proceedings of iMechE Part C: Journal of Mechanical Engineering Science, (52) The Journal of Chemical Physics, (53) ACS Nano, (54) Bioinspiration & Biomimetics, (55) Optics and Laser Technology, (56) Acta Mechanica Sinica, (57) Journal of Theoretical and Applied Physics, (58) Smart Materials and Structures, (59) Journal of Engineering Manufacturing, (60) Chaos Solitons and Fractals, (61) Material and Design, (62) Computer Methods in Biomechanics and Biomedical Engineering, (63) Mechanics of Materials, (64) Science Advances, (65) Scientific Reports.
- 2019 – *Organizer* of the Summer School on “Collective intelligence” funded by MUR under the Program of “Department of Excellence” of the Department of Mechanics Mathematics and Management, Polytechnic University of Bari - Italy,
- 2017 – *Chair* of the Second Editions of the *Tribology Summer School* of the Italian Association of Tribology Salerno – Italy 28/8/2017 - 01/9/2017.
- 2017 - *Chair* of the Mini-Symposium “*Rivestimenti per applicazioni tribologiche: modellazione e caratterizzazione*”, AIMETA 2017 Conference, Salerno 4-7 settembre 2017.
- *Track Organizer* of the World Tribology Congress 2013 for the Topic “Biomimetics”. The congress has been held in Turin (Italy) Sept. 8-13, 2013.
- *Chair* 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)

#### **Reviewer of research programs:**

- Currently *member of the panel of the reviewers* of the European Research Council for the evaluation and monitoring of the ERC projects.
- Currently *member of the panel of the reviewers* of the European Commission for the evaluation and monitoring of the H2020 projects.
- Currently *member of the panel of the scientific experts* of the Italian Ministry of University and Education.
- Currently *peer-reviewer* of the *Italian research evaluation VQR 2011-2014*.
- Currently *chartered reviewer* of the Italian Ministry of Education and Research.
- 2015-2017 *reviewer* of research proposal for the BSF (United States-Israel Binational Science Foundation)
- 2014 *reviewer* of research proposal per la IWT - the Agency for Innovation by Science and Technology in Flanders ( <http://www.iwt.be/english/welcome> )
- Since 2012 -2014 *reviewer* of research proposals submitted to the call *The Flagship Project “Factory of the Future”* funded by the Italian Ministry of Education, University and Research.
- 2008 - 2010: *component of the committee* for the scientific evaluation of project of mobility between Italian and German researchers - PROGRAMMA VIGONI

#### **Most Relevant Invited Lectures, Invited Papers and Awards**

- 2019 - *Advanced Materials Awards* of the International Association of Advanced Materials – Orlando (FL) – USA, 9-13 Dec. 2019.
- 2018 - *Lecture on the “Emergence of Collective intelligence in Groups”*, Center of Non Linear Science, Department of Physics, University of North Texas, Novembre 13<sup>th</sup>, 2018.
- 2018 – Invited to give a *Keynote Lecture: CARBONE G.: Stepless Transmissions Modelling and Applications*, at the OTEKON 2018, the 9<sup>th</sup> International Automotive Technologies Congress, 7-8 May 2018 – Sheraton Hotel – Bursa – Turkey.
- 2017 – *Keynote Lecture: CARBONE G.: Modelling contact mechanics of rough surfaces*, Micro/Nanoscale Models for Tribology, Lorentz Center, 30 Jan.– 3 Feb. 2017, Leiden (NL).
- 2016 – *Keynote Lecture: CARBONE G., Criticality and collective intelligence in human groups*, The Network Science of Squads, December 3-5, 2016, Denton (USA).
- 2016 – *Invited Talk: YILDIZ A., PICCININNI A., BOTTIGLIONE F., CARBONE G., Testing the CMM model of chain-CVT transmissions in steady-state and shifting conditions*, International Conference “CVT in automotive applications - Set screws for better efficiency”, Friedrichshafen (Germania) 21-22 June 2016.
- 2015 – *Invited Talk: CARBONE G., Contact, lubrication and friction of microstructured and rough surfaces*, Bari Automotive Summer School, 25 settembre 2015, Bari – Italy.
- 2015- *Invited paper: 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/nnl.2015.1922, (2015)
- 2014 – *Invited paper: 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, doi: 10.1177/1350650114530681 (2014).
- 2014 – *Invited lecture: CARBONE G., PIERRO E. CONTURSI T., Superior adhesion of micro-structured surfaces made of a regular array of mushroom-shaped micropillars*, BIT's 3rd

Annual World Congress of Advanced Materials-2014 (WCAM-2014), Chongqing, China, 6-8 June, 2014.

- 2014 - *Invited lecture*: CARBONE G. *Predicting shape and contact angle of drops on superhydrophobic surfaces: an effective medium approach*, Superhydrophobicity, bubble stability, and heterogeneous nucleation, 25-27 June 2014 Faculty of Engineering, Sapienza Università di Roma via Eudossiana 18, Roma, Italia
- 2013 - *Invited Talk*: CARBONE G., *The Double Roller Full Toroidal Variator: A New Transmission For Fuel Saving*, XII International CTI Symposium, December 2013, Berlin.
- 2013 - *Invited Talk*: CARBONE G., *Friction in viscoelastic materials: a numerical approach*, XCIX Congresso della Società Italiana di Fisica, Trieste 23-27, settembre 2013
- 2013 - *Invited Paper*: 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, DOI: 10.1002/mren.201300125, (2013).
- 2013 - *Invited Paper*: 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, (2013).
- 2012 - *Invited Paper*: G. CARBONE, E. PIERRO: *The influence of the fractal dimension of rough surfaces on the adhesion of elastic materials*, Journal of Adhesion Science and Technology, **26** (22), 2555-2570, doi:10.1163/156856111X623140, doi: 10.1163/156856111X623140, (2012)
- 2011 - *Invited Keynote Lecture*: CARBONE G., PIERRO E., GORB S., *Superlative adhesion of mushroom shaped microstructured surfaces*, XX Congresso AIMETA, Bologna – Italy (2011)
- 2011 - *Invited Talk*: CARBONE G., BOTTIGLIONE F., *The Super-hydrorepellence of fractal surfaces*, Joint ICTP-FANAS, at the Joint ICTP-FANAS Conference on Trends In Nanotribology, 12 - 16 September 2011, International Center of Theoretical Physics (ICTP), Miramare, Trieste, Italy
- 2010 - *Invited Plenary Lecture*: G. CARBONE: *Modelling belt and chain CVTs - traction, slip, and shift performance*, 2010 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>
- 2010 - *Invited Paper*: G. CARBONE, AND F. BOTTIGLIONE: *Contact mechanics of rough surfaces: a comparison between theories*, Meccanica, **46** (3), 557-565 DOI: 10.1007/s11012-010-9315-y, (2011)
- 2010 - *Invited Paper*: M. SCARAGGI, L. DE NOVELLIS, G. CARBONE, *EHL-Squeeze in High Loaded Contacts: The Case of Chain CVT Transmissions*, Strojniški vestnik - Journal of Mechanical Engineering, **56** (4), 253-260, (2010).
- 2010 - *Invited Contribution*: M. SCARAGGI, G. CARBONE, *Mixed Lubrication in High Loaded Squeeze Contacts*, Technische Akademie Esslingen, 17th International Colloquium Tribology, 19 - 21 January 2010.
- 2007 - *Invited Book Chapter*: G. CARBONE, L. MANGIALARDI, *Contact mechanics, adhesion and friction of rubber materials*, Editors R. Buzio & U. Valbusa in *Advances in Contact Mechanics: Implications for Materials Science, Engineering & Biology*, Research Signpost (2007).

#### Lectures given at Research Institutions

- 2015 - *Lecture* on “Contact mechanics and friction of viscoelastic materials” Università di Napoli “Federico II”, 12 Nov. 2015.

- 2013 - *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.
- 2012 - *Lecture on “Contact Behavior Of Bio-Inspired Microstructured Surfaces”*, University of Kiel, Germany 21-02-2012
- 2012 - *Lecture, Carbone G., “Tribological Aspects of Micro-Structured and Rough Surfaces”*, University of Modena – Reggio Emilia, 24 Feb. 2012.
- 2011 - *Lecture, Carbone G., “Modelling chain CVTs and Toroidal traction drives: traction, slip, and shift performance”*, University of Surrey, Guildford, UK, Oct. 2011.
- 2011 - *Lecture, Carbone G., “Recent trends in wet, dry and lubricated contacts”*, Imperial College London, UK, Oct. 2011.
- 2010 - *Lecture, Carbone G. “Tribological Aspects of Wet and Dry contacts”* Italian Institute of Technology- The Center for Biomolecular Nanotechnologies of IIT@UniLe, December 2010.
- 2009 - *Lecture, Carbone G.: “Contact mechanics, adhesion and friction of soft materials”*, Università di Trento September 2009
- 2008 - *Lecture, Carbone G.: “Super-hydrophobic properties of wavy surfaces”*, Chemistry Department Università di Bari, June 2008
- 2005 - *Democritos Seminar Carbone G. “Adhesion and Friction of Rubber”*, Scuola Superiore di Studi Avanzati di Trieste (SISSA), August 2005.
- 2005-2008 – several *Lectures at the Eindhoven University of Technology* focusing on *V-belt CVTs and Toroidal traction drives*.

PhD projects coordinated by prof. Carbone

- 2020 – PhD Project *“Predictive Maintenance of Marine Engines”* – funded by Isotta Fraschini.
- 2020 – PhD Project *“Lubrication and friction in viscoelastic bearings”* – in collaboration with the AC2T - Austrian Excellence Center for Tribology.
- 2019 – PhD Project *“Acoustic transport of microparticles in fluids”*
- 2017 – PhD Project *“Modelling fluid-structure vibroacoustic response of a diapason for gas detection sensors”*
- 2016 – PhD Project *“Teams as complex adaptive systems: Collective Intelligence and Adaptive Behaviors”*
- 2016 – PhD Project *“Fabrication and Frictional Characterization laser textured micro-textured surfaces”*
- 2014 – PhD Project *“Dynamics of complex system from energy harvesting to collective intelligence.”*
- 2013 – PhD Project *“Numerical simulation of hydrodynamic lubrication in micro-textured surfaces.”*
- 2013 – PhD Project *“Adhesion and friction in periodic contacts of elastic and viscoelastic layers.”*
- 2013 – PhD Project *“Mechanical behavior of atomic force microscope for the characterization of extremely soft materials”*
- 2012 – PhD Project *“Nanotechnologies for the building envelope Nanotechnologies for the Building Envelope: Investigation and Evaluation of Structural Color of Aluminum doped Zinc Oxide (AZO) and Aluminum doped Zinc Oxide Tungsten Trioxide (AZO/WO3) Thin Films on Stainless Steel AISI 316L and Titanium ASTM CP”*
- 2010 – PhD Project *“Contact mechanics of rough elastic and viscoelastic solids”*
- 2010 – PhD Project *“Experimental investigation of defect propagation in viscoelastic materials”*
- 2007 – PhD Project *“Contact and friction modelling of randomly rough surfaces”*

- 2007 – PhD Project “*Traction and efficiency modelling of CVT transmissions*”

Most of his PhD graduated scholars have gain outstanding positions both in Academia, as researchers and/or professors, and Industries as top level managers.

### **Undergraduate and Graduate projects**

Dr. Carbone has supervised about 250 graduating projects (theses).

### **Institutional assignments**

- Since October 2018 he is *Head of the Department of Mechanics, Mathematics and Management* at Politecnico di Bari - Italy
- Oct. 2017 – Oct. 2018 he have been *Delegate of the Rector* for the Third Mission of Politecnico di Bari
- Since Aprile 2016 he is *Component* of the Interinstitutional gruppo for the definition of a innovative proposal for a new Regione Apulia law in the field of High Education and Righth to Academic Education.
- Jun. 2016 – Oct. 2018 he has been *Component* of the commission of the statute of Politecnico di Bari.
- 2015 - 2018 *Delegate of the Rector* for the *Analysis and Optimization of the Strategic Indicators of the Politecnico di Bari*
- Since 2015 *Member of the Steering Committee* of the Doctorate School at Politecnico di Bari
- 2013 – 2018 *Delegate of the Rector* for the Scientific Research and the Technology Transfer
- Since Nov. 2011 *component of the Committee* of the Ph.D. course in Mechanical and Managing Engineering.
- Since 2010 - he is *Scientific Coordinator* of the Tribology Laboratory (TriboLAB) at the Department of Mechanical and Industrial Engineering (<http://tribolab.poliba.it>).
- 2010-2013 *component of the Committee* of the Ph.D. course in Mechanical 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.
- 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.

### **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.

He obtained fundings for the following projects:

- 2020 – *Scientific Coordinator* of the research contact with the *Austrian Excellence Center for Tribology* under the Austrian project "InTribology" anchored in the COMET-Program for 2020-2024 on the theme “Modeling Viscoelastic Tribological Contacts”, budget Politecnico di Bari 300.000.
- 2019 – *Scientific Coordinator* of the PoliBA Unit of Research for the project PON: “EXTREME - Tecnologie innovative per motori ad accensione comandata estremamente efficienti”, Acronimo EXTREME, Codice Proposta ARS01\_00849, budget 1.165k€.



- 2019 – *Principal Investigator* of the project *FASTire (Foam Airless Spoked Tire): Smart Airless Tyres for Extremely-Low Rolling Resistance and Superior Passengers Comfort*, funded by the Italian Ministry of University and Research, under the programme PRIN for a total budget of 437k€
- 2018 – *scientific coordinator* of the project AROL, “Study of the viscoelastic behaviour of the bottle cap during screwing and unscrewing”, 100 k€ + VAT
- 2018 – *scientific coordinator* of the project “*Study of the frictional properties of oil and gasoline lubricated microtextured surfaces*” funded by Bosch for a total budget of 50k€ + VAT
- 2018 – *scientific coordinator* of the Poliba research unit of the project OMNIA AGV funded by the Apulia Region, budget of the research unit 160k€
- 2016 – *scientific coordinator* of the project ESI, “Studio reologico finalizzato alla modellazione dei fenomeni d’attrito, usura e delle fughe, che si sviluppano nel caso di funzionamento di valvole”, 20k€ + VAT
- 2016 – *scientific coordinator* of the project ARGOTRACTORS “Attività di modellazione di una linea di trasmissione con variazione continua di velocità (CVT) per trattoria agricola di tipo frutteto”, 80k€ + VAT
- 2016 – *scientific coordinator* of the project “Fabbricazione e caratterizzazione del comportamento tribologico di superfici microstrutturate al laser”, funded by Bosch for a total budget 40k€ + VAT
- 2015 – He is *scientific coordinator* of the research unit CNR-Politecnico di Bari–Università within the European Project “Marie Skłodowska-Curie” entitled “LASER4FUN”. Il progetto has received fundings for 3.5M€ and involves 10 research units. The funding assigned to the Bari research unit is of 252k€.
- 2012 – *scientific coordinator* of a research unit of the research project "INNOVHEAD -" PON Ricerca e Competitività 2007-2013, funding assigned at the research unit: 193000€
- 2011 – *scientific coordinator* of a research unit of the project "Elettronica di controllo, sistema d'iniezione, strategie di combustione, sensoristica avanzata e tecnologie di processo innovativi per motori diesel a basse emissioni inquinanti", PON Ricerca e Competitività 2007-2013, funding assigned at the research unit: 93000€
- 2010 - *scientific coordinator* of the research project “Caratterizzazione tribologica di materiali compositi e ceramici”. The project has been funded by Nuovo Pignone and received 37000 €.
- 2009 – *scientific coordinator* of a research unit of the Industrial Research Project “Modelli Innovativi per Sistemi Meccatronici”, APQ Ricerca III Atto Integrativo della Regione Puglia. The research unit has been funded with 130.000 € gestiti dall’unità di ricerca.
- 2008 – *scientific coordinator* of a research unit within the research project of Regione Puglia (Bollettino Ufficiale della Regione Puglia -12/02/2008) entitled “Tecniche di Ricerca Avanzate per lo Studio e l’implementazione della FORMAtura con mezzi flessibili di Leghe Leggere tramite l’utilizzo di superfici ad attrito controllato e lamiere saldate di differente spessore (TRASFORMA)” The research unit has been granted with a budget of 500 k€.
- 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

## Results obtained in the Technological Transfer

- Since 31 March 2008 he has been Founding Member of the Spin-Off del Politecnico di Bari "PoliMech s.r.l. - Strutture Meccaniche Innovative". The field of activity of PoliMech is mainly focused on the technological transfer obtained as a results of research activities carried out in the field of tribology, mechanical transmissions, dynamics and vibrations. In this respect, it is worth to mention the following collaborations with:
  1. Bosch Diesel Technologies and Braking Systems S.p.A. (Bosch Tecnologie Diesel e Sistemi Frenanti S.P.A.). A new una methodology and related software have been developed to identify defects on the surface of shaft.
  2. Tre Tozzi Renewable Energy S.P.A. A new methodology has been developed as well as the related software to analyse the risk of impact of wind blade fragments. This activity ha also deserved the following publication: CARBONE G., AFFERRANTE L., A novel probabilistic approach to assess the blade throw hazard of wind turbines, *Renewable Energy*, 51, 474-481 doi: 10.1016/j.renene.2012.09.028, (2013).
  3. ARGO Tractors. The activity has been focused on the analysis of the mechanical efficient and power flows of IVT (infinitely variable transmission) for agricultural vehicles.

# 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.

## 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).

#### **Academic Year 2014 – 2015**

- 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).

#### **Academic Year 2015 – 2016**

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

#### **Academic Year 2016 – 2017**

- Course of *Mechanics of Machines II*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari in Bari.
- Course of *Mechanics of Machines II* , M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari in Taranto
- Course of *Analytical Dynamics*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari in Bari.

#### **Academic Year 2017 – 2018**

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

#### **Academic Year 2018 – 2019**

- Course of *Mechanics of Machines II*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Rigid Body Dynamics*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Tribology*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari.

### Academic Year 2019 – 2020

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

### Academic Year 2020 – 2021

- Course of *Mechanics of Machines II*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari.
- Course of *Mechanical System Dynamics*, M.Sc. Engineering Degree (ECTS 9) - Politecnico di Bari.
- Course of *Tribology*, M.Sc. Engineering Degree (ECTS 6) - Politecnico di Bari.

## PUBBLICAZIONI SCIENTIFICHE

### PUBLICATIONS

#### International Archive Journal

1. MENGA N., CARBONE G., DINI D., *Exploring the effect of geometric coupling on friction and energy dissipation in rough contacts of elastic and viscoelastic coatings*, Journal of the Mechanics and Physics of Solids, **148**, 104273, 2021.
2. TOMASELLI M., BOTTIGLIONE F., LINO P., CARBONE G., *NuVinci drive: Modeling and performance analysis*, Mechanism and Machine Theory **150**, 103877, doi: 10.1016/j.mechmachtheory.2020.103877, (2020).
3. PIERRO E., AFFERRANTE L., CARBONE G., *On the peeling of elastic tapes from viscoelastic substrates: Designing materials for ultratough peeling*, Tribology International **146**, 106060, doi: 10.1016/j.triboint.2019.106060, (2020)
4. DI MUNDO R., LABIANCA C., CARBONE G., NOTARNICOLA M., *Recent Advances in Hydrophobic and Icephobic Surface Treatments of Concrete*, Coatings **10** (5), 449, doi: 10.3390/coatings10050449, (2020).
5. PIERRO E., D'ANGOLA A., CARBONE G., *Road vehicles travelling with time-dependent speed: theoretical study on the directional stability*, Vehicle System Dynamics, 1-13, doi: 10.1080/00423114.2020.1741654 (2020)
6. MENGA N., DINI D., CARBONE G., *Tuning the periodic V-peeling behavior of elastic tapes applied to thin compliant substrates*, International Journal of Mechanical Sciences, **170**, 105331, doi: 10.1016/j.ijmecsci.2019.105331, (2020);
7. CICALA G., MAGALETTI V., CARBONE G., SENESI G.S., *Load sensitive superhardness of nanocrystalline diamond coatings*, Diamond and Related Materials **101**, 107653, doi: 10.1016/j.diamond.2019.107653, (2020);
8. GIANNOCCARO I., GALESIC M., MASSARI G.F., BARKOCZI D., CARBONE G., *Search behavior of individuals working in teams: A behavioral study on complex landscapes*, Journal of Business Research, **118**, 507-516, doi: 10.1016/j.jbusres.2019.10.045 (2020)
9. MENGA N., BOTTIGLIONE F., CARBONE G., *The nonlinear dynamic behavior of a Rubber-Layer Roller Bearing (RLRB) for vibration isolation*, Journal of Sound and Vibration **463**, 114952, doi: 10.1016/j.jsv.2019.114952, (2019);

10. DI MUNDO R., DILONARDO E., NACUCCHI M., CARBONE G., NOTARNICOLA M., *Water absorption in rubber-cement composites: 3D structure investigation by X-ray computed-tomography*, Construction and Building Materials **228**, 116602, doi: 10.1016/j.conbuildmat.2019.07.328.
11. MENGA N., CARBONE G., DINI D., *Corrigendum to “Do uniform tangential interfacial stresses enhance adhesion?” [Journal of the Mechanics and Physics of Solids 112 (2018) 145–156]*, Journal of the Mechanics and Physics of Solids, **133**, 103744, doi: 10.1016/j.jmps.2019.103744;
12. MENGA N., BOTTIGLIONE F., CARBONE G., *The Indentation Rolling Resistance in Belt Conveyors: A model for the viscoelastic friction*, Lubricants **7**, 58, doi:10.3390/lubricants7070058, (2019).
13. AFFERRANTE L., PUTIGNANO C., MENGA N., CARBONE G., *Friction in rough contacts of linear viscoelastic surfaces with anisotropic statistical properties*, European Physical Journal E, **42** (6), 80, doi: 10.1140/epje/i2019-11844-5, (2019)
14. PIERRO E., BOTTIGLIONE F., CARBONE G., *Thermal Fluctuations and Dynamic Modeling of a dAFM Cantilever*, Advanced Theory and Simulations, **2** (5), 1900004, doi: 10.1002/adts.201900004, (2019).
15. PUTIGNANO C., MENGA N., AFFERRANTE L., CARBONE G., *Viscoelasticity induces anisotropy in contacts of rough solids*, Journal of the Mechanics and Physics of Solids, **129**, 147, doi: 10.1016/j.jmps.2019.03.024, (2019)
16. PUTIGNANO C., SCARATI D., GAUDIUSO C., DI MUNDO R., ANCONA A., CARBONE G., *Soft matter laser micro-texturing for friction reduction: An experimental investigation*, Tribology International, **136**, 82, doi: 10.1016/j.triboint.2019.03.001, (2019)
17. MENGA N., PUTIGNANO C., AFFERRANTE L., CARBONE G., *The Contact Mechanics of Coated Elastic Solids: Effect of Coating Thickness and Stiffness*, Tribology Letters, **67**, 24, doi: 10.1007/s11249-019-1137-z, (2019).
18. MENGA N., CARBONE G., *The surface displacements of an elastic half-space subjected to uniform tangential tractions applied on a circular area*, European Journal of Mechanics - A/Solids, **73**, 197, doi: 10.1016/j.euromechsol.2018.07.011, (2019).
19. MASSARI G.F., GIANNOCCARO I., CARBONE G., *Are distrust relationships beneficial for group performance? The influence of the scope of distrust on the emergence of collective intelligence*, International Journal of Production Economics, **208**, 343, doi: 10.1016/j.ijpe.2018.12.005 (2019).
20. DI MUNDO R., BOTTIGLIONE F., PASCAZIO G., CARBONE G., *Water entry and fall of hydrophobic and superhydrophobic Teflon spheres*. Journal of Physics: Condensed Matter, **30**(44), 445001, doi: 10.1088/1361-648X/aae1dd, (2018).
21. GIANNOCCARO I., MASSARI G.F., CARBONE G., *Team Resilience in Complex and Turbulent Environments: The Effect of Size and Density of Social Interactions*, Complexity, **2018**, ID 1923216, doi: 10.1155/2018/1923216 (2018).
22. JOSHI G.S., PUTIGNANO C., GAUDIUSO C., STARK T., KIEDROWSKI T., ANCONA A., CARBONE G., *Effects of the micro surface texturing in lubricated non-conformal point contacts*, Tribology International, **127**, 296, doi: 10.1016/j.triboint.2018.06.021, (2018)
23. YILDIZ A., BOTTIGLIONE F., PICCININNI A., KOPMAZ O., CARBONE G., *Experimental validation of the Carbone–Mangialardi–Mantriota model of continuously variable transmissions*, Proceedings of the Institution of Mechanical Engineers, Part D:

- Journal of Automobile Engineering, **232** (6), 828, doi: 10.1177/0954407017711320, (2018).
24. AFFERRANTE L., BOTTIGLIONE F., PUTIGNANO C., PERSSON B.N.J., CARBONE G., *Elastic Contact Mechanics of Randomly Rough Surfaces: An Assessment of Advanced Asperity Models and Persson's Theory*, Tribology Letters **66**, 75, doi: 10.1007/s11249-018-1026-x, (2018).
  25. PUTIGNANO C., CARBONE G., *Viscoelastic reciprocating contacts in presence of finite rough interfaces: A numerical investigation*, Journal of the Mechanics and Physics of Solids, **114**, 185-193, DOI: 10.1016/j.jmps.2018.02.005, (2018).
  26. I. DE VINCENZO, G. F. MASSARI, I. GIANNOCCARO, G. CARBONE, P. GRIGOLINI, *Mimicking the collective intelligence of human groups as an optimization tool for complex problems*, Chaos Solitons & Fractals, **110**, 259-266, doi: 10.1016/j.chaos.2018.03.030, (2018)
  27. MENGA N., AFFERRANTE L., DEMELIO G.P., CARBONE G., *Rough contact of sliding viscoelastic layers: Numerical calculations and theoretical predictions*, diu: 10.1016/j.triboint.2018.02.012, (2018)
  28. A.I. Vakis, V.A. Yastrebov, J. Scheibert, C. Minfray, L. Nicola, D. Dini, A. Almqvist, M. Paggi, S. Lee, G. Limbert, J.F. Molinari, G. Anciaux, R. Aghababaei, S. Echeverri Restrepo, A. Papangelo, A. Cammarata, P. Nicolini, C. Putignano, G. CARBONE, M. Ciavarella, S. Stupkiewicz, J. Lengiewicz, G. Costagliola, F. Bosia, R. Guarino, N.M. Pugno, M.H. Müser, *Modeling and simulation in tribology across scales: An overview*, Tribology International, **125**, 169, doi. 10.1016/j.triboint.2018.02.005, (2018).
  29. MENGA N., AFFERRANTE L., PUGNO N.M., CARBONE G., *The multiple V-shaped double peeling of elastic thin films from elastic soft substrates*, Journal of the Mechanics and Physics of Solids, **113**, 56, doi: 10.1016/j.jmps.2018.01.010, (2018)
  30. MISSERONI D., AFFERRANTE L., CARBONE G., PUGNO N., *Non-linear double-peeling: Experimental vs. theoretical, predictions*, The Journal of Adhesion, **94** (1), 46-57, doi: 10.1080/00218464.2016.1255849, published on line 3 Feb. 2017, (2018)
  31. MENGA N., CARBONE G., DINI D., *Do uniform tangential interfacial stresses enhance adhesion?*, Journal of the Mechanics and Physics of Solids, **112**, 145-156, doi: 10.1016/j.jmps.2017.11.022, on line since 28 Nov. 2017, (2018).
  32. AFFERRANTE L., CARBONE G., *Effect of drop volume and surface statistics on the superhydrophobicity of randomly rough substrates*, Journal of Physics: Condensed Matter, **30** (4), 045001, doi: 10.1088/1361-648X/aaa0f5, (2018).
  33. CIAVARELLA M., CARBONE G., VINOGRADOV V., *A Critical Assessment of Kassapoglou's Statistical Model For Composites Fatigue*, Facta Universitatis, Series: Mechanical Engineering, **16** (2), doi: 10.22190/FUME180321014C, (2018).
  34. Martin H Müser, Wolf B Dapp, Romain Bugnicourt, Philippe Sainsot, Nicolas Lesaffre, Ton A Lubrecht, Bo NJ Persson, Kathryn Harris, Alexander Bennett, Kyle Schulze, Sean Rohde, Peter Ifju, W Gregory Sawyer, Thomas Angelini, Hossein Ashtari Esfahani, Mahmoud Kadkhodaei, Saleh Akbarzadeh, Jiunn-Jong Wu, Georg Vorlauffer, András Vernes, Soheil Solhjoo, Antonis I Vakis, Robert L Jackson, Yang Xu, Jeffrey Streater, Amir Rostami, Daniele Dini, Simon Medina, GIUSEPPE CARBONE, Francesco Bottiglione, Luciano Afferrante, Joseph Monti, Lars Pastewka, Mark O Robbins, James A Greenwood, *Meeting the contact-mechanics challenge*, Tribology Letters, **65** (4), 118, doi: 10.1007/s11249-017-0900-2, (2017).



35. ANCONA A., JOSHI G.S., VOLPE A., SCARAGGI M., LUGARÀ P.M., CARBONE G., *Non-Uniform Laser Surface Texturing of an Un-Tapered Square Pad for Tribological Applications*, Lubricants **5** (4), 41, doi: 10.3390/lubricants5040041, (2017).
36. PUTIGNANO C., CARBONE G., *Viscoelastic Damping in alternate reciprocating contacts*, Scientific Reports, **7**, 8333, doi: 10.1038/s41598-017-08507-8, (2017)
37. DE VINCENZO I., GIANNOCCARO I., CARBONE G., *How social network features and organizational structure impact team performance in uncertain environments*, Emergence – Complexity & Organization **19** (2), 2017.
38. DE VINCENZO I., GIANNOCCARO I., CARBONE G., GRIGOLINI P., *Criticality triggers the emergence of collective intelligence in groups*, Physical Review E, **96**, 022309 doi: 10.1103/PhysRevE.96.022309, (2017).
39. YILDIZ A., BOTTIGLIONE F., PICCININNI A., KOPMAZ O., CARBONE G., *Experimental validation of the Carbone–Mangialardi–Mantriota model of continuously variable transmissions*, Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, doi: 10.1177/0954407017711320, (2017).
40. GIANNOCCARO I., CARBONE G., *An Ising-based dynamic model to study the effect of social interactions on firm absorptive capacity*, International Journal of Production Economics, doi: 10.1016/j.ijpe.2017.05.003, (2017)
41. PAREKH M., RUZZA A., DI MUNDO R., FERRARI S., RECCHIA G., ELBADAWY H., CARBONE G., PONZIN D., *Role of dextran in maintaining adhesive and stiffness properties of prestripped DMEK lenticules*, Eur J Ophthalmol, **27**(3), doi: 10.5301/ejo.5000906, 270-277, (2017)
42. DI MUNDO R., RECCHIA G., PAREKH M., RUZZA A., FERRARI S., CARBONE G., *Sensing inhomogeneous mechanical properties of human corneal Descemet's membrane with AFM nano-indentation*, Journal of the Mechanical Behavior of Biomedical Materials **74**, 21–27, doi: 10.1016/j.jmbbm.2017.05.019 (2017)
43. MENGA N., DI MUNDO R. CARBONE G., *Soft blasting of fluorinated polymers: The easy way to superhydrophobicity*, Materials & Design **121**, 414–420, doi: 10.1016/j.matdes.2017.02.074, (2017).
44. MENGA, N., FOTI, D., CARBONE, G. Meccanica, *Viscoelastic frictional properties of rubber-layer roller bearings (RLRB) seismic isolators*, **52**, 2807. doi:10.1007/s11012-016-0612-y, (2017)
45. AFFERRANTE L., CARBONE G., *The ultratough peeling of elastic tapes from viscoelastic substrates*, Journal of the Mechanics and Physics of Solids, **96**, 223-234, doi: 10.1016/j.jmps.2016.07.013, (2016).
46. DI MUNDO R., BOTTIGLIONE F., PALUMBO F., NOTARNICOLA M., CARBONE G., *Filamentary superhydrophobic Teflon surfaces: Moderate apparent contact angle but superior air-retaining properties*, Journal of Colloid and Interface Science, **482**, 175-182, doi: 10.1016/j.jcis.2016.07.071, (2016).
47. YILDIZ A., PICCININNI A., BOTTIGLIONE F., CARBONE G., *Modeling chain continuously variable transmission for direct implementation in transmission control*, Mechanism and Machine Theory, **105**, 428-440, doi: 10.1016/j.mechmachtheory.2016.07.015, (2016).
48. MENGA N., AFFERRANTE L., CARBONE G., *Effect of thickness and boundary conditions on the behavior of viscoelastic layers in sliding contact with wavy profiles*, Journal of the Mechanics and Physics of Solids, **95**, 517–529, doi: 10.1016/j.jmps.2016.06.009, (2016)

49. CARBONE G., PIERRO E., RECCHIA G., *Publisher's Note: Loading-unloading hysteresis loop of randomly rough adhesive contacts [Phys. Rev. E 92, 062404 (2015)]*, *Phys. Rev. E* **93**, 049908, doi: 10.1103/PhysRevE.93.049908, (2016).
50. AFFERRANTE L., HEEPE L., CASDORFF K., GORB S.N., CARBONE G.: *A Theoretical Characterization of Curvature Controlled Adhesive Properties of Bio-Inspired Membranes*, *Biomimetics*, **1**(1), 3, doi:10.3390/biomimetics1010003, (2016)
51. PUTIGNANO C., CARBONE G., DINI D., *Theory of Reciprocating Contact for Viscoelastic Solids*, *Physical Review E*, doi: 10.1103/PhysRevE.00.003000, (2016).
52. MENGA N., AFFERRANTE L., CARBONE G., *Adhesive and adhesiveless contact mechanics of elastic layers on slightly wavy rigid substrates*, *International Journal of Solids and Structures*, doi: 10.1016/j.ijsolstr.2016.03.016, (2016).
53. Di MUNDO R., BOTTIGLIONE F., PALUMBO F., FAVIA P., CARBONE G., *Sphere-on-cone microstructures on Teflon surface: Repulsive behavior against impacting water droplets*, *Materials & Design*, **92**, 1052–1061, doi: 10.1016/j.matdes.2015.11.094, (2016)
54. CARBONE G., GIANNOCCARO I., *Model of human collective decision-making in complex environments*, *The European Physical Journal B*, **88** (12), 339-348, doi:10.1140/epjb/e2015-60609-0, (2015).
55. CARBONE G., PIERRO E., RECCHIA G., *Loading-unloading hysteresis loop of randomly rough adhesive contacts*, *Physical Review E*, **92**, 062404, doi: 10.1103/PhysRevE.92.062404, (2015).
56. AFFERRANTE L., CARBONE G., *Statistical theory of wetting of liquid drops on superhydrophobic randomly rough surfaces*, *Physical Review E* **92**, 042407, doi: 10.1103/PhysRevE.92.042407, (2015)
57. BOTTIGLIONE F., CARBONE G., PERSSON B.N.J., *Fluid contact angle on solid surfaces: Role of multiscale surface roughness*, *The Journal of Chemical Physics*, **143**(13), 134705, doi: 10.1063/1.4932104, (2015).
58. AFFERRANTE L., GRIMALDI G., DEMELIO G., CARBONE G., *Direction-dependent adhesion of micro-walls based biomimetic adhesives*, *International Journal of Adhesion and Adhesives*, **61**, 93–98, doi: 10.1016/j.ijadhadh.2015.05.007, (2015)
59. PUTIGNANO C., CARBONE G., DINI D., *Mechanics of Rough Contacts in Elastic and Viscoelastic Thin Layers*, *International Journal of Solids and Structures*, **69–70**, 507–517 doi: 10.1016/j.ijsolstr.2015.04.034, (2015).
60. 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).
61. 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/nnl.2015.1922, (2015)
62. 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)
63. 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)

64. 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)
65. 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)
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143. MENGA N., CARBONE G., *Adhesive elastic periodic contacts: the role of interfacial friction and slab thickness*, EUROMECH COLLOQUIUM Contact Mechanics and Coupled Problems in Surface Phenomena, Lucca (Italy), 30 marzo – 2 aprile 2015.
144. PUTIGNANO C., CARBONE G., *Viscoelastic Contact Problems challenges and recent advancements*, EUROMECH COLLOQUIUM Contact Mechanics and Coupled Problems in Surface Phenomena, Lucca (Italy), 30 marzo – 2 aprile 2015.
145. GIANNOCCARO I., CARBONE G., *Collaborative problem solving in complex settings: Coupling NK model with the Ising/Glauber dynamics*, 6th Workshop on Complex Networks, CompleNet 2015, New York City, USA, March 25-27, 2015.
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Bari 03/01/2021

A handwritten signature in black ink, reading "Giuseppe Carbone". The signature is written in a cursive style with a large initial 'G' and 'C'.