

# Edoardo Bemporad

## List of Publications by Year in descending order

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120  
papers

3,113  
citations

147801

31  
h-index

182427

51  
g-index

122  
all docs

122  
docs citations

122  
times ranked

3210  
citing authors

#	ARTICLE	IF	CITATIONS
1	Residual stress evaluation at the micrometer scale: Analysis of thin coatings by FIB milling and digital image correlation. <i>Surface and Coatings Technology</i> , 2010, 205, 2393-2403.	4.8	152
2	Focused ion beam ring drilling for residual stress evaluation. <i>Materials Letters</i> , 2009, 63, 1961-1963.	2.6	146
3	Influence of Ti/TiN multilayer PVD-coatings design on residual stresses and adhesion. <i>Materials &amp; Design</i> , 2015, 75, 47-56.	5.1	138
4	Depth-resolved residual stress analysis of thin coatings by a new FIB-DIC method. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2011, 528, 7901-7908.	5.6	133
5	F-substituted hydroxyapatite nanopowders: Thermal stability, sintering behaviour and mechanical properties. <i>Ceramics International</i> , 2010, 36, 313-322.	4.8	114
6	High thickness Ti/TiN multilayer thin coatings for wear resistant applications. <i>Surface and Coatings Technology</i> , 2006, 201, 2155-2165.	4.8	105
7	Preparation and characterization of nano cobalt oxide. <i>Journal of Nanoparticle Research</i> , 2008, 10, 59-67.	1.9	105
8	Surface analysis of biocompatible coatings on titanium. <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 1998, 95, 61-69.	1.7	92
9	Parametric Study of an HVOF Process for the Deposition of Nanostructured WC-Co Coatings. <i>Journal of Thermal Spray Technology</i> , 2005, 14, 187-195.	3.1	89
10	Characterization and residual stresses of WC-Co thermally sprayed coatings. <i>Surface and Coatings Technology</i> , 2008, 202, 4560-4565.	4.8	78
11	Tribological studies on PVD/HVOF duplex coatings on Ti6Al4V substrate. <i>Surface and Coatings Technology</i> , 2008, 203, 566-571.	4.8	63
12	Modelling, production and characterisation of duplex coatings (HVOF and PVD) on Ti6Al4V substrate for specific mechanical applications. <i>Surface and Coatings Technology</i> , 2007, 201, 7652-7662.	4.8	61
13	Measurement of residual stress in thermal spray coatings by the incremental hole drilling method. <i>Surface and Coatings Technology</i> , 2006, 201, 2092-2098.	4.8	59
14	A critical comparison between XRD and FIB residual stress measurement techniques in thin films. <i>Thin Solid Films</i> , 2014, 572, 224-231.	1.8	58
15	Hydrothermal N-doped TiO <sub>2</sub> : Explaining photocatalytic properties by electronic and magnetic identification of N active sites. <i>Applied Catalysis B: Environmental</i> , 2009, 93, 149-155.	20.2	55
16	Nanoscale residual stress depth profiling by Focused Ion Beam milling and eigenstrain analysis. <i>Materials and Design</i> , 2018, 145, 55-64.	7.0	54
17	Investigation of AA2024-T3 surfaces modified by cerium compounds: A localized approach. <i>Corrosion Science</i> , 2014, 78, 215-222.	6.6	51
18	Interaction of mercury vapour with thin films of gold. <i>Applied Surface Science</i> , 1996, 103, 107-111.	6.1	49

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19	Damage progression in thermal barrier coating systems during thermal cycling: A nano-mechanical assessment. <i>Materials and Design</i> , 2019, 166, 107615.	7.0	47
20	Production and characterization of duplex coatings (HVOF and PVD) on Ti-6Al-4V substrate. <i>Thin Solid Films</i> , 2006, 515, 186-194.	1.8	43
21	Residual stress measurement in thin films at sub-micron scale using Focused Ion Beam milling and imaging. <i>Thin Solid Films</i> , 2012, 520, 2073-2076.	1.8	42
22	Anisotropic distribution of the micro residual stresses in lath martensite revealed by FIB ring-core milling technique. <i>Acta Materialia</i> , 2018, 150, 327-338.	7.9	41
23	Tensile experiments and SEM fractography on bovine subchondral bone. <i>Journal of Biomechanics</i> , 2000, 33, 1153-1157.	2.1	39
24	Preparation and mechanical characterization of dense and porous zirconia produced by gel casting with gelatin as a gelling agent. <i>Ceramics International</i> , 2009, 35, 2481-2491.	4.8	39
25	Design, fabrication and characterization of multilayer Cr-CrN thin coatings with tailored residual stress profiles. <i>Materials and Design</i> , 2016, 112, 162-171.	7.0	39
26	Characterization and hardness modelling of alternate TiN/TiCN multilayer cathodic arc PVD coating on tool steel. <i>Surface and Coatings Technology</i> , 2001, 146-147, 363-370.	4.8	38
27	Influence of mechanical properties of tungsten carbide-cobalt thermal spray coatings on their solid particle erosion behaviour. <i>Surface Engineering</i> , 2012, 28, 237-243.	2.2	37
28	High resolution residual stress measurement on amorphous and crystalline plasma-sprayed single-splats. <i>Surface and Coatings Technology</i> , 2012, 206, 4872-4880.	4.8	37
29	Depth-sensing indentation modeling for determination of Elastic modulus of thin films. <i>Mechanics of Materials</i> , 2010, 42, 166-174.	3.2	35
30	Wear mechanisms and in-service surface modifications of a Stellite 6B Co-Cr alloy. <i>Wear</i> , 2012, 290-291, 10-17.	3.1	35
31	Metrology and nano-mechanical tests for nano-manufacturing and nano-bio interface: Challenges & future perspectives. <i>Materials and Design</i> , 2018, 137, 446-462.	7.0	35
32	Characterization of expanded austenite developed on AISI 316L stainless steel by plasma carburization. <i>Surface and Coatings Technology</i> , 2010, 204, 3750-3759.	4.8	34
33	Effects of intra-crystalline microcracks on the mechanical behavior of a marble under indentation. <i>International Journal of Rock Mechanics and Minings Sciences</i> , 2012, 54, 47-55.	5.8	33
34	Characterisation and wear properties of industrially produced nanoscaled CrN/NbN multilayer coating. <i>Surface and Coatings Technology</i> , 2004, 188-189, 319-330.	4.8	32
35	Low temperature degradation resistant nanostructured yttria-stabilized zirconia for dental applications. <i>Ceramics International</i> , 2016, 42, 8190-8197.	4.8	31
36	Mechanical properties of cellular ceramics obtained by gel casting: Characterization and modeling. <i>Journal of the European Ceramic Society</i> , 2009, 29, 2979-2989.	5.7	30

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37	Optimized coating procedure for the protection of TiAl intermetallic alloy against high temperature oxidation. <i>Intermetallics</i> , 2013, 37, 76-82.	3.9	30
38	Structural, optical and electronic properties of wide band gap amorphous carbon-silicon alloys. <i>Diamond and Related Materials</i> , 1993, 2, 773-777.	3.9	29
39	Austenite modification of AISI 316L SS by pulsed nitrogen ion beams generated in dense plasma focus discharges. <i>Surface and Coatings Technology</i> , 2010, 204, 1193-1199.	4.8	29
40	Focused ion beam four-slot milling for Poisson's ratio and residual stress evaluation at the micron scale. <i>Surface and Coatings Technology</i> , 2014, 251, 151-161.	4.8	29
41	Residual stress measurement at the micrometer scale: focused ion beam (FIB) milling and nanoindentation testing. <i>Philosophical Magazine</i> , 2011, 91, 1121-1136.	1.6	27
42	Multi-step anodizing on Ti6Al4V components to improve tribomechanical performances. <i>Surface and Coatings Technology</i> , 2013, 227, 19-27.	4.8	27
43	Stability of expanded austenite, generated by ion carburizing and ion nitriding of AISI 316L SS, under high temperature and high energy pulsed ion beam irradiation. <i>Surface and Coatings Technology</i> , 2013, 218, 142-151.	4.8	27
44	Effect of composition on mechanical behaviour of diamond-like carbon coatings modified with titanium. <i>Thin Solid Films</i> , 2011, 519, 3061-3067.	1.8	25
45	Ni-B electrodeposits with low B content: Effect of DMAB concentration on the internal stresses and the electrochemical behaviour. <i>Surface and Coatings Technology</i> , 2018, 344, 190-196.	4.8	25
46	Structural characterisation of High Velocity Suspension Flame Sprayed (HVSFS) TiO <sub>2</sub> coatings. <i>Surface and Coatings Technology</i> , 2010, 204, 3902-3910.	4.8	24
47	Residual micro-stress distributions in heat-pressed ceramic on zirconia and porcelain-fused to metal systems: Analysis by FIB-DIC ring-core method and correlation with fracture toughness. <i>Dental Materials</i> , 2015, 31, 1396-1405.	3.5	23
48	Laser-induced crystallization of amorphous silicon-carbon alloys studied by Raman microspectroscopy. <i>Applied Surface Science</i> , 1999, 138-139, 24-28.	6.1	21
49	Residual stress measurement in thin films using the semi-destructive ring-core drilling method using Focused Ion Beam. <i>Procedia Engineering</i> , 2011, 10, 2190-2195.	1.2	21
50	Effect of micro-droplets on the local residual stress field in CAE-PVD thin coatings. <i>Surface and Coatings Technology</i> , 2013, 215, 407-412.	4.8	20
51	Thermal and microchemical characterisations of CaSO <sub>4</sub> -SiO <sub>2</sub> investment materials for casting jewellery alloys. <i>Thermochimica Acta</i> , 1998, 321, 175-183.	2.7	18
52	Superconducting and microstructural studies on sputtered niobium thin films for accelerating cavity applications. <i>Superconductor Science and Technology</i> , 2008, 21, 125026.	3.5	18
53	Power transformer fire and environmental risk reduction by using natural esters. , 2017, , .		18
54	Effects of Residual Stress Distribution on Interfacial Adhesion of Magnetron Sputtered AlN and AlN/Al Nanostructured Coatings on a (100) Silicon Substrate. <i>Nanomaterials</i> , 2018, 8, 896.	4.1	18

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55	X-ray diffraction study of microstructural changes during fatigue damage initiation in steel pipes. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2012, 532, 158-166.	5.6	17
56	Decentralized Hybrid Model Predictive Control of a Formation of Unmanned Aerial Vehicles. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2011, 44, 11900-11906.	0.4	16
57	Flame treatment on plastic: A new surface free energy statistical prediction model and characterization of treated surfaces. <i>Applied Surface Science</i> , 2011, 257, 2148-2158.	6.1	16
58	An easy way to measure surface free energy by drop shape analysis. <i>Measurement: Journal of the International Measurement Confederation</i> , 2012, 45, 317-324.	5.0	16
59	A method to improve the quality of 2.5 dimensional micro-and nano-structures produced by focused ion beam machining. <i>Micron</i> , 2017, 101, 8-15.	2.2	16
60	TiAlN coatings by Reactive High Power Impulse Magnetron Sputtering: film/substrate interface effect on residual stress and high temperature oxidation. <i>Surface and Coatings Technology</i> , 2018, 354, 56-65.	4.8	16
61	Modeling of Erosion Response of Cold-Sprayed In718-Ni Composite Coating Using Full Factorial Design. <i>Coatings</i> , 2020, 10, 335.	2.6	16
62	The Vortex Path Model Analysis of the Field Angle Dependence of the Critical Current Density in Nanocomposite YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7-x</sub> BaZrO <sub>3</sub> Films Obtained by Low Fluorine Chemical Solution Deposition. <i>Journal of Superconductivity and Novel Magnetism</i> , 2014, 27, 2493-2500.	1.8	15
63	Structural, morphological and mechanical characterization of Mo sputtered coatings. <i>Surface and Coatings Technology</i> , 2015, 266, 14-21.	4.8	15
64	Surface Analysis and Osteoblasts Response of a Titanium Oxi-Carbide Film Deposited on Titanium by Ion Plating Plasma Assisted (IPPA). <i>Journal of Nanoscience and Nanotechnology</i> , 2011, 11, 8754-8762.	0.9	13
65	An Innovative Non-contact Method to Determine Surface Free Energy on Micro-areas. <i>Journal of Adhesion Science and Technology</i> , 2012, 26, 131-150.	2.6	13
66	Laser-assisted welding of transparent polymers for microchemical engineering and life science. , 2005, , .		12
67	X-ray diffraction study of microstructural changes during fatigue damage initiation in pipe steels: Role of the initial dislocation structure. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013, 580, 1-12.	5.6	12
68	Quantitative multi-scale characterization of single basalt fibres: Insights into strength loss mechanisms after thermal conditioning. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 797, 139963.	5.6	12
69	Biocompatibility and antibacterial properties of TiCu(Ag) thin films produced by physical vapor deposition magnetron sputtering. <i>Applied Surface Science</i> , 2022, 573, 151604.	6.1	12
70	Titanium carbide films obtained by conversion of sputtered titanium on high carbon steel. <i>Surface and Coatings Technology</i> , 2006, 200, 5447-5454.	4.8	11
71	Analysis of data from various indentation techniques for thin films intrinsic hardness modelling. <i>Thin Solid Films</i> , 2008, 516, 1964-1971.	1.8	11
72	On the Influence of Residual Stress on Nano-Mechanical Characterization of Thin Coatings. <i>Journal of Nanoscience and Nanotechnology</i> , 2011, 11, 8864-8872.	0.9	11

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73	Graded selective coatings based on zirconium and titanium oxynitride. Journal Physics D: Applied Physics, 2009, 42, 115406.	2.8	10
74	A New Methodology For In-Situ Residual Stress Measurement In MEMS Structures. AIP Conference Proceedings, 2010, , .	0.4	10
75	Role of grain boundaries and micro-defects on the mechanical response of a crystalline rock at multiscale. International Journal of Rock Mechanics and Minings Sciences, 2014, 71, 429-441.	5.8	8
76	Behavior of nitrided and carburized AISI 904 stainless steels under severe light ion beam irradiation with plasma focus. Surface and Interface Analysis, 2015, 47, 728-737.	1.8	8
77	10B enriched film deposited by e-beam technique on Al <sub>2</sub> O <sub>3</sub> substrate for high efficiency thermal neutron detector. Surface and Coatings Technology, 2015, 265, 160-165.	4.8	8
78	Influence of the Silver Content on Mechanical Properties of Ti-Cu-Ag Thin Films. Nanomaterials, 2021, 11, 435.	4.1	8
79	Effectiveness and Compatibility of Nanoparticle Based Multifunctional Coatings on Natural and Man-Made Stones. Coatings, 2021, 11, 480.	2.6	8
80	Characterization of vanadium oxide on ZrO <sub>2</sub> -based catalyst precursors. Physical Chemistry Chemical Physics, 2003, 5, 4974.	2.8	7
81	Study on the Correlation between Microstructure Corrosion and Wear Resistance of Ag-Cu-Ge Alloys. Coatings, 2015, 5, 78-94.	2.6	7
82	Dense and Cellular Zirconia Produced by Gel Casting with Agar: Preparation and High Temperature Characterization. Journal of Nanomaterials, 2013, 2013, 1-11.	2.7	6
83	Investigation on Failure in Thermal Barrier Coatings on Gas Turbine First-Stage Rotor Blade. Journal of Failure Analysis and Prevention, 2018, 18, 1062-1072.	0.9	6
84	Fire simulation tests of mineral oil and natural esters transformers. , 2019, , .		6
85	A Nanoindentation Approach for Time-Dependent Evaluation of Surface Free Energy in Micro- and Nano-Structured Titanium. Materials, 2022, 15, 287.	2.9	6
86	ON THE MEASUREMENT AND INTERPRETATION OF RESIDUAL STRESS AT THE MICRO-SCALE. International Journal of Modern Physics B, 2010, 24, 1-9.	2.0	5
87	Niobium niobium oxide multilayered coatings for corrosion protection of proton-irradiated liquid water targets for [18F] production. Thin Solid Films, 2015, 591, 316-322.	1.8	5
88	EB/UV treatment of protective coatings for porous materials. Radiation Physics and Chemistry, 2000, 57, 393-397.	2.8	4
89	Influence of Si, Ni and Co additions on gold alloy for investment cast process. Journal of Alloys and Compounds, 2001, 325, 252-258.	5.5	4
90	Elastic anisotropy of coatings by AFM analysis of microindentations. Surface Engineering, 2014, 30, 41-47.	2.2	4

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91	X-Ray Diffraction Study of Microstructural Changes During Fatigue Damage Initiation in Steel Pipes. , 2012, , .		3
92	Growth and Characterization of La <sub>2</sub> Zr <sub>2</sub> O <sub>7</sub> Buffer Layers Deposited by Chemical Solution Deposition. Physics Procedia, 2012, 36, 1552-1557.	1.2	3
93	On the use of copper-based substrates for YBCO coated conductors. Journal of Physics: Conference Series, 2014, 507, 022048.	0.4	3
94	Depth profiling and morphological characterization of AlN thin films deposited on Si substrates using a reactive sputter magnetron. EPJ Applied Physics, 2014, 67, 21301.	0.7	3
95	Toward a Fatigue Life Assessment of Steel Pipes Based on X-Ray Diffraction Measurements. , 2015, , .		3
96	Atomic layer deposition of semiconductor oxides on electric sail tethers. Thin Solid Films, 2017, 621, 195-201.	1.8	3
97	Influence of the microstructure on the diffusion barrier performance of Nb-based coatings for cyclotron targets. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2019, 37, 051510.	2.1	3
98	Packed and Monolithic Reactors for the Dry Reforming of Methane: Ni Supported on $\gamma$ -Al <sub>2</sub> O <sub>3</sub> Promoted by Ru. Advanced Science Letters, 2017, 23, 5977-5979.	0.2	3
99	Rapid solidification of plasma sprayed advanced materials: nanostructure characterisation. International Journal of Materials and Product Technology, 2004, 20, 377.	0.2	2
100	Focused ion beam and transmission electron microscopy as a powerful tool to understand localized corrosion phenomena. Corrosion Reviews, 2011, 29, .	2.0	2
101	Focused Ion Beam and Nanomechanical Tests for High Resolution Surface Characterisation: New Resources for Platinum Group Metals Testing. Platinum Metals Review, 2014, 58, 3-19.	1.2	2
102	(\$ \begin{array}{ccc} 1 & \& 0 & \& 1 \end{array} \$) preferential orientation of polycrystalline AlN grown on SiO <sub>2</sub> /Si wafers by reactive sputter magnetron technique. EPJ Applied Physics, 2016, 74, 10301.	0.7	2
103	Investigations into fatigue failure in e-type fastening clips used in railway tracks. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2021, 235, 898-905.	2.0	2
104	Multifaceted Approach for Characterization of Solid Residues from Sludge Incineration. Water, Air, and Soil Pollution, 2004, 158, 193-205.	2.4	1
105	The fire assay reloaded. Gold Bulletin, 2013, 47, 9.	2.4	1
106	Discussion on $\alpha$ -Interfacial Residual Stress Analysis of Thermal Spray Coatings by Miniature Ring-Core Cutting Combined with DIC Method $\bullet$ by J.G. Zhu et al., Experimental Mechanics DOI:10.1007/s11340-012-9640-2. Experimental Mechanics, 2014, 54, 1305-1306.	2.0	1
107	Contraintes rÃ©siduelles et comportement mÃ©canique de revÃªtements nickel-bore. Materiaux Et Techniques, 2019, 107, 205.	0.9	1
108	The role of chemistry in the research on advanced materials in Italy (I). The ZIC paradigm. Materials Technology, 1996, 3, 85-109.	0.3	0

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109	Complex wear measurement on thin coatings by the cratering method. Lubrication Science, 2009, 21, 269-288.	2.1	0
110	X-Ray Diffraction Study of Microstructural Changes During Fatigue Damage in Steel Pipelines. , 2012, , .		0
111	Nanomechanical Characterization of Brittle Rocks. Solid Mechanics and Its Applications, 2014, , 209-229.	0.2	0
112	Thin-film deposition and characterization for neutron detection applications. European Physical Journal Plus, 2015, 130, 1.	2.6	0
113	Prototyping fishnet metamaterials: alumina-silver-based structures. , 2015, , .		0
114	Synchrotron Radiation Applied to Real-Time Studies of the Kinetics of Growth of Aluminum Nitride Thin Multilayers. Journal of Physical Chemistry B, 2019, 123, 1679-1687.	2.6	0
115	Verification of Layered Structures in SnO <sub>2</sub> /Metal-based Gas Sensors by X-ray Microanalysis: Comparison with X-ray Photoelectron Spectroscopy. Microscopy and Microanalysis, 2001, 7, 518-525.	0.4	0
116	Development of a Duplex Coating Procedure (HVOF and PVD) on Ti-6Al-4V Substrate for Automotive Applications.. , 0, , 145-158.		0
117	Basaltic Glass Fibers from Industrial Wastes: A Laboratory-Scale Technical Feasibility Study. Crystals, 2022, 12, 359.	2.2	0
118	Load Bearing Capacity And Failure Modes Analysis Of PVD/HVOF Duplex Coatings. , 0, , 25-34.		0
119	Pure And Substituted Hydroxyapatite Nanopowders By Precipitation. , 0, , 65-74.		0
120	Verification of Layered Structures in SnO <sub>2</sub> /Metal-based Gas Sensors by X-ray Microanalysis: Comparison with X-ray Photoelectron Spectroscopy. Microscopy and Microanalysis, 2001, 7, 518-525.	0.4	0