

# Frank Gaertner

## List of Publications by Year in descending order

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95  
papers

7,278  
citations

109321

35  
h-index

54911

84  
g-index

96  
all docs

96  
docs citations

96  
times ranked

2232  
citing authors

#	ARTICLE	IF	CITATIONS
1	Bonding mechanism in cold gas spraying. Acta Materialia, 2003, 51, 4379-4394.	7.9	1,388
2	Development of a generalized parameter window for cold spray deposition. Acta Materialia, 2006, 54, 729-742.	7.9	930
3	Cold spraying " A materials perspective. Acta Materialia, 2016, 116, 382-407.	7.9	607
4	From Particle Acceleration to Impact and Bonding in Cold Spraying. Journal of Thermal Spray Technology, 2009, 18, 794.	3.1	460
5	On Parameter Selection in Cold Spraying. Journal of Thermal Spray Technology, 2011, 20, 1161-1176.	3.1	300
6	The Cold Spray Process and Its Potential for Industrial Applications. Journal of Thermal Spray Technology, 2006, 15, 223-232.	3.1	262
7	The 2016 Thermal Spray Roadmap. Journal of Thermal Spray Technology, 2016, 25, 1376-1440.	3.1	243
8	Microstructural and macroscopic properties of cold sprayed copper coatings. Journal of Applied Physics, 2003, 93, 10064-10070.	2.5	213
9	Microstructures and key properties of cold-sprayed and thermally sprayed copper coatings. Surface and Coatings Technology, 2006, 200, 4947-4960.	4.8	185
10	Mechanical properties of cold-sprayed and thermally sprayed copper coatings. Surface and Coatings Technology, 2006, 200, 6770-6782.	4.8	185
11	New Developments in Cold Spray Based on Higher Gas and Particle Temperatures. Journal of Thermal Spray Technology, 2006, 15, 488-494.	3.1	157
12	Microstructural bonding features of cold sprayed face centered cubic metals. Journal of Applied Physics, 2004, 96, 4288-4292.	2.5	136
13	Influence of Impact Angle and Gas Temperature on Mechanical Properties of Titanium Cold Spray Deposits. Journal of Thermal Spray Technology, 2011, 20, 234-242.	3.1	124
14	Formation of persistent dislocation loops by ultra-high strain-rate deformation during cold spraying. Acta Materialia, 2005, 53, 2991-3000.	7.9	98
15	Application of the CALPHAD method for the prediction of amorphous phase formation. Journal of the Less Common Metals, 1988, 145, 19-29.	0.8	87
16	Influence of thermal properties and temperature of substrate on the quality of cold-sprayed deposits. Acta Materialia, 2017, 127, 287-301.	7.9	79
17	Single Impact Bonding of Cold Sprayed Ti-6Al-4V Powders on Different Substrates. Journal of Thermal Spray Technology, 2015, 24, 644-658.	3.1	78
18	Simulation of Solid Particle Impact Behavior for Spray Processes. Materials Transactions, 2006, 47, 1697-1702.	1.2	71

#	ARTICLE	IF	CITATIONS
19	Formation of Cold-Sprayed Ceramic Titanium Dioxide Layers on Metal Surfaces. <i>Journal of Thermal Spray Technology</i> , 2011, 20, 292-298.	3.1	71
20	Application of microstructure-selection maps to droplet solidification: a case study of the Ni-Cu system. <i>Acta Materialia</i> , 1998, 46, 3355-3370.	7.9	62
21	Analysis of Thermal History and Residual Stress in Cold-Sprayed Coatings. <i>Journal of Thermal Spray Technology</i> , 2014, 23, 84-90.	3.1	60
22	Comment on "Adiabatic shear instability is not necessary for adhesion in cold spray". <i>Scripta Materialia</i> , 2019, 162, 512-514.	5.2	59
23	Microstructure and phase selection in containerless processing of Fe-Ni droplets. <i>Acta Materialia</i> , 1998, 46, 4657-4670.	7.9	58
24	Phase selection, growth, and interface kinetics in undercooled Fe-Ni melt droplets. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1997, 226-228, 410-414.	5.6	57
25	High strain rate deformation microstructures of stainless steel 316L by cold spraying and explosive powder compaction. <i>Applied Physics A: Materials Science and Processing</i> , 2008, 90, 517-526.	2.3	55
26	Thermal stability of nanocrystalline nickel-18 at.% tungsten alloy investigated with the tomographic atom probe. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2003, 353, 74-79.	5.6	53
27	Microstructure and mechanical properties of medium-carbon steel bonded on low-carbon steel by explosive welding. <i>Materials and Design</i> , 2016, 89, 369-376.	7.0	50
28	A Review of Advanced Composite and Nanostructured Coatings by Solid-State Cold Spraying Process. <i>Critical Reviews in Solid State and Materials Sciences</i> , 2019, 44, 109-156.	12.3	50
29	Cold Spraying of Ti <sub>2</sub> AlC MAX-Phase Coatings. <i>Journal of Thermal Spray Technology</i> , 2013, 22, 406-412.	3.1	49
30	Effect of Substrate Temperature on Cold-Gas-Sprayed Coatings on Ceramic Substrates. <i>Journal of Thermal Spray Technology</i> , 2013, 22, 422-432.	3.1	47
31	High resolution microstructure analysis of the decomposition of Cu <sub>90</sub> Co <sub>10</sub> alloys. <i>Acta Materialia</i> , 1996, 44, 2567-2579.	7.9	43
32	Microstructure development during rapid solidification of highly supersaturated Cu-Co alloys. <i>Acta Metallurgica Et Materialia</i> , 1995, 43, 3467-3475.	1.8	42
33	Recent Developments and Potential Applications of Cold Spraying. <i>Advanced Engineering Materials</i> , 2006, 8, 611-618.	3.5	41
34	Impact Conditions for Cold Spraying of Hard Metallic Glasses. <i>Journal of Thermal Spray Technology</i> , 2012, 21, 531-540.	3.1	40
35	Microstructures of dilute Ni-C alloys obtained from undercooled droplets. <i>Journal of Crystal Growth</i> , 1997, 173, 528-540.	1.5	38
36	Metallization of Thin Al <sub>2</sub> O <sub>3</sub> Layers in Power Electronics Using Cold Gas Spraying. <i>Journal of Thermal Spray Technology</i> , 2011, 20, 299-306.	3.1	36

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37	Tailoring cold spray additive manufacturing of steel 316 L for static and cyclic load-bearing applications. <i>Materials and Design</i> , 2021, 203, 109575.	7.0	33
38	Determination of the free energy of equilibrium and metastable phases in the Cu–Zr system. <i>Materials Science and Engineering</i> , 1988, 97, 79-81.	0.1	31
39	Two-body abrasive wear of nano- and microcrystalline Ti–Ni-based thermal spray coatings. <i>Surface and Coatings Technology</i> , 2006, 200, 5037-5047.	4.8	31
40	Determination of plastic constitutive properties of microparticles through single particle compression. <i>Advanced Powder Technology</i> , 2015, 26, 1544-1554.	4.1	31
41	Texture analysis of the development of microstructure in Cu–30 at.% Ni alloy droplets solidified at selected undercoolings. <i>Acta Materialia</i> , 1997, 45, 51-66.	7.9	29
42	Production of nanocrystalline cermet thermal spray powders for wear resistant coatings by high-energy milling. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2003, 356, 114-121.	5.6	27
43	Thermodynamic stability of nanocrystalline palladium. <i>Scripta Materialia</i> , 1996, 35, 805-810.	5.2	25
44	Photocatalytic degradation of oxalic and dichloroacetic acid on TiO <sub>2</sub> coated metal substrates. <i>Catalysis Today</i> , 2013, 209, 84-90.	4.4	24
45	Influence of spraying parameters on cold gas spraying of iron aluminide intermetallics. <i>Surface and Coatings Technology</i> , 2015, 268, 99-107.	4.8	24
46	Advanced Alumina Composites Reinforced with Titanium-Based Alloys. <i>Journal of the American Ceramic Society</i> , 2001, 84, 1509-1513.	3.8	23
47	Microstructures and properties of nanostructured thermal sprayed coatings using high-energy milled cermet powders. <i>Surface and Coatings Technology</i> , 2005, 195, 344-357.	4.8	22
48	Processing and Properties of Intermetallic/Ceramic Composites with Interpenetrating Microstructure. <i>Journal of the American Ceramic Society</i> , 1998, 81, 2504-2506.	3.8	22
49	Basic principles and application potentials of cold gas spraying. <i>Materialwissenschaft Und Werkstofftechnik</i> , 2010, 41, 575-584.	0.9	22
50	Optimization Adhesion in Cold Spraying onto Hard Substrates: A Case Study for Brass Coatings. <i>Journal of Thermal Spray Technology</i> , 2019, 28, 124-134.	3.1	21
51	Influence of process parameters on the quality of thermally sprayed X46Cr13 stainless steel coatings. <i>Journal of the Brazilian Society of Mechanical Sciences and Engineering</i> , 2004, 26, 98-106.	1.6	20
52	Particle Compression Test: A Key Step towards Tailoring of Feedstock Powder for Cold Spraying. <i>Coatings</i> , 2020, 10, 458.	2.6	20
53	Property prediction and crack growth behavior in cold sprayed Cu deposits. <i>Materials and Design</i> , 2021, 206, 109826.	7.0	20
54	Size Effects of Brittle Particles in Aerosol Deposition—Molecular Dynamics Simulation. <i>Journal of Thermal Spray Technology</i> , 2021, 30, 503-522.	3.1	19

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55	Optimization of Inconel 718 thick deposits by cold spray processing and annealing. Surface and Coatings Technology, 2019, 378, 124997.	4.8	18
56	Thermodynamics of Homogeneous Crystal Nucleation in Al-RE Metallic Glasses. Materials Science Forum, 1998, 269-272, 553-558.	0.3	17
57	Spinodal decomposition of CuCo alloys. Physica Status Solidi A, 1993, 138, 157-174.	1.7	16
58	Strain-Induced Phase Transformation of MCrAlY. Advanced Engineering Materials, 2015, 17, 723-731.	3.5	16
59	Features of ceramic nanoparticle deformation in aerosol deposition explored by molecular dynamics simulation. Surface and Coatings Technology, 2022, 429, 127886.	4.8	16
60	Effect of nitrogen flow rate on microstructures and mechanical properties of metallic coatings by warm spray deposition. Surface and Coatings Technology, 2013, 232, 587-599.	4.8	15
61	Patterned CoCrMo and Al <sub>2</sub> O <sub>3</sub> surfaces for reduced free wear debris in artificial joint arthroplasty. Journal of Biomedical Materials Research - Part A, 2013, 101, 3447-3456.	4.0	15
62	Solid-state additive manufacturing of porous Ti-6Al-4V by supersonic impact. Applied Materials Today, 2020, 21, 100865.	4.3	15
63	Cold Spraying of Cu-Al-Bronze for Cavitation Protection in Marine Environments. Journal of Thermal Spray Technology, 2015, 24, 126.	3.1	13
64	Mechanically induced grain refinement, recovery and recrystallization of cold-sprayed iron aluminide coatings. Surface and Coatings Technology, 2019, 380, 125069.	4.8	12
65	Influence of MAX-Phase Deformability on Coating Formation by Cold Spraying. Journal of Thermal Spray Technology, 2021, 30, 617-642.	3.1	11
66	Determination of the Free Energy of Metallic Glasses*. Zeitschrift Fur Physikalische Chemie, 1988, 157, 29-34.	2.8	10
67	Phase separation in amorphous Zr-Co and Zr-Fe alloys. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1997, 76, 511-517.	0.6	10
68	Advances in cold spraying. Surface Engineering, 2006, 22, 161-163.	2.2	10
69	Present Status and Future Prospects of Cold Spraying. Materials Science Forum, 0, 534-536, 433-436.	0.3	10
70	Cold Spraying of Amorphous Cu <sub>50</sub> Zr <sub>50</sub> Alloys. Journal of Thermal Spray Technology, 2014, 24, 108.	3.1	10
71	Process Selection for the Fabrication of Cavitation Erosion-Resistant Bronze Coatings by Thermal and Kinetic Spraying in Maritime Applications. Journal of Thermal Spray Technology, 2021, 30, 1310-1328.	3.1	10
72	The application of micro structure-selection maps to droplet solidification. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1997, 226-228, 48-52.	5.6	9

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73	Warm Spraying of High-Strength Ni-Al-Bronze: Cavitation Characteristics and Property Prediction. Journal of Thermal Spray Technology, 2017, 26, 265-277.	3.1	9
74	Coating formation, fracture mode and cavitation performance of Fe40Al deposited by cold gas spraying. Surface Engineering, 2015, 31, 853-859.	2.2	7
75	Texture analyses of levitated Fe69Ni30Cr1 droplets. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1997, 226-228, 307-311.	5.6	6
76	Cold spraying of Cu-Al-Bronze for cavitation protection in marine environments. Materialwissenschaft Und Werkstofftechnik, 2014, 45, 708-716.	0.9	6
77	Kinetic Spraying of Brittle Materials: From Layer Formation to Applications in Aerosol Deposition and Cold Gas Spraying. Journal of Thermal Spray Technology, 2021, 30, 471-479.	3.1	6
78	Cold Gas Sprayed TiO <sub>2</sub> -Based Electrodes for the Photo-Induced Water Oxidation. ECS Transactions, 2014, 58, 21-30.	0.5	5
79	Influence of Melt Undercooling on the Microstructure of Fe-Ni Droplets Produced in the Cambridge 6.5 m Drop-Tube. Materials Science Forum, 1996, 215-216, 21-28.	0.3	4
80	Nanocrystalline Composites for Thermal Spray Applications. Journal of Metastable and Nanocrystalline Materials, 2000, 8, 933-940.	0.1	4
81	Nanocrystalline Composites for Thermal Spray Applications. Materials Science Forum, 2000, 343-346, 933-940.	0.3	4
82	Advanced Alumina Composites Reinforced with Nb-Based Alloys. Advanced Engineering Materials, 2002, 4, 121.	3.5	4
83	TiC-Based Cermet Coatings: Advanced Wear Performance by Nanocrystalline Microstructure. Advanced Engineering Materials, 2006, 8, 427-433.	3.5	4
84	Aerosol Deposition of Ti <sub>3</sub> SiC <sub>2</sub> -MAX-Phase Coatings. Journal of Thermal Spray Technology, 2021, 30, 1121-1135.	3.1	4
85	Use of Texture Analysis for the Characterisation of Cu - 30 at.% Ni Droplets Solidified at Selected Undercoolings. Materials Science Forum, 1996, 215-216, 29-36.	0.3	3
86	Aerosol-Deposited BiVO <sub>4</sub> Photoelectrodes for Hydrogen Generation. Journal of Thermal Spray Technology, 2021, 30, 603-616.	3.1	3
87	THERMODYNAMICS OF STABLE AND METASTABLE PHASES IN THE Ni-Zr AND THE Co-Zr SYSTEM AND THEIR APPLICATION TO AMORPHOUS PHASE FORMATION. Journal De Physique Colloque, 1990, 51, C4-95-C4-99.	0.2	3
88	Determination of the Chemical Potentials of Highly Supersaturated Cu-Co Alloys. Materials Research Society Symposia Proceedings, 1995, 400, 119.	0.1	2
89	Competitive Phase Selection in Fe-Ni Alloy Droplets. Materials Research Society Symposia Proceedings, 1995, 398, 51.	0.1	1
90	Cold gas spraying of semiconductor coatings for the photooxidation of water. Proceedings of SPIE, 2013, , , .	0.8	1

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91	Knowledge-based Optimization of Cold Spray for Aircraft Component Repair. , 2021, , .		1
92	Decomposition of Unstable Supersaturated Cu <sub>90</sub> Co <sub>10</sub> Solid Solutions. Materials Research Society Symposia Proceedings, 1995, 400, 125.	0.1	0
93	An Investigation of Grain Refinement in Deeply Undercooled Alloy Droplets Using Texture Analysis. Materials Research Society Symposia Proceedings, 1995, 398, 63.	0.1	0
94	Mechanical Properties of Intermetallic/Ceramic Composites Prepared by High Energy Milling. Journal of Metastable and Nanocrystalline Materials, 1999, 2-6, 575-580.	0.1	0
95	Preparation and Properties of Novel Nb- and Ti-Based Metal Reinforced Alumina Composites with Interpenetrating Microstructure. , 2006, , 213-218.		0