# Federico Bosia

List of Publications by Year
in descending order

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|---|---|---|---|
| 119 papers | 2,865 citations | 218677 26 h-index | 197818 49 g-index |
| 126 all docs | 126 docs citations | 126 times ranked | 2835 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Experimental and Numerical Study of the Effect of Surface Patterning on the Frictional Properties of Polymer Surfaces. Journal of Tribology, 2022, 144, . | 1.9 | 4 |
| 2 | Tuning of frictional properties in torsional contact by means of disk grading. Friction, 2022, 10, 787-802. | 6.4 | 2 |
| 3 | A 3D Griffith peeling model toÂunify and generalize single and double peeling theories. Meccanica, 2022, 57, 1125-1138. | 2.0 | 0 |
| 4 | Correlation between slip precursors and topological length scales at the onset of frictional sliding. International Journal of Solids and Structures, 2022, 243, 111525. | 2.7 | 6 |
| 5 | Unveiling a new shear stress transfer mechanism in composites with helically wound hierarchicalÂfibres. International Journal of Mechanical Sciences, 2021, 192, 106135. | 6.7 | 10 |
| 6 | Hierarchical large-scale elastic metamaterials for passive seismic wave mitigation. EPJ Applied Metamaterials, 2021, 8, 14. | 1.5 | 14 |
| 7 | Robust substrate anchorages of silk lines with extensible nano-fibres. Soft Matter, 2021, 17, 7903-7913. | 2.7 | 1 |
| 8 | Attenuating surface gravity waves with mechanical metamaterials. Physics of Fluids, 2021, 33, . | 4.0 | 9 |
| 9 | Band gap enhancement in periodic frames using hierarchical structures. International Journal of Solids and Structures, 2021, 216, 68-82. | 2.7 | 19 |
| 10 | Adhesion and plasticity in the dynamic response of rough surfaces in contact. International Journal of Solids and Structures, 2021, 216, 17-29. | 2.7 | 3 |
| 11 | Dissipative Dynamics of Polymer Phononic Materials. Advanced Functional Materials, 2021, 31, 2103424. | 14.9 | 23 |
| 12 | Experimental full wavefield reconstruction and band diagram analysis in a single-phase phononic plate with internal resonators. Journal of Sound and Vibration, 2021, 503, 116098. | 3.9 | 13 |
| 13 | Topologically engineered 3D printed architectures with superior mechanical strength. Materials Today, 2021, 48, 72-94. | 14.2 | 37 |
| 14 | Improving rubber concrete strength and toughness by plasmaâ€induced endâ€ofâ€life tire rubber surface modification. Plasma Processes and Polymers, 2021, 18, 2100081. | 3.0 | 17 |
| 15 | Hierarchical auxetic and isotropic porous medium with extremely negative Poissonâ€™s ratio. Extreme Mechanics Letters, 2021, 48, 101405. | 4.1 | 30 |
| 16 | Optimization of spider web-inspired phononic crystals to achieve tailored dispersion for diverse objectives. Materials and Design, 2021, 209, 109980. | 7.0 | 12 |
| 17 | Creation of pure non-crystalline diamond nanostructures via room-temperature ion irradiation and subsequent thermal annealing. Nanoscale Advances, 2021, 3, 4156-4165. | 4.6 | 1 |
| 18 | How bio-inspiration enhances the potential of phononic crystals and metamaterials. , 2021, , . | | 0 |

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|---|---|---|---|
| 19 | A theoretical-numerical model for the peeling of elastic membranes. Journal of the Mechanics and Physics of Solids, 2020, 136, 103733. | 4.8 | 13 |
| 20 | Editorial: Bioinspired wet and dry adhesion. Bioinspiration and Biomimetics, 2020, 15, 040401. | 2.9 | 1 |
| 21 | The role of hairs in the adhesion of octopus suckers: a hierarchical peeling approach. Bioinspiration and Biomimetics, 2020, 15, 035006. | 2.9 | 13 |
| 22 | A combined experimental/numerical study on the scaling of impact strength and toughness in composite laminates for ballistic applications. Composites Part B: Engineering, 2020, 195, 108090. | 12.0 | 20 |
| 23 | Evolutionary Algorithm Optimization of Staggered Biological or Biomimetic Composites Using the Random Fuse Model. Physical Review Applied, 2020, 13, . | 3.8 | 5 |
| 24 | Random fuse model in the presence of self-healing. New Journal of Physics, 2020, 22, 033005. | 2.9 | 5 |
| 25 | Hierarchical Large-Scale Elastic Metamaterials as an Innovative Passive Isolation Strategy for Seismic Wave Mitigation. , 2020, , . | | 0 |
| 26 | Tunable frequency band structure in photo-responsive elastic metamaterials. , 2020, , . | | 0 |
| 27 | Evolution of aerial spider webs coincided with repeated structural optimization of silk anchorages. Evolution; International Journal of Organic Evolution, 2019, 73, 2122-2134. | 2.3 | 25 |
| 28 | Proof of concept of a frequency-preserving and time-invariant metamaterial-based nonlinear acoustic diode. Scientific Reports, 2019, 9, 9560. | 3.3 | 26 |
| 29 | An experimental-numerical study of the adhesive static and dynamic friction of micro-patterned soft polymer surfaces. Materials and Design, 2019, 181, 107930. | 7.0 | 15 |
| 30 | Quantum Microâ€“Nano Devices Fabricated in Diamond by Femtosecond Laser and Ion Irradiation (Adv.) Tj ETQq0 0 0 rgBT /Overlock 10 | 3.9 | 8 |
| 31 | Quantum Microâ€“Nano Devices Fabricated in Diamond by Femtosecond Laser and Ion Irradiation. Advanced Quantum Technologies, 2019, 2, 1900006. | 3.9 | 31 |
| 32 | Application of a Laser-Based Time Reversal Algorithm for Impact Localization in a Stiffened Aluminum Plate. Frontiers in Materials, 2019, 6, . | 2.4 | 20 |
| 33 | Competition between delamination and tearing in multiple peeling problems. Journal of the Royal Society Interface, 2019, 16, 20190388. | 3.4 | 3 |
| 34 | Modeling and simulation in tribology across scales: An overview. Tribology International, 2018, 125, 169-199. | 5.9 | 335 |
| 35 | The influence of substrate roughness, patterning, curvature, and compliance in peeling problems. Bioinspiration and Biomimetics, 2018, 13, 026004. | 2.9 | 15 |
| 36 | Polarized micro-Raman studies of femtosecond laser written stress-induced optical waveguides in diamond. Applied Physics Letters, 2018, 112, . | 3.3 | 21 |

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|---|---|---|---|
| 37 | Grafting carbon nanotubes onto carbon fibres doubles their effective strength and the toughness of the composite. Composites Science and Technology, 2018, 166, 140-149. | 7.8 | 29 |
| 38 | A 2-D model for friction of complex anisotropic surfaces. Journal of the Mechanics and Physics of Solids, 2018, 112, 50-65. | 4.8 | 22 |
| 39 | Hybrid metamaterials combining pentamode lattices and phononic plates. Applied Physics Letters, 2018, 113, . | 3.3 | 27 |
| 40 | Tunable extremely wide low-frequency band gaps in accordion-like metamaterials. , 2018, , . | | 1 |
| 41 | Evidence of friction reduction in laterally graded materials. Beilstein Journal of Nanotechnology, 2018, 9, 2443-2456. | 2.8 | 4 |
| 42 | Editorial: Advances in Mechanical Metamaterials. Frontiers in Materials, 2018, 5, . | 2.4 | 3 |
| 43 | Tuning the strain-induced resonance shift in silicon racetrack resonators by their orientation. Optics Express, 2018, 26, 4204. | 3.4 | 7 |
| 44 | Mapping the Local Spatial Charge in Defective Diamond by Means of N- V Sensorsâ€"A Self-Diagnostic Concept. Physical Review Applied, 2018, 10, . | 3.8 | 15 |
| 45 | Labyrinthine Acoustic Metamaterials with Space-Coiling Channels for Low-Frequency Sound Control. Acta Acustica United With Acustica, 2018, 104, 200-210. | 0.8 | 45 |
| 46 | Experimental Observation of a Large Low-Frequency Band Gap in a Polymer Waveguide. Frontiers in Materials, 2018, 5, . | 2.4 | 19 |
| 47 | Accordion-like metamaterials with tunable ultra-wide low-frequency band gaps. New Journal of Physics, 2018, 20, 073051. | 2.9 | 58 |
| 48 | Design and Fabrication of Bioinspired Hierarchical Dissipative Elastic Metamaterials. Physical Review Applied, 2018, 10, . | 3.8 | 80 |
| 49 | Emergence of the interplay between hierarchy and contact splitting in biological adhesion highlighted through a hierarchical shear lag model. Soft Matter, 2018, 14, 5509-5518. | 2.7 | 7 |
| 50 | Coupling local resonance with Bragg band gaps in single-phase mechanical metamaterials. Extreme Mechanics Letters, 2017, 12, 30-36. | 4.1 | 164 |
| 51 | Hierarchical Spring-Block Model for Multiscale Friction Problems. ACS Biomaterials Science and Engineering, 2017, 3, 2845-2852. | 5.2 | 13 |
| 52 | Bulk diamond optical waveguides fabricated by focused femtosecond laser pulses. , 2017, , . | | 0 |
| 53 | A hybrid deterministic-probabilistic approach to model the mechanical response of helically arranged hierarchical strands. Journal of the Mechanics and Physics of Solids, 2017, 106, 338-352. | 4.8 | 9 |
| 54 | Spider web-structured labyrinthine acoustic metamaterials for low-frequency sound control. New Journal of Physics, 2017, 19, 105001. | 2.9 | 92 |

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|---|---|---|---|
| 55 | Tuning friction with composite hierarchical surfaces. Tribology International, 2017, 115, 261-267. | 5.9 | 11 |
| 56 | Optimal Adhesion Control via Cooperative Hierarchy, Grading, Geometries and Non-linearity of Anchorages and Adhesive Pads. Biologically-inspired Systems, 2017, , 81-93. | 0.2 | 1 |
| 57 | Spider silk reinforced by graphene or carbon nanotubes. 2D Materials, 2017, 4, 031013. | 4.4 | 57 |
| 58 | Proof of Concept for an Ultrasensitive Technique to Detect and Localize Sources of Elastic Nonlinearity Using Phononic Crystals. Physical Review Letters, 2017, 118, 214301. | 7.8 | 128 |
| 59 | Dissipative elastic metamaterials. , 2017, , . | | 0 |
| 60 | Fractal and spider web-inspired labyrinthine acoustic metamaterials. , 2017, , . | | 2 |
| 61 | Hierarchical bio-inspired dissipative metamaterials for low frequency attenuation. , 2017, , . | | 1 |
| 62 | Refractive index variation in a free-standing diamond thin film induced by irradiation with fully transmitted high-energy protons. Scientific Reports, 2017, 7, 385. | 3.3 | 15 |
| 63 | Softening the ultra-stiff: Controlled variation of Youngâ€™s modulus in single-crystal diamond by ion implantation. Acta Materialia, 2016, 116, 95-103. | 7.9 | 30 |
| 64 | Static and dynamic friction of hierarchical surfaces. Physical Review E, 2016, 94, 063003. | 2.1 | 35 |
| 65 | Spider web-inspired acoustic metamaterials. Applied Physics Letters, 2016, 109, . | 3.3 | 79 |
| 66 | An experimental and numerical study on the mechanical properties of carbon nanotube-latex thin films. Journal of the European Ceramic Society, 2016, 36, 2255-2262. | 5.7 | 16 |
| 67 | Computational modeling of the mechanics of hierarchical materials. MRS Bulletin, 2016, 41, 694-699. | 3.5 | 10 |
| 68 | Micro and nano-patterning of single-crystal diamond by swift heavy ion irradiation. Diamond and Related Materials, 2016, 69, 1-7. | 3.9 | 9 |
| 69 | Large scale mechanical metamaterials as seismic shields. New Journal of Physics, 2016, 18, 083041. | 2.9 | 246 |
| 70 | Knotted synthetic polymer or carbon nanotube microfibres with enhanced toughness, up to 1400 J/g. Carbon, 2016, 102, 116-125. | 10.3 | 12 |
| 71 | Characterization of the recovery of mechanical properties of ion-implanted diamond after thermal annealing. Diamond and Related Materials, 2016, 63, 75-79. | 3.9 | 7 |
| 72 | Metamaterials-based sensor to detect and locate nonlinear elastic sources. Applied Physics Letters, 2015, 107, . | 3.3 | 43 |

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| 73 | A Hierarchical Lattice Spring Model to Simulate the Mechanics of 2-D Materials-Based Composites. Frontiers in Materials, 2015, 2, . | 2.4 | 24 |
| 74 | Numerical implementation of multiple peeling theory and its application to spider web anchorages. Interface Focus, 2015, 5, 20140051. | 3.0 | 18 |
| 75 | Fatigue of self-healing hierarchical soft nanomaterials: The case study of the tendon in sportsmen. Journal of Materials Research, 2015, 30, 2-9. | 2.6 | 6 |
| 76 | Micro-beam and pulsed laser beam techniques for the micro-fabrication of diamond surface and bulk structures. Nuclear Instruments & Methods in Physics Research B, 2015, 348, 191-198. | 1.4 | 3 |
| 77 | Hierarchical multiple peeling simulations. RSC Advances, 2014, 4, 25447-25452. | 3.6 | 18 |
| 78 | An analytical model for the mechanical deformation of locally graphitized diamond. Diamond and Related Materials, 2014, 48, 73-81. | 3.9 | 9 |
| 79 | Self-Healing of Hierarchical Materials. Langmuir, 2014, 30, 1123-1133. | 3.5 | 17 |
| 80 | Structural reinforcement and failure analysis in composite nanofibers of graphene oxide and gelatin. Carbon, 2014, 78, 566-577. | 10.3 | 81 |
| 81 | Systematic numerical investigation of the role of hierarchy in heterogeneous bio-inspired materials. Journal of the Mechanical Behavior of Biomedical Materials, 2013, 19, 34-42. | 3.1 | 4 |
| 82 | Splitting of photoluminescent emission from nitrogenâ€“vacancy centers in diamond induced by ion-damage-induced stress. New Journal of Physics, 2013, 15, 043027. | 2.9 | 26 |
| 83 | Direct measurement and modelling of internal strains in ion-implanted diamond. Journal of Physics Condensed Matter, 2013, 25, 385403. | 1.8 | 22 |
| 84 | In silico tensile tests and design of hierarchical graphene fibres and composites. Physica Status Solidi (B): Basic Research, 2013, 250, 1492-1495. | 1.5 | 3 |
| 85 | Spectroscopic measurement of the refractive index of ion-implanted diamond. Optics Letters, 2012, 37, 671. | 3.3 | 25 |
| 86 | Publisherâ€™s Note: Hierarchical fiber bundle model to investigate the complex architectures of biological materials [Phys. Rev. E85, 011903 (2012)]. Physical Review E, 2012, 85, . | 2.1 | 0 |
| 87 | Hierarchical fiber bundle model to investigate the complex architectures of biological materials. Physical Review E, 2012, 85, 011903. | 2.1 | 37 |
| 88 | Investigating the role of hierarchy on the strength of composite materials: evidence of a crucial synergy between hierarchy and material mixing. Nanoscale, 2012, 4, 1200. | 5.6 | 34 |
| 89 | Modification of the structure of diamond with MeV ion implantation. Diamond and Related Materials, 2011, 20, 774-778. | 3.9 | 25 |
| 90 | Finite element analysis of ion-implanted diamond surface swelling. Nuclear Instruments & Methods in Physics Research B, 2010, 268, 2991-2995. | 1.4 | 32 |

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|---|---|---|---|
| 91 | Space charge limited current (SCLC) as observed on diamond surface damaged by MeV ion implantation. IOP Conference Series: Materials Science and Engineering, 2010, 16, 012004. | 0.6 | 2 |
| 92 | Publisher's Note: Hierarchical simulations for the design of supertough nanofibers inspired by spider silk [Phys. Rev. E82, 056103 (2010)]. Physical Review E, 2010, 82, . | 2.1 | 1 |
| 93 | Hierarchical simulations for the design of supertough nanofibers inspired by spider silk. Physical Review E, 2010, 82, 056103. | 2.1 | 39 |
| 94 | Evidence of Light Guiding in Ion-Implanted Diamond. Physical Review Letters, 2010, 105, 233903. | 7.8 | 49 |
| 95 | Self-similarity of waiting times in fracture systems. Physical Review E, 2009, 80, 026101. | 2.1 | 24 |
| 96 | Through-the-Thickness Deformation of Composite Laminates Subjected to Bending. Journal of the Mechanical Behavior of Materials, 2009, 19, 167-176. | 1.8 | 0 |
| 97 | Size effects on the strength of nanotube bundles. Measurement Science and Technology, 2009, 20, 084028. | 2.6 | 5 |
| 98 | Modification of the electrical and optical Properties of Single Crystal Diamond with Focused MeV Ion Beams. Materials Research Society Symposia Proceedings, 2009, 1203, 1. | 0.1 | 0 |
| 99 | Scaling properties of nanotube-based macroscopic cables through multiscale numerical simulations. IEEE Nanotechnology Magazine, 2009, 3, 14-19. | 1.3 | 3 |
| 100 | Multiscale Stochastic Simulations for Tensile Testing of Nanotubeâ€Based Macroscopic Cables. Small, 2008, 4, 1044-1052. | 10.0 | 48 |
| 101 | Mesoscopic modeling of Acoustic Emission through an energetic approach. International Journal of Solids and Structures, 2008, 45, 5856-5866. | 2.7 | 23 |
| 102 | Phenomenological approach to mechanical damage growth analysis. Physical Review E, 2008, 78, 046103. | 2.1 | 21 |
| 103 | Modelling Damage Progression by a Statistical Energy-Balance Algorithm. Key Engineering Materials, 2007, 347, 435-440. | 0.4 | 0 |
| 104 | Preisach-Mayergoyz approach to fatigue-induced irreversibility. Physical Review B, 2006, 73, . | 3.2 | 8 |
| 105 | Subharmonic generation in physical systems: An interaction-box approach. Wave Motion, 2006, 43, 689-699. | 2.0 | 2 |
| 106 | Numerical Analysis of the Anomalous Elastic Behavior of Hysteretic Media: Quasistatic, Dynamic, and Relaxation Experiments. , 2006, , 269-285. | | 0 |
| 107 | Smart composites with embedded shape memory alloy actuators and fibre Bragg grating sensors: activation and control. Smart Materials and Structures, 2005, 14, 457-465. | 3.5 | 37 |
| 108 | Through-the-thickness distribution of strains in laminated composite plates subjected to bending. Composites Science and Technology, 2004, 64, 71-82. | 7.8 | 16 |

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|---|---|---|---|
| 109 | Characterization of the response of fibre Bragg grating sensors subjected to a two-dimensional strain field. Smart Materials and Structures, 2003, 12, 925-934. | 3.5 | 70 |
| 110 | Modeling of the residual stresses acting on a low-birefringence fiber Bragg grating sensor embedded in an epoxy matrix. , 2003, 5049, 506. | | 3 |
| 111 | <title>Characterization of embedded fiber Bragg grating sensors written in high-birefringent optical fibers subjected to transverse loading</title>. , 2002, , . | | 8 |
| 112 | Deformation characteristics of composite laminatesâ€"part I: speckle interferometry and embedded Bragg grating sensor measurements. Composites Science and Technology, 2002, 62, 41-54. | 7.8 | 36 |
| 113 | Deformation characteristics of composite laminatesâ€"part II: an experimental/numerical study on equivalent single-layer theories. Composites Science and Technology, 2002, 62, 55-66. | 7.8 | 14 |
| 114 | OBLIQUE ACOUSTIC AXES IN TRIGONAL CRYSTALS. Journal of Computational Acoustics, 2001, 09, 1147-1161. | 1.0 | 6 |
| 115 | Effects of piezoelectricity on acoustic axes in crystals. Annales De Chimie: Science Des Materiaux, 2001, 26, 59-62. | 0.4 | 1 |
| 116 | Experimental Analysis of Composite Laminates Subjected to Bending. , 2000, , 355-362. | | 0 |
| 117 | Types of leaky SAW degeneracy in crystals. , 0, , . | | 3 |
| 118 | Leaky SAW branches coupled with oblique acoustic axes in trigonal crystals. , 0, , . | | 1 |
| 119 | Prey Impact Localization Enabled by Material and Structural Interaction in Spider Orb Webs. Advanced Theory and Simulations, 0, , 2100282. | 2.8 | 3 |