

Zhengyi Fu

List of Publications by Year in descending order

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papers

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257450

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103
all docs

103
docs citations

103
times ranked

1641
citing authors

#	ARTICLE	IF	CITATIONS
1	Hierarchically structured porous materials: synthesis strategies and applications in energy storage. National Science Review, 2020, 7, 1667-1701.	9.5	164
2	Bioinspired 3D Printable, Self-Healable, and Stretchable Hydrogels with Multiple Conductivities for Skin-like Wearable Strain Sensors. ACS Applied Materials & Interfaces, 2021, 13, 2952-2960.	8.0	125
3	Sintering boron carbide ceramics without grain growth by plastic deformation as the dominant densification mechanism. Scientific Reports, 2015, 5, 15827.	3.3	103
4	Bioprocess-inspired fabrication of materials with new structures and functions. Progress in Materials Science, 2019, 105, 100571.	32.8	76
5	Ultra-fast densification of boron carbide by flash spark plasma sintering. Scripta Materialia, 2016, 116, 127-130.	5.2	72
6	Mineralization generates megapascal contractile stresses in collagen fibrils. Science, 2022, 376, 188-192.	12.6	70
7	Fabrication and properties of TiB ₂ -based cermets by spark plasma sintering with CoCrFeNiTiAl high-entropy alloy as sintering aid. Journal of the European Ceramic Society, 2015, 35, 879-886.	5.7	62
8	The nature of grain boundaries in alumina fabricated by fast sintering. Scripta Materialia, 2010, 62, 658-661.	5.2	55
9	Mn ²⁺ activated MgAlON transparent ceramic: A new green-emitting transparent ceramic phosphor for high-power white LED. Journal of the European Ceramic Society, 2017, 37, 4229-4233.	5.7	51
10	Highly Transparent Mg _{0.27} Al _{2.58} O _{4.73} Ceramic Prepared by Pressureless Sintering. Journal of the American Ceramic Society, 2014, 97, 63-66.	13.73	43
11	Bioprocess-inspired synthesis of hierarchically porous nitrogen-doped TiO ₂ with high visible-light photocatalytic activity. Journal of Materials Chemistry A, 2015, 3, 19588-19596.	10.3	41
12	The microstructural origin of rapid densification in 3YSZ during ultra-fast firing with or without an electric field. Journal of the European Ceramic Society, 2020, 40, 5829-5836.	5.7	40
13	Bioinspired cellulose-integrated MXene-based hydrogels for multifunctional sensing and electromagnetic interference shielding. , 2022, 1, 495-506.		36
14	First-Principles Study on Site Preference of Aluminum Vacancy and Nitrogen Atoms in β -Alon. Journal of the American Ceramic Society, 2013, 96, 1937-1943.	3.8	34
15	Urchin-like boron nitride hierarchical structure assembled by nanotubes-nanosheets for effective removal of heavy metal ions. Ceramics International, 2018, 44, 12216-12224.	4.8	34
16	Mussel-Directed Synthesis of Nitrogen-Doped Anatase TiO ₂ . Angewandte Chemie - International Edition, 2016, 55, 3031-3035.	13.8	33
17	Bioprocess-Inspired Microscale Additive Manufacturing of Multilayered TiO ₂ /Polymer Composites with Enamel-Like Structures and High Mechanical Properties. Advanced Functional Materials, 2020, 30, 1904880.	14.9	33
18	Densification mechanism and microstructure characteristics of nano- and micro-crystalline alumina by high-pressure and low temperature sintering. Journal of the European Ceramic Society, 2021, 41, 635-645.	5.7	33

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19	Bioprocess-inspired synthesis of printable, self-healing mineral hydrogels for rapidly responsive, wearable ionic skin. <i>Chemical Engineering Journal</i> , 2021, 424, 130549.	12.7	33
20	Chemical Composition, Crystal Structure, and Their Relationships with the Intrinsic Properties of Spinel-Type Crystals Based on Bond Valences. <i>Inorganic Chemistry</i> , 2014, 53, 5986-5992.	4.0	32
21	Organized intrafibrillar mineralization, directed by a rationally designed multi-functional protein. <i>Journal of Materials Chemistry B</i> , 2015, 3, 4496-4502.	5.8	31
22	Nanocage Ferritin Reinforced Polyacrylamide Hydrogel for Wearable Flexible Strain Sensors. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 21278-21286.	8.0	30
23	Confinement controlled mineralization of calcium carbonate within collagen fibrils. <i>Journal of Materials Chemistry B</i> , 2016, 4, 880-886.	5.8	29
24	Confined-space synthesis of nanostructured anatase, directed by genetically engineered living organisms for lithium-ion batteries. <i>Chemical Science</i> , 2016, 7, 6330-6336.	7.4	28
25	Polyvinyl Alcohol/Graphene Oxide Conductive Hydrogels via the Synergy of Freezing and Salting Out for Strain Sensors. <i>Sensors</i> , 2022, 22, 3015.	3.8	27
26	Preparation of transparent MgO·1.8Al ₂ O ₃ spinel ceramics by aqueous gelcasting, presintering and hot isostatic pressing. <i>Journal of the European Ceramic Society</i> , 2018, 38, 4057-4063.	5.7	25
27	A novel spinel-type Mg _{0.55} Al _{2.36} O _{3.81} N _{0.19} transparent ceramic with infrared transmittance range comparable to c-plane sapphire. <i>Scripta Materialia</i> , 2020, 178, 428-432.	5.2	25
28	First-Principles Insight into the Composition-Dependent Structure and Properties of AlON. <i>Journal of the American Ceramic Society</i> , 2014, 97, 2996-3003.	3.8	24
29	Novel divalent europium doped MgAlON transparent ceramic for shortwave ultraviolet erasable windows. <i>Scripta Materialia</i> , 2015, 105, 30-33.	5.2	22
30	Sintering highly dense ultra-high temperature ceramics with suppressed grain growth. <i>Journal of the European Ceramic Society</i> , 2020, 40, 1086-1092.	5.7	22
31	Nonclassical Crystallization of Amorphous Calcium Carbonate in the Presence of Phosphate Ions. <i>Crystal Growth and Design</i> , 2021, 21, 414-423.	3.0	21
32	Theoretical predictions of composition-dependent structure and properties of alumina-rich spinel. <i>Journal of the European Ceramic Society</i> , 2016, 36, 1073-1079.	5.7	20
33	Combining ²⁷ Al Solid-State NMR and First-Principles Simulations To Explore Crystal Structure in Disordered Aluminum Oxynitride. <i>Inorganic Chemistry</i> , 2016, 55, 12930-12937.	4.0	19
34	Preparation and characterization of reduced graphene oxide-reinforced boron carbide ceramics by self-assembly polymerization and spark plasma sintering. <i>Journal of the European Ceramic Society</i> , 2020, 40, 612-621.	5.7	19
35	Microstructural refinement in spark plasma sintering 3Y-TZP nanoceramics. <i>Journal of the European Ceramic Society</i> , 2016, 36, 2565-2571.	5.7	18
36	Sintering dense nanocrystalline 3YSZ ceramics without grain growth by plastic deformation as dominating mechanism. <i>Ceramics International</i> , 2019, 45, 9363-9367.	4.8	18

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37	Simple Method for the Hardness Estimation of Inorganic Crystals by the Bond Valence Model. <i>Inorganic Chemistry</i> , 2016, 55, 11089-11095.	4.0	17
38	Synthesis of ultra-fine tantalum carbide powders by a combinational method of sol-gel and spark plasma sintering. <i>Ceramics International</i> , 2018, 44, 19106-19112.	4.8	16
39	Highly transparent Mg _{0.27} Al _{2.58} O _{3.73} N _{0.27} ceramic fabricated by aqueous gelcasting, pressureless sintering, and post-HIP. <i>Journal of the American Ceramic Society</i> , 2019, 102, 6507-6516.	3.8	16
40	Bioprocess-Inspired Room-Temperature Synthesis of Enamel-like Fluorapatite/Polymer Nanocomposites Controlled by Magnesium Ions. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 25260-25269.	8.0	15
41	Sintering and densification mechanisms of tantalum carbide ceramics. <i>Journal of the European Ceramic Society</i> , 2021, 41, 7469-7477.	5.7	15
42	Effect of nitrogen content on optical properties of transparent $\hat{3}$ -AlON polycrystalline ceramics. <i>Journal of the European Ceramic Society</i> , 2021, 41, 4319-4326.	5.7	15
43	Composition-dependent bonding and hardness of $\hat{3}$ -aluminum oxynitride: A first-principles investigation. <i>Journal of Applied Physics</i> , 2014, 115, 223511.	2.5	14
44	Synthesis, densification, and microstructure of TaC-TaB ₂ -SiC ceramics. <i>Journal of the American Ceramic Society</i> , 2018, 101, 5400-5410.	3.8	14
45	Characterization in activators' distribution and photoluminescence properties of Ce ³⁺ doped MgAlON transparent fluorescent ceramic. <i>Journal of the European Ceramic Society</i> , 2016, 36, 2801-2805.	5.7	13
46	Microstructure and anisotropic mechanical properties of B _{6.5} C-TiB ₂ -SiC-BN composites fabricated by reactive hot pressing. <i>Journal of the European Ceramic Society</i> , 2020, 40, 2862-2869.	5.7	13
47	A prediction model of thermal expansion coefficient for cubic inorganic crystals by the bond valence model. <i>Journal of Solid State Chemistry</i> , 2021, 299, 122111.	2.9	13
48	A simple bulk modulus model for crystal materials based on the bond valence model. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 22177-22189.	2.8	12
49	Pressure-enhanced densification of TaC ceramics during flash spark plasma sintering. <i>Journal of the American Ceramic Society</i> , 2018, 102, 98.	3.8	11
50	Preparation and Characterization of TiB ₂ -(Supra-Nano-Dual-Phase) High-Entropy Alloy Cermet by Spark Plasma Sintering. <i>Metals</i> , 2018, 8, 58.	2.3	11
51	Stable Pd@Cu Core-Shell Nanocubes with Finely Tuned Sizes for the Reduction of Nitroaromatics. <i>ACS Applied Nano Materials</i> , 2019, 2, 4584-4593.	5.0	11
52	Rapid collagen-directed mineralization of calcium fluoride nanocrystals with periodically patterned nanostructures. <i>Nanoscale</i> , 2021, 13, 8293-8303.	5.6	11
53	Magic Angle Spinning NMR Study on Inversion Behavior and Vacancy Disorder in Alumina-Rich Spinel. <i>Inorganic Chemistry</i> , 2018, 57, 8390-8395.	4.0	10
54	A bio-inspired strategy for enhanced hydrogen evolution: carbonate ions as hole vehicles to promote carrier separation. <i>Nanoscale</i> , 2019, 11, 11451-11456.	5.6	10

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55	Effect of pretreated microstructure on subsequent sintering performance of MgAl ₂ O ₄ ceramics. <i>Ceramics International</i> , 2019, 45, 7544-7551.	4.8	10
56	Surface-diffusion mechanism for synthesis of substrate-free and catalyst-free boron nitride nanosheets. <i>Journal of the European Ceramic Society</i> , 2020, 40, 5324-5331.	5.7	10
57	Synthesis of monodisperse rod-shaped silica particles through biotemplating of surface-functionalized bacteria. <i>Nanoscale</i> , 2020, 12, 8732-8741.	5.6	10
58	Theoretical study on composition-dependent properties of ZnO _n Al ₂ O ₃ spinels. Part II: Mechanical and thermophysical. <i>Journal of the American Ceramic Society</i> , 2021, 104, 6455-6466.	3.8	10
59	Enhanced Mechanical Properties and Oxidation Resistance of Zirconium Diboride Ceramics via Grain Refining and Dislocation Regulation. <i>Advanced Science</i> , 2022, 9, e2104532.	11.2	10
60	Organized Arrangement of Calcium Carbonate Crystals, Directed by a Rationally Designed Protein. <i>Crystal Growth and Design</i> , 2018, 18, 3576-3583.	3.0	9
61	Structural Study of Mg _y Al _(8-x-2y) Si ₂ O ₄ N _x (0 < x < 0.5, 0 < y < 1) Spinel Probed by X-ray Diffraction, 27Al MAS NMR, and First-Principles Calculations. <i>Inorganic Chemistry</i> , 2020, 59, 17009-17017.	4.0	9
62	Novel synthesis approaches for new structures in confined space inspired by natural structure-forming processes. <i>Journal of Materiomics</i> , 2017, 3, 83-95.	5.7	8
63	Defect-induced formation mechanism for boron nitride nanosheets-nanotubes hybrid structures. <i>Scripta Materialia</i> , 2019, 171, 16-20.	5.2	8
64	Particle-attachment crystallization facilitates the occlusion of micrometer-sized <i>Escherichia coli</i> in calcium carbonate crystals with stable fluorescence. <i>Journal of Materials Chemistry B</i> , 2020, 8, 9269-9276.	5.8	8
65	Theoretical study on composition and pressure dependent mechanical properties of AlON solid solution. <i>Journal of the American Ceramic Society</i> , 2020, 103, 4390-4401.	3.8	8
66	Oriented Strontium Carbonate Nanocrystals within Collagen Films for Flexible Piezoelectric Sensors. <i>Advanced Functional Materials</i> , 2021, 31, 2105806.	14.9	8
67	Compositional tailoring effect on crystal structure, mechanical and thermal properties of Î ³ -AlON transparent ceramics. <i>Journal of the European Ceramic Society</i> , 2022, 42, 2983-2993.	5.7	8
68	Mechanically Reinforced Artificial Enamel by Mg ²⁺ -Induced Amorphous Intergranular Phases. <i>ACS Nano</i> , 2022, 16, 10422-10430.	14.6	8
69	Grain growth stagnation in the dense nanocrystalline yttria prepared by combustion reaction and quick pressing with an ultra-high heating rate. <i>Journal of the European Ceramic Society</i> , 2014, 34, 2475-2482.	5.7	7
70	TEM characterization of a Supra-Nano-Dual-Phase binder phase in spark plasma sintered TiB ₂ -5 wt% HEAs cermet. <i>Ceramics International</i> , 2019, 45, 9401-9405.	4.8	7
71	Bioprocess-inspired preparation of silica with varied morphologies and potential in lithium storage. <i>Journal of Materials Science and Technology</i> , 2021, 72, 61-68.	10.7	7
72	Biotemplating synthesis of rod-shaped tin sulfides assembled by interconnected nanosheets for energy storage. <i>Journal of Power Sources</i> , 2021, 506, 230180.	7.8	7

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73	All-vacuum deposited perovskite solar cells with glycine modified NiO hole-transport layers. RSC Advances, 2022, 12, 10863-10869.	3.6	7
74	Crystal structure and luminescence mechanism of novel Fe ³⁺ -doped Mg _{0.752} Al _{2.165} O ₄ deep red-emitting phosphors. Journal of the American Ceramic Society, 2022, 105, 5783-5792.	3.8	7
75	Predicting properties of MgO·Al ₂ O ₃ by first-principles calculation combined with bond valence models. Journal of the American Ceramic Society, 2019, 102, 6913-6924.	3.8	6
76	A new quaternary Li _{0.19} Al _{2.72} O _{3.64} N _{0.36} transparent ceramic with high hardness. Scripta Materialia, 2021, 199, 113837.	5.2	6
77	Full densification of zirconium carbide ceramics sintered under high pressure at low temperature. International Journal of Applied Ceramic Technology, 0, , .	2.1	6
78	A novel durable spinel-type ZnGa ₂ O ₄ transparent ceramic with wide transmission range. Scripta Materialia, 2021, 205, 114186.	5.2	6
79	Growth of mineralized collagen films by oriented calcium fluoride nanocrystal assembly with enhanced cell proliferation. Journal of Materials Chemistry B, 2021, 9, 6668-6677.	5.8	6
80	Investigation of the structural characteristics, dielectric properties, and infrared reflectivity spectra of AlON transparent ceramics. Journal of the European Ceramic Society, 2022, 42, 1362-1369.	5.7	6
81	Biotemplating synthesis of organized structures inspired by biological processes. Giant, 2022, 11, 100108.	5.1	6
82	Theoretical study on composition-dependent properties of ZnO·n Al ₂ O ₃ spinels. Part I: Optical and dielectric. Journal of the American Ceramic Society, 2021, 104, 5099-5109.	3.8	5
83	Investigation on composition-dependent properties of Mg ₅ Al ₂₃ ~ ₅ O ₂₇ +5N ₅ ~ ₅ (0 ≤ x ≤ 1): Part II. Mechanical properties via first-principles calculations combined with bond valence models. Journal of the European Ceramic Society, 2021, 41, 4942-4950.	5.7	5
84	Multiple crystallization pathways of amorphous calcium carbonate in the presence of poly(aspartic) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	2.6	5
85	Highly efficient synthesis of boron nitride nanotubes by catalytic chemical vapor deposition of boron/nickel containing precursors. Journal of Materiomics, 2022, 8, 1199-1204.	5.7	5
86	Large-scale synthesis and growth mechanism of boron nitride nanocomposite assembled by nanosheets and nanotubes. Journal of the American Ceramic Society, 2020, 103, 5594-5598.	3.8	4
87	Investigation on composition-dependent properties of Mg ₅ Al ₂₃ ~ ₅ O ₂₇ +5N ₅ ~ ₅ (0 ≤ x ≤ 1): Part I. optical properties via first-principles calculations. Journal of the European Ceramic Society, 2021, 41, 1543-1549.	5.7	4
88	Bioprocess-inspired synthesis of multilayered chitosan/CaCO ₃ composites with nacre-like structures and high mechanical properties. Journal of Materials Chemistry B, 2021, 9, 5691-5697.	5.8	3
89	Mineralization of calcium phosphate induced by a silk fibroin film under different biological conditions. RSC Advances, 2021, 11, 18590-18596.	3.6	2
90	Escherichia coli templated iron oxide biomineralization under oscillation. RSC Advances, 2021, 11, 15010-15016.	3.6	2

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91	Silk fibroin directs the formation of monetite nanocrystals and their assembly into hierarchical composites. <i>Journal of Materials Chemistry B</i> , 2021, 9, 9136-9141.	5.8	2
92	Mussel directed synthesis of SnO ₂ /graphene oxide composite for energy storage. <i>Materials Chemistry Frontiers</i> , 0, , .	5.9	2
93	Novel transparent ZnO·3Al ₂ O ₃ ceramics prepared by reactive hot isostatic pressing. <i>Journal of the European Ceramic Society</i> , 2022, 42, 724-728.	5.7	2
94	Fabrication and properties of highly transparent Li _{0.07} Al _{2.76} O _{3.64} N _{0.36} ceramics by aqueous gelcasting and two-step preparation. <i>Ceramics International</i> , 2021, 48, 6608-6608.	4.8	2
95	Highly transparent MgAl _{0.5} Ga _{1.5} O ₄ ceramic for overcoming the trade-off between infrared transmittance and mechanical properties. <i>Scripta Materialia</i> , 2022, 216, 114756.	5.2	2
96	Bio-inspired high-efficiency photosystem by synergistic effects of core-shell structured Au@CdS nanoparticles and their engineered location on {001} facets of SrTiO ₃ nanocrystals. <i>Journal of Materials Science and Technology</i> , 2023, 136, 159-168.	10.7	2
97	The Impact Failure and Energy Dissipation Mechanism of Polyethylene Laminates. <i>Journal Wuhan University of Technology, Materials Science Edition</i> , 2019, 34, 723-727.	1.0	1
98	Aqueous Sn-S Complex Derived Electron Selective Layer for Perovskite Solar Cells. <i>Journal Wuhan University of Technology, Materials Science Edition</i> , 2020, 35, 272-279.	1.0	1
99	Photosynthesis-Inspired Acceleration of Carrier Separation: Co ²⁺ and CH ₃ COO ⁻ Ions Synergistically Enhanced Photocatalytic Hydrogen Evolution of Graphitic Carbon Nitride. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, , .	6.7	0
100	Bioprocess-inspired Fabrication of Lead Iodide Coexisting with Crystalline Nanosheet and Amorphous Nanorod for Perovskite Solar Cells. <i>Journal Wuhan University of Technology, Materials Science Edition</i> , 2021, 36, 358-363.	1.0	0
101	ZnO·2.7Al ₂ O ₃ Nanocomposite with high optical transparency. <i>Journal of the American Ceramic Society</i> , 0, , .	3.8	0
102	Room-temperature growth of fluorapatite/CaCO ₃ heterogeneous structured composites inspired by human tooth. <i>RSC Advances</i> , 2022, 12, 11084-11089.	3.6	0
103	Elasticity of Nonstoichiometric Alumina-Rich Spinel Determined by Bond Valence Theory and Brillouin Scattering. <i>Inorganic Chemistry</i> , 2022, 61, 4743-4751.	4.0	0