

# Peter C Collins

## List of Publications by Year in descending order

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69  
papers

2,656  
citations

201674

27  
h-index

189892

50  
g-index

75  
all docs

75  
docs citations

75  
times ranked

2198  
citing authors

#	ARTICLE	IF	CITATIONS
1	Microstructural Control of Additively Manufactured Metallic Materials. Annual Review of Materials Research, 2016, 46, 63-91.	9.3	309
2	Direct laser deposition of alloys from elemental powder blends. Scripta Materialia, 2001, 45, 1123-1129.	5.2	165
3	Laser deposition of compositionally graded titanium-vanadium and titanium-molybdenum alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 352, 118-128.	5.6	162
4	Predicting tensile properties of Ti-6Al-4V produced via directed energy deposition. Acta Materialia, 2017, 133, 120-133.	7.9	161
5	Microstructural evolution in laser deposited compositionally graded $\beta/\alpha$ titanium-vanadium alloys. Acta Materialia, 2003, 51, 3277-3292.	7.9	146
6	Direct laser deposition of in situ Ti-6Al-4V-TiB composites. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 358, 343-349.	5.6	138
7	Non-classical homogeneous precipitation mediated by compositional fluctuations in titanium alloys. Acta Materialia, 2012, 60, 6247-6256.	7.9	129
8	Nanoscale TiB precipitates in laser deposited Ti-matrix composites. Scripta Materialia, 2005, 53, 1433-1437.	5.2	96
9	Formation of Grain Boundary $\beta$ in $\alpha/\beta$ Ti Alloys: Its Role in Deformation and Fracture Behavior of These Alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 645-650.	2.2	96
10	Development of methods for the quantification of microstructural features in $\beta$ -processed $\alpha/\beta$ titanium alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 508, 174-182.	5.6	91
11	Precipitation of grain boundary $\beta$ in a laser deposited compositionally graded Ti-8Al-xV alloy - an orientation microscopy study. Acta Materialia, 2004, 52, 377-385.	7.9	80
12	Microstructures and Grain Refinement of Additive-Manufactured Ti-xW Alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 3594-3605.	2.2	61
13	Development and application of a novel precession electron diffraction technique to quantify and map deformation structures in highly deformed materials - as applied to ultrafine-grained titanium. Acta Materialia, 2014, 79, 203-215.	7.9	58
14	Progress Toward an Integration of Process-Structure-Property-Performance Models for Additive Manufacturing of Titanium Alloys. Jom, 2014, 66, 1299-1309.	1.9	54
15	Laser Deposition of In Situ Ti-TiB Composites. Advanced Engineering Materials, 2002, 4, 847-851.	3.5	52
16	Oxidation behavior and microstructural decomposition of Ti-6Al-4V and Ti-6Al-4V-1B sheet. Corrosion Science, 2016, 112, 338-346.	6.6	52
17	The effect of boron on the grain size and texture in additively manufactured $\beta$ -Ti alloys. Journal of Materials Science, 2017, 52, 12455-12466.	3.7	52
18	Powder-based additive manufacturing - a review of types of defects, generation mechanisms, detection, property evaluation and metrology. International Journal of Additive and Subtractive Materials Manufacturing, 2017, 1, 172.	0.2	51

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19	Developing a phenomenological equation to predict yield strength from composition and microstructure in $\beta^2$ processed Ti-6Al-4V. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 660, 172-180.	5.6	48
20	Neural Networks Relating Alloy Composition, Microstructure, and Tensile Properties of $\beta^2$ -Processed TIMETAL 6-4. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2013, 44, 1441-1453.	2.2	43
21	The influence of the enthalpy of mixing during the laser deposition of complex titanium alloys using elemental blends. <i>Scripta Materialia</i> , 2003, 48, 1445-1450.	5.2	40
22	Comparison of microstructural evolution in laser-deposited and arc-melted In-Situ Ti-TiB composites. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2004, 35, 2143-2152.	2.2	38
23	Phase evolution in laser-deposited titanium-chromium alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2002, 33, 2129-2138.	2.2	33
24	Microscale phase field modeling of the martensitic transformation during cyclic loading of NiTi single crystal. <i>International Journal of Solids and Structures</i> , 2018, 146, 80-96.	2.7	33
25	Modeling of Ti-W Solidification Microstructures Under Additive Manufacturing Conditions. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2017, 48, 3606-3622.	2.2	32
26	Comparison of the Detection Limits of EDS and EELS in S/TEM. <i>Microscopy and Microanalysis</i> , 2010, 16, 1312-1313.	0.4	28
27	A Constitutive Equation Relating Composition and Microstructure to Properties in Ti-6Al-4V: As Derived Using a Novel Integrated Computational Approach. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2015, 46, 5021-5037.	2.2	28
28	Sensitization and remediation effects on environmentally assisted cracking of Al-Mg naval alloys. <i>Corrosion Science</i> , 2018, 138, 219-241.	6.6	28
29	3D electron backscatter diffraction study of $\beta^2$ lath morphology in additively manufactured Ti-6Al-4V. <i>Ultramicroscopy</i> , 2020, 218, 113073.	1.9	25
30	In situ nitridation of titanium-molybdenum alloys during laser deposition. <i>Journal of Materials Science</i> , 2012, 47, 7157-7166.	3.7	24
31	Yield Strength Prediction of Titanium Alloys. <i>Jom</i> , 2015, 67, 1357-1361.	1.9	24
32	Determination of the five parameter grain boundary character distribution of nanocrystalline alpha-zirconium thin films using transmission electron microscopy. <i>Acta Materialia</i> , 2017, 130, 164-176.	7.9	19
33	On the eutectoid transformation behavior of the Ti-Zn system and its metastable phases. <i>Journal of Alloys and Compounds</i> , 2017, 718, 22-27.	5.5	18
34	A novel tool to assess the influence of alloy composition on the oxidation behavior and concurrent oxygen-induced phase transformations for binary Ti-xMo alloys at 650°C. <i>Corrosion Science</i> , 2014, 89, 295-306.	6.6	17
35	A new combinatorial approach to assess the influence of alloy composition on the oxidation behavior and concurrent oxygen-induced phase transformations for binary Ti-xCr alloys at 650°C. <i>Corrosion Science</i> , 2015, 97, 150-160.	6.6	14
36	Tensile behavior of laser treated Fe-Si-B metallic glass. <i>Journal of Applied Physics</i> , 2015, 118, .	2.5	12

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37	Discovery via Integration of Experimentation and Modeling: Three Examples for Titanium Alloys. <i>Jom</i> , 2015, 67, 164-178.	1.9	12
38	New Nomenclatures for Heat Treatments of Additively Manufactured Titanium Alloys. <i>Jom</i> , 2017, 69, 1221-1227.	1.9	12
39	Evaluation of Ti-Mn Alloys for Additive Manufacturing Using High-Throughput Experimental Assays and Gaussian Process Regression. <i>Materials</i> , 2020, 13, 4641.	2.9	12
40	Characterization of the near-surface nanocrystalline microstructure of ultrasonically treated Ti-6Al-4V using ASTAR <sub>4</sub> /precession electron diffraction technique. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 688, 524-531.	5.6	11
41	Understanding the Interdependencies Between Composition, Microstructure, and Continuum Variables and Their Influence on the Fracture Toughness of $\hat{1}\pm/\hat{1}^2$ -Processed Ti-6Al-4V. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018, 49, 848-863.	2.2	11
42	Texture Analysis of Additively Manufactured Ti-6Al-4V Deposited Using Different Scanning Strategies. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2020, 51, 6574-6583.	2.2	10
43	Revisiting (Some of) the Lasting Impacts of the Liberty Ships via a Metallurgical Analysis of Rivets from the SS "John W. Brown". <i>Jom</i> , 2015, 67, 2965-2975.	1.9	9
44	Nondestructive evaluation of additively manufactured metallic parts. , 2019, , 401-417.		9
45	Grain orientation effects on delamination during fatigue of a sensitized Al-Mg alloy. <i>Philosophical Magazine Letters</i> , 2015, 95, 526-533.	1.2	8
46	Crystallisation behaviour during tensile loading of laser treated Fe-Si-B metallic glass. <i>Philosophical Magazine</i> , 2017, 97, 497-514.	1.6	8
47	Spherical pores as "microstructural informants": Understanding compositional, thermal, and mechanical gyrations in additively manufactured Ti-6Al-4V. <i>Scripta Materialia</i> , 2021, 198, 113827.	5.2	8
48	On the use of a sub-scale thermomechanical simulator to obtain accurate tensile properties of $(\hat{1}\pm+\hat{1}^2)$ - and $\hat{1}^2$ -processed Ti-6Al-4V. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2009, 513-514, 357-365.	5.6	7
49	New observations of a nanoscaled pseudomorphic bcc Co phase in bulk Co-Al-(W,Ta) superalloys. <i>Acta Materialia</i> , 2014, 69, 92-104.	7.9	7
50	3D electron backscatter diffraction characterization of fine $\hat{1}\pm$ titanium microstructures: collection, reconstruction, and analysis methods. <i>Ultramicroscopy</i> , 2021, 230, 113394.	1.9	7
51	Characterizing the nano-structure and defect structure of nano-scaled non-ferrous structural alloys. <i>Materials Characterization</i> , 2016, 113, 222-231.	4.4	6
52	Probability and Statistical Modeling: Ti-6Al-4V Produced via Directed Energy Deposition. <i>Journal of Materials Engineering and Performance</i> , 2021, 30, 6905-6912.	2.5	6
53	Nanocrystalline orientation and phase mapping of textured coatings revealed by precession electron diffraction. <i>Nanomaterials and Energy</i> , 2012, 1, 318-323.	0.2	5
54	On the role of composition and processing parameters on the microstructure evolution of Ti-xMo alloys. <i>BMC Chemistry</i> , 2019, 13, 5.	3.8	5

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55	On the Prediction of Uniaxial Tensile Behavior Beyond the Yield Point of Wrought and Additively Manufactured Ti-6Al-4V. Integrating Materials and Manufacturing Innovation, 2022, 11, 327-338.	2.6	4
56	Systematic Assessment of the Influence of Mo Concentration on the Oxygen Ingress in Ti-Mo System During High Temperature Oxidation. Oxidation of Metals, 2016, 85, 357-368.	2.1	3
57	Developing and applying ICME + modeling tools to predict performance of additively manufactured aerospace parts. , 2019, , 375-400.		3
58	Oxidation behavior of binary Ti-xW (0 ≤ x ≤ 30, wt%) alloys at 650 °C as a function of W concentration. Corrosion Science, 2016, 111, 531-540.	6.6	2
59	On the influence of alloy composition on the oxidation performance and oxygen-induced phase transformations in Ti-(0-8) wt%Al alloys. Journal of Materials Science, 2016, 51, 3684-3692.	3.7	2
60	Engineered, Spatially Varying Isothermal Holds: Enabling Combinatorial Studies of Temperature Effects, as Applied to Metastable Titanium Alloy Ti-21S. Metallography, Microstructure, and Analysis, 2017, 6, 216-220.	1.0	2
61	Microstructural Evaluation of LENS-Deposited Nb-Ti-Si-Cr Alloys. Materials Research Society Symposia Proceedings, 2002, 753, 1.	0.1	1
62	Microstructure Characterization and Mechanical Properties in Individual Zones of Linear Friction Welded Ti-6Al-4V Alloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 6294-6306.	2.2	1
63	Ti-6Al-4V microstructural orientation at different length scales as a function of scanning strategies in Electron Beam Melting in additive manufacturing. MATEC Web of Conferences, 2020, 321, 03031.	0.2	1
64	Predicting the tensile properties of additively manufactured Ti-6Al-4V via electron beam deposition. MATEC Web of Conferences, 2020, 321, 11083.	0.2	1
65	A Perspective of The Needs and Opportunities for Coupling Materials Science and Nondestructive Evaluation for Metals-Based Additive Manufacturing. Materials Evaluation, 2022, 80, 45-63.	0.2	1
66	Microstructures of LENS-Deposited Nb-Si Alloys. Materials Research Society Symposia Proceedings, 2004, 842, 108.	0.1	0
67	Direct Three-Dimensional Microstructural Characterization and Reconstruction Across Varying Length Scales in Ti-Ti <sub>2</sub> Titanium Alloys by Serial Sectioning Using a FEI DualBeam (FIB/SEM) and Robo-Met.3D. Microscopy and Microanalysis, 2008, 14, 974-975.	0.4	0
68	Application of Precession Electron Diffraction in Deformation Studies of Advanced Non-Ferrous Structural Alloys. Microscopy and Microanalysis, 2014, 20, 1454-1455.	0.4	0
69	Investigation of Tin (Sn) Film Using an Aerosol Jet Additive Manufacturing Deposition Process. Journal of Electronic Materials, 2017, 46, 5174-5182.	2.2	0