

Uwe Schulz

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/7354291/publications.pdf>

Version: 2024-02-01

120
papers

4,627
citations

126708

33
h-index

106150

65
g-index

125
all docs

125
docs citations

125
times ranked

2055
citing authors

#	ARTICLE	IF	CITATIONS
1	Some recent trends in research and technology of advanced thermal barrier coatings. Aerospace Science and Technology, 2003, 7, 73-80.	2.5	406
2	Processing science of advanced thermal-barrier systems. MRS Bulletin, 2012, 37, 903-910.	1.7	244
3	Review on Advanced EB-PVD Ceramic Topcoats for TBC Applications. International Journal of Applied Ceramic Technology, 2004, 1, 302-315.	1.1	230
4	Graded coatings for thermal, wear and corrosion barriers. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 362, 61-80.	2.6	191
5	Phase Transformation in EB-PVD Yttria Partially Stabilized Zirconia Thermal Barrier Coatings during Annealing. Journal of the American Ceramic Society, 2000, 83, 904-910.	1.9	189
6	EB-PVD processing of pyrochlore-structured La ₂ Zr ₂ O ₇ -based TBCs. Surface and Coatings Technology, 2004, 182, 175-183.	2.2	173
7	Influence of substrate material on oxidation behavior and cyclic lifetime of EB-PVD TBC systems. Surface and Coatings Technology, 2001, 146-147, 117-123.	2.2	172
8	EB-PVD Thermal Barrier Coatings for Aeroengines and Gas Turbines. Advanced Engineering Materials, 2001, 3, 193-204.	1.6	149
9	Microstructure of ZrO ₂ thermal barrier coatings applied by EB-PVD. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2000, 276, 1-8.	2.6	142
10	Protective coatings on stainless steel bipolar plates for proton exchange membrane (PEM) electrolyzers. Journal of Power Sources, 2016, 307, 815-825.	4.0	131
11	Microstructure and texture of EB-PVD TBCs grown under different rotation modes. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 360, 319-329.	2.6	126
12	Degradation of La ₂ Zr ₂ O ₇ and other novel EB-PVD thermal barrier coatings by CMAS (CaO-Al ₂ O ₃ -SiO ₂) and volcanic ash deposits. Surface and Coatings Technology, 2013, 235, 165-173.	2.2	125
13	Effect of morphology on thermal conductivity of EB-PVD PYSZ TBCs. Surface and Coatings Technology, 2006, 201, 2611-2620.	2.2	114
14	EB-PVD Y ₂ O ₃ - and -stabilized zirconia thermal barrier coatings " crystal habit and phase composition. Surface and Coatings Technology, 1996, 82, 259-269.	2.2	98
15	High-Temperature Corrosion of EB-PVD Yttria Partially Stabilized Zirconia Thermal Barrier Coatings with an Artificial Volcanic Ash Overlay. Journal of the American Ceramic Society, 2011, 94, 925-931.	1.9	94
16	Infrared-optical properties and heat transfer coefficients of semitransparent thermal barrier coatings. Surface and Coatings Technology, 2009, 203, 1059-1068.	2.2	88
17	The effect of coating thickness on the thermal conductivity of EB-PVD PYSZ thermal barrier coatings. Surface and Coatings Technology, 2006, 200, 5636-5644.	2.2	87
18	The effects of heat treatment and gas atmosphere on the thermal conductivity of APS and EB-PVD PYSZ thermal barrier coatings. Surface and Coatings Technology, 2007, 201, 7880-7888.	2.2	86

#	ARTICLE	IF	CITATIONS
19	Tailoring the EB-PVD columnar microstructure to mitigate the infiltration of CMAS in 7YSZ thermal barrier coatings. <i>Journal of the European Ceramic Society</i> , 2017, 37, 261-270.	2.8	82
20	Cyclic behavior of EB-PVD thermal barrier coating systems with modified bond coats. <i>Surface and Coatings Technology</i> , 2008, 203, 449-455.	2.2	76
21	Influence of bondcoat pre-treatment and surface topology on the lifetime of EB-PVD TBCs. <i>Surface and Coatings Technology</i> , 2003, 165, 217-223.	2.2	66
22	Influence of electron beam physical vapor deposited thermal barrier coating microstructure on thermal barrier coating system performance under cyclic oxidation conditions. <i>Surface and Coatings Technology</i> , 1999, 120-121, 68-76.	2.2	62
23	Hafnia-doped silicon bond coats manufactured by PVD for SiC/SiC CMCs. <i>Acta Materialia</i> , 2020, 183, 471-483.	3.8	62
24	Degradation study of 7 wt.% yttria stabilised zirconia (7YSZ) thermal barrier coatings on aero-engine combustion chamber parts due to infiltration by different CaO-MgO-Al ₂ O ₃ -SiO ₂ variants. <i>Surface and Coatings Technology</i> , 2014, 260, 73-81.	2.2	56
25	Interaction and infiltration behavior of Eyjafjallajökull, Sakurajima volcanic ashes and a synthetic CMAS containing FeO with/in EB-PVD ZrO ₂ -65wt% Y ₂ O ₃ coating at high temperature. <i>Acta Materialia</i> , 2017, 136, 164-180.	3.8	56
26	EB-PVD alumina (Al ₂ O ₃) as a top coat on 7YSZ TBCs against CMAS/VA infiltration: Deposition and reaction mechanisms. <i>Journal of the European Ceramic Society</i> , 2018, 38, 3333-3346.	2.8	51
27	Improvement of EB-PVD thermal barrier coatings by treatments of a vacuum plasma-sprayed bond coat. <i>Surface and Coatings Technology</i> , 2008, 203, 160-170.	2.2	50
28	Erosion resistant titanium based PVD coatings on CFRP. <i>Wear</i> , 2013, 302, 937-945.	1.5	48
29	Microstructure and cyclic lifetime of Gd and Dy-containing EB-PVD TBCs deposited as single and double-layer on various bond coats. <i>Surface and Coatings Technology</i> , 2014, 245, 92-101.	2.2	45
30	Microstructure and phase stability of EB-PVD alumina and alumina/zirconia for thermal barrier coating applications. <i>Surface and Coatings Technology</i> , 1997, 94-95, 131-136.	2.2	41
31	Two-source jumping beam evaporation for advanced EB-PVD TBC systems. <i>Surface and Coatings Technology</i> , 2000, 133-134, 40-48.	2.2	39
32	Solid particle erosion of thick PVD coatings on CFRP. <i>Wear</i> , 2014, 317, 246-253.	1.5	36
33	Estimation of CMAS infiltration depth in EB-PVD TBCs: A new constraint model supported with experimental approach. <i>Journal of the European Ceramic Society</i> , 2019, 39, 2936-2945.	2.8	35
34	Thermocyclic Behaviour of Microstructurally Modified EB-PVD Thermal Barrier Coatings. <i>Materials Science Forum</i> , 1997, 251-254, 957-964.	0.3	33
35	Shark skin inspired riblet structures as aerodynamically optimized high temperature coatings for blades of aeroengines. <i>Smart Materials and Structures</i> , 2011, 20, 094016.	1.8	33
36	Influence of Processing on Microstructure and Performance of Electron Beam Physical Vapor Deposition (EB-PVD) Thermal Barrier Coatings. <i>Journal of Engineering for Gas Turbines and Power</i> , 2002, 124, 229-234.	0.5	30

#	ARTICLE	IF	CITATIONS
37	Erosion behavior of EB-PVD 7YSZ coatings under corrosion/erosion regime: Effect of TBC microstructure and the CMAS chemistry. Journal of the European Ceramic Society, 2018, 38, 5101-5112.	2.8	29
38	Thermal conductivity issues of EB-PVD thermal barrier coatings. Materialwissenschaft Und Werkstofftechnik, 2007, 38, 659-666.	0.5	27
39	The Accelerating Effect of CaSO_4 Within CMAS (CaO - MgO - Al_2O_3 - SiO_2) and Its Effect on the Infiltration Behavior in EB-PVD 7 YSZ . Journal of the American Ceramic Society, 2016, 99, 1398-1403.	1.9	27
40	Microstructure and lifetime of EB-PVD TBCs with Hf-doped bond coat and Gd-zirconate ceramic top coat on CMSX-4 substrates. Surface and Coatings Technology, 2016, 299, 104-112.	2.2	27
41	Oxidation-induced microstructural changes of the TiAl TNM-B1 alloy after exposure at 900°C in air. Intermetallics, 2020, 123, 106830.	1.8	27
42	Microstructural analysis of Ta-containing NiCoCrAlY bond coats deposited by HVOF on different Ni-based superalloys. Surface and Coatings Technology, 2018, 354, 214-225.	2.2	26
43	Effects of yttria content on the CMAS infiltration resistance of yttria stabilized thermal barrier coatings system. Journal of Materials Science and Technology, 2020, 43, 74-83.	5.6	26
44	Comparative study of EB-PVD gadolinium-zirconate and yttria-rich zirconia coatings performance against Fe-containing calcium-magnesium-aluminosilicate (CMAS) infiltration. Corrosion Science, 2021, 190, 109660.	3.0	26
45	Thermocyclic Behavior of Differently Stabilized and structured EB-PVD thermal barrier coatings. Materialwissenschaft Und Werkstofftechnik, 1997, 28, 370-376.	0.5	25
46	Influence of Deposition Conditions on Density and Microstructure of EB-PVD TBCs. Ceramic Engineering and Science Proceedings, 0, , 353-360.	0.1	24
47	Design and Properties of Thermal Barrier Coatings for advanced turbine engines. Materialwissenschaft Und Werkstofftechnik, 1997, 28, 357-362.	0.5	22
48	Microstructure and cyclic oxidation resistance of Si-aluminide coatings on $\hat{\text{T}}\text{-TiAl}$ at 850°C. Surface and Coatings Technology, 2020, 403, 126361.	2.2	22
49	Integrated testing approach using a customized micro turbine for a volcanic ash and CMAS related degradation study of thermal barrier coatings. Surface and Coatings Technology, 2018, 337, 198-208.	2.2	21
50	High temperature interaction of volcanic ashes with 7YSZ TBC's produced by APS: Infiltration behavior and phase stability. Surface and Coatings Technology, 2019, 378, 124915.	2.2	21
51	Nucleation and Growth of Oxide Constituents on NiCoCrAlY Bond Coats during the Different Stages of EB-PVD TBC Deposition and Upon Thermal Loading. Materials Science Forum, 2004, 461-464, 899-906.	0.3	20
52	Effect of intermetallic coatings on the tensile properties of a $\hat{\text{T}}\text{-TiAl}$ based TNM alloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 699, 118-127.	2.6	20
53	Life time dependency on the pre-coating treatment of a thermal barrier coating under thermal cycling. Surface and Coatings Technology, 2006, 201, 2667-2675.	2.2	17
54	High-Temperature Aging of Eb-Pvd Thermal Barrier Coatings. Ceramic Engineering and Science Proceedings, 0, , 347-356.	0.1	17

#	ARTICLE	IF	CITATIONS
55	Emittance of Y2O3 stabilised ZrO2 thermal barrier coatings prepared by electron-beam physical-vapour deposition. High Temperatures - High Pressures, 2000, 32, 361-368.	0.3	17
56	Flow Kinetics of Molten Silicates through Thermal Barrier Coating: A Numerical Study. Coatings, 2019, 9, 332.	1.2	16
57	Effect of processing and interface on the durability of single and bilayer 7YSZ / gadolinium zirconate EB-PVD thermal barrier coatings. Surface and Coatings Technology, 2020, 381, 125107.	2.2	16
58	Lifetime improvement of EB-PVD 7YSZ TBCs by doping of Hf or Zr in NiCoCrAlY bond coats. Corrosion Science, 2021, 181, 109205.	3.0	16
59	Gas flow sputtering – An approach to coat complex geometries and Non Line of Sight areas. Surface and Coatings Technology, 2009, 204, 1087-1091.	2.2	15
60	Oxidation and fatigue behaviour of β -TiAl coated with HIPIMS CrAlYN/CrN nanoscale multilayer coatings and EB-PVD thermal barrier coatings. International Journal of Materials Research, 2010, 101, 648-656.	0.1	15
61	Impact of Thermal Exposure of EB-PVD TBCs on Youngs Modulus and Sintering. Ceramic Engineering and Science Proceedings, 0, , 341-352.	0.1	15
62	Thermocyclic Behavior of Variously Stabilized EB-PVD Thermal Barrier Coatings. Journal of Engineering for Gas Turbines and Power, 1997, 119, 917-921.	0.5	14
63	High temperature oxidation of EB-PVD TBCs on Pt-diffused single crystal Ni superalloy. Surface and Coatings Technology, 2014, 260, 2-8.	2.2	14
64	Shark Skin Inspired Riblet Coatings for Aerodynamically Optimized High Temperature Applications in Aeroengines. Advanced Engineering Materials, 2011, 13, 288-295.	1.6	13
65	Y2SiO5 environmental barrier coatings for niobium silicide based materials. Materials at High Temperatures, 2015, 32, 74-80.	0.5	13
66	Microstructure and lifetime of Hf or Zr doped sputtered NiAlCr bond coat/7YSZ EB-PVD TBC systems. Surface and Coatings Technology, 2018, 335, 41-51.	2.2	13
67	Graded EB-PVD Alumina-Zirconia Thermal Barrier Coatings-An Experimental Approach. Materials Science Forum, 1999, 308-311, 396-401.	0.3	12
68	Investigation of an as-sprayed NiCoCrAlY overlay coating.. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 369, 144-150.	2.6	12
69	Fabrication of TBC-armored rocket combustion chambers by EB-PVD methods and TLP assembling. Science and Technology of Advanced Materials, 2005, 6, 103-110.	2.8	12
70	Low Thermal Conductivity Ceramics for Turbine Blade Thermal Barrier Coating Application. Ceramic Engineering and Science Proceedings, 0, , 375-380.	0.1	12
71	Analytical electron microscopy of the mixed zone in NiCoCrAlY-based EB-PVD thermal barrier coatings: as-coated condition versus late stages of TBC lifetime. Materials at High Temperatures, 2005, 22, 393-401.	0.5	11
72	Lifetime of environmental/thermal barrier coatings deposited on a niobium silicide composite with boron containing $M_{7-6}Si_{6-6}$ -based bond coat. Materials and Corrosion - Werkstoffe Und Korrosion, 2016, 67, 1252-1260.	0.8	10

#	ARTICLE	IF	CITATIONS
73	Lifetimeâ€ determining spalling mechanisms of NiCoCrAlRE / EBâ€PVD zirconia TBC systems. Materialwissenschaft Und Werkstofftechnik, 2007, 38, 734-746.	0.5	9
74	Assessment of Cyclic Lifetime of NiCoCrAlY/ZrO ₂ -Based EB-PVD TBC Systems via Reactive Element Enrichment in the Mixed Zone of the TGO Scale. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 2070-2082.	1.1	9
75	Analytical electron microscopy of the mixed zone in NiCoCrAlY-based EB-PVD thermal barrier coatings: as-coated condition versus late stages of TBC lifetime. Materials at High Temperatures, 2005, 22, 393-401.	0.5	8
76	Environmental/thermal barrier coating systems deposited on Nb/Nb ₅ /Si ₃ based alloy. Materials at High Temperatures, 2015, 32, 50-56.	0.5	8
77	Investigation of CMAS Resistance of Sacrificial Suspension Sprayed Alumina Topcoats on EB-PVD 7YSZ Layers. Journal of Thermal Spray Technology, 2020, 29, 90-104.	1.6	8
78	Magnetron Sputtered Silicon Coatings as Oxidation Protection for Moâ€Based Alloys. Advanced Engineering Materials, 2020, 22, 2000218.	1.6	8
79	Graded PVD Mo-Si interlayer between Si coating and Mo-Si-B alloys: Investigation of oxidation behaviour. Corrosion Science, 2021, 192, 109843.	3.0	8
80	Y-Doped La ₂ Zr ₂ O ₇ Pyrochlore Eb-Pvd Thermal Barrier Coatings. , 0, , 491-496.		8
81	TEM Investigation on the Adhesion of YPSZ EB-PVD TBCs. Materials Science Forum, 1997, 251-254, 965-972.	0.3	7
82	Oxidation and lifetime of PYSZ and CeSZ coated Ni-base substrates with MCrAlY bond layers. Materials at High Temperatures, 2003, 20, 475-480.	0.5	7
83	Mechanical Properties of Sharkâ€Skin Like Structured Surfaces for Highâ€Temperature Applications. Advanced Engineering Materials, 2016, 18, 688-702.	1.6	7
84	Erosion resistance of CMAS infiltrated sacrificial suspension sprayed alumina top layer on EB-PVD 7YSZ coatings. Wear, 2019, 438-439, 203064.	1.5	7
85	Detrimental effects of sand ingress in jet engine ceramic coatings captured with Raman-based 3D rendering. Journal of the European Ceramic Society, 2021, 41, 1664-1671.	2.8	7
86	Simulating Thermal Response of Eb-Pvd Thermal Barrier Coating Microstructures. , 0, , 549-554.		7
87	Developments in Processing of Ceramic Top Coats of EB-PVD Thermal Barrier Coatings. Key Engineering Materials, 2007, 333, 137-146.	0.4	6
88	Microstructural analysis after furnace cyclic testing of pre-oxidized ReneN5/(Ni,Pt)Al/7YSZ thermal barrier coatings. Surface and Coatings Technology, 2020, 403, 126376.	2.2	6
89	High-energy X-ray phase analysis of CMAS-infiltrated 7YSZ thermal barrier coatings: Effect of time and temperature. Journal of Materials Research, 2020, 35, 2300-2310.	1.2	6
90	Evaluation of Two New Thermal Barrier Coating Materials Produced by APS and EB-PVD. Ceramic Engineering and Science Proceedings, 0, , 363-373.	0.1	6

#	ARTICLE	IF	CITATIONS
91	Study of CMAS infiltration and evaporation behaviour under water vapour/sulphur oxide conditions in EB-PVD 7YSZ. Corrosion Science, 2022, 198, 110123.	3.0	6
92	PVD thermal barrier coating systems for Mo-Si-B alloys. Materials at High Temperatures, 2018, 35, 195-203.	0.5	5
93	Texture of EB-PVD Thermal Barrier Coatings Under Variable Deposition Conditions / Textur von EB-PVD Wärmedämmschichten bei unterschiedlichen Aufdampfbedingungen. International Journal of Materials Research, 1996, 87, 488-492.	0.1	5
94	Adherence and Failure of an EB-PVD 7YSZ Coating on a NiCrAl Substrate: A Pilot Study. Oxidation of Metals, 2016, 86, 279-298.	1.0	4
95	Contemporary Materials Issues for Advanced EB-PVD Thermal Barrier Coating Systems. International Journal of Materials Research, 2022, 92, 762-772.	0.1	4
96	Reaction Products from High Temperature Treatments of $(\text{La}_x\text{Gd}_{1-x})_2\text{Zr}_2\text{O}_7$ System and Volcanic Ash Powder Mixtures. Jom, 2022, 74, 2791-2808.	0.9	4
97	Interface reactions of magnetron sputtered Si-based dual layer coating systems as oxidation protection for Mo-Si-Ti alloys. Surface and Coatings Technology, 2022, 444, 128620.	2.2	4
98	Short-time Oxidation of Cast Ni-Cr-Al-Re Alloys at 1,000°C. Oxidation of Metals, 2012, 78, 163-82.	1.6	3
99	Microstructural Evolution of GdZ and DySZ Based EB-PVD TBC Systems After Thermal Cycling at High Temperature. Journal of Engineering for Gas Turbines and Power, 2013, 135, .	0.5	3
100	High Temperature Oxidation Stability of Aerodynamically Optimised Riblets for Blades of Aero-engine Applications. Oxidation of Metals, 2015, 83, 133-150.	1.0	3
101	Environmental protection of Nb/Nb5Si3-based alloys by E/TBC systems. Intermetallics, 2018, 93, 169-179.	1.8	3
102	Investigation of the Effects of CMAS-infiltration in EB-PVD 7% Ytria-Stabilized Zirconia via Raman Spectroscopy. , 2018, , .		3
103	Oxidation behavior of dense Yttrium doped B2-NiAl bulk material fabricated by ball milling self-propagating high-temperature synthesis and densified by spark plasma sintering. Surface and Coatings Technology, 2021, 421, 127448.	2.2	3
104	Oxidation and lifetime of PYSZ and CeSZ coated Ni-base substrates with MCrAlY bond layers. Materials at High Temperatures, 2003, 20, 475-479.	0.5	3
105	R&D Status and Needs for Improved EB-PVD Thermal Barrier Coating Performance. Materials Research Society Symposia Proceedings, 2000, 645, 1011.	0.1	2
106	Substrate Effect on the Lifetime of EB-PVD TBC Systems With 7YSZ and GDZ as Ceramic Top Coat Materials. , 2014, , .		2
107	Developments in Processing of Ceramic Top Coats of EB-PVD Thermal Barrier Coatings. Key Engineering Materials, 0, , 137-146.	0.4	2
108	Thermocyclic Behavior of Various Stabilized EB-PVD Thermal Barrier Coatings. , 1996, , .		1

#	ARTICLE	IF	CITATIONS
109	Al ₂ O ₃ - ZrO ₂ Graded Thermal Barrier Coatings by EB-PVD - Concept, Microstructure and Phase Stability. , 1997, , 263-268.		1
110	Influence of Processing on Microstructure and Performance of EB-PVD Thermal Barrier Coatings. , 2000, , .		1
111	Impedance spectroscopy of thermal barrier coatings as non-destructive evaluation tool for failure detection. International Journal of Materials Research, 2005, 96, 725-730.	0.8	1
112	Erosion behavior of CMAS/VA infiltrated EB-PVD Gd ₂ Zr ₂ O ₇ TBCs: Special emphasis on the effect of mechanical properties of the reaction products. Wear, 2022, 506-507, 204450.	1.5	1
113	Thermal Conductivity of Nanoporous YSZ Thermal Barrier Coatings Fabricated by EB-PVD. , 2009, , 115-123.		0
114	Thermal and Mechanical Properties of Zirconia Coatings Produced by Electrophoretic Deposition. , 2009, , 1-10.		0
115	Microstructural Evolution of GdZ and DySZ Based EB-PVD TBC Systems After Thermal Cycling at High Temperature. , 2013, , .		0
116	Nanoindentation dataset of silicon and hafnia doped silicon coatings produced by magnetron sputtering. Data in Brief, 2020, 31, 105800.	0.5	0
117	Synchrotron X-Ray Diffraction Study of Phase Transformation in CMAS Ingressed EB-PVD Thermal Barrier Coatings. , 2020, , .		0
118	Elastic and Inelastic Deformation Properties of Free Standing Ceramic EB-PVD Coatings. , 0, , 11-18.		0
119	Factors affecting cyclic lifetime of EB-PVD thermal barrier coatings with various bond coats. International Journal of Materials Research, 2022, 94, 649-654.	0.1	0
120	Impedance spectroscopy of thermal barrier coatings as non-destructive evaluation tool for failure detection. International Journal of Materials Research, 2022, 96, 725-730.	0.1	0