Ashutosh Goel

List of Publications by Year
in descending order

89 papers	2,836 citations	126901 33 h-index	206102 48 g-index
90 all docs	90 docs citations	90 times ranked	2300 citing authors

#	Article	IF	Citations
1	Discovery of Ultra-Crack-Resistant Oxide Glasses with Adaptive Networks. Chemistry of Materials, 2017, 29, 5865-5876.	6.7	113
2	Influence of strontium on structure, sintering and biodegradation behaviour of CaOâ€"MgOâ€"SrOâ€"SiO2â€"P2O5â€"CaF2 glasses. Acta Biomaterialia, 2011, 7, 4071-4080.	8.3	98
3	Alkali-free bioactive glasses for bone tissue engineering: A preliminary investigation. Acta Biomaterialia, 2012, 8, 361-372.	8.3	96
4	Glass-ceramics for nuclear-waste immobilization. MRS Bulletin, 2017, 42, 233-240.	3.5	91
5	Structure and mechanical properties of compressed sodium aluminosilicate glasses: Role of non-bridging oxygens. Journal of Non-Crystalline Solids, 2016, 441, 49-57.	3.1	89
6	The effect of Cr2O3 addition on crystallization and properties of La2O3-containing diopside glass-ceramics. Acta Materialia, 2008, 56, 3065-3076.	7.9	80
7	Stable glass-ceramic sealants for solid oxide fuel cells: Influence of Bi2O3 doping. International Journal of Hydrogen Energy, 2010, 35, 6911-6923.	7.1	76
8	Effect of Al2O3 and K2O content on structure, properties and devitrification of glasses in the Li2Oâ€"SiO2 system. Journal of the European Ceramic Society, 2010, 30, 2017-2030.	5.7	75
9	Structural origin of high crack resistance in sodium aluminoborate glasses. Journal of Non-Crystalline Solids, 2017, 460, 54-65.	3.1	69
10	Challenges with vitrification of Hanford High-Level Waste (HLW) to borosilicate glass â€" An overview. Journal of Non-Crystalline Solids: X, 2019, 4, 100033.	1.2	65
11	Role of glass structure in defining the chemical dissolution behavior, bioactivity and antioxidant properties of zinc and strontium co-doped alkali-free phosphosilicate glasses. Acta Biomaterialia, 2014, 10, 3264-3278.	8.3	64
12	Optimization of La2O3-containing diopside based glass-ceramic sealants for fuel cell applications. Journal of Power Sources, 2009, 189, 1032-1043.	7.8	62
13	Rhenium Solubility in Borosilicate Nuclear Waste Glass: Implications for the Processing and Immobilization of Technetium-99. Environmental Science & Technology, 2012, 46, 12616-12622.	10.0	62
14	Structural analysis and thermal behavior of diopsideâ€"fluorapatiteâ€"wollastonite-based glasses and glassâ€"ceramics. Acta Biomaterialia, 2010, 6, 4380-4388.	8.3	59
15	Machine learning as a tool to design glasses with controlled dissolution for healthcare applications. Acta Biomaterialia, 2020, 107, 286-298.	8.3	55
16	Structural role of zinc in biodegradation of alkali-free bioactive glasses. Journal of Materials Chemistry B, 2013, 1, 3073.	5.8	54
17	KCa4(BO3)3:Ln3+ (Ln = Dy, Eu, Tb) phosphors for near UV excited whiteâ€"lightâ€"emitting diodes. AIP Advances, 2013, 3, .	1.3	53
18	Composition â€" structure â€" property relationships in alkali aluminosilicate glasses: A combined experimental â€" computational approach towards designing functional glasses. Journal of Non-Crystalline Solids, 2019, 505, 144-153.	3.1	48

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19	Study of calciumâ€“magnesiumâ€“aluminumâ€“silicate (CMAS) glass and glass-ceramic sealant for solid oxide fuel cells. Journal of Power Sources, 2013, 231, 203-212.	7.8	47
20	Wet chemical synthesis of apatite-based waste forms â€“ A novel room temperature method for the immobilization of radioactive iodine. Journal of Materials Chemistry A, 2017, 5, 14331-14342.	10.3	43
21	Understanding the structural drivers governing glassâ€“water interactions in borosilicate based model bioactive glasses. Acta Biomaterialia, 2018, 65, 436-449.	8.3	43
22	Diopside (CaOÂ·MgOÂ·2SiO2)â€“fluorapatite (9CaOÂ·3P2O5Â·CaF2) glass-ceramics: potential materials for bone tissue engineering. Journal of Materials Chemistry, 2011, 21, 16247.	6.7	41
23	Structure, surface reactivity and physico-chemical degradation of fluoride containing phospho-silicate glasses. Journal of Materials Chemistry, 2011, 21, 8074.	6.7	41
24	Sintering behavior of lanthanide-containing glass-ceramic sealants for solid oxide fuel cells. Journal of Materials Chemistry, 2012, 22, 10042.	6.7	41
25	Compositional Dependence of Solubility/Retention of Molybdenum Oxides in Aluminoborosilicate-Based Model Nuclear Waste Glasses. Journal of Physical Chemistry B, 2018, 122, 1714-1729.	2.6	41
26	Synthesis, processing and characterization of a bioactive glass composition for bone regeneration. Ceramics International, 2013, 39, 2519-2526.	4.8	40
27	Understanding the structural origin of crystalline phase transformations in nepheline (NaAlSiO₄)â€based glassâ€ceramics. Journal of the American Ceramic Society, 2017, 100, 2859-2878.	3.8	40
28	Effect of K2O on structureâ€“property relationships and phase transformations in Li2Oâ€“SiO2 glasses. Journal of the European Ceramic Society, 2012, 32, 291-298.	5.7	37
29	Structure, Sintering, and Crystallization Kinetics of Alkalineâ€Earth Aluminosilicate Glassâ€“Ceramic Sealants for Solid Oxide Fuel Cells. Journal of the American Ceramic Society, 2010, 93, 830-837.	3.8	36
30	Development and performance of diopside based glass-ceramic sealants for solid oxide fuel cells. Journal of Non-Crystalline Solids, 2010, 356, 1070-1080.	3.1	36
31	Elucidating the Effect of Iron Speciation (Fe²⁺/Fe³⁺) on Crystallization Kinetics of Sodium Aluminosilicate Glasses. Journal of the American Ceramic Society, 2016, 99, 2306-2315.	3.8	36
32	Structural and thermal characterization of CaOâ€“MgOâ€“SiO2â€“P2O5â€“CaF2 glasses. Journal of the European Ceramic Society, 2012, 32, 2739-2746.	5.7	35
33	Impact of rare earth ion size on the phase evolution of MoO3-containing aluminoborosilicate glass-ceramics. Journal of Nuclear Materials, 2018, 510, 539-550.	2.7	35
34	An insight into the corrosion of alkali aluminoborosilicate glasses in acidic environments. Physical Chemistry Chemical Physics, 2020, 22, 1881-1896.	2.8	35
35	Understanding the compositionâ€“structureâ€“bioactivity relationships in diopside (CaOÂ·MgOÂ·2SiO2)â€“tricalcium phosphate (3CaOÂ·P2O5) glass system. Acta Biomaterialia, 2015, 15, 210-226.	8.3	34
36	Assessment of interatomic parameters for the reproduction of borosilicate glass structures via DFTâ€GIPAW calculations. Journal of the American Ceramic Society, 2019, 102, 7225-7243.	3.8	34

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37	Thermal and mechanical stability of lanthanide-containing glassâ€“ceramic sealants for solid oxide fuel cells. Journal of Materials Chemistry A, 2014, 2, 1834-1846.	10.3	31
38	Electrical behavior of aluminosilicate glass-ceramic sealants and their interaction with metallic solid oxide fuel cell interconnects. Journal of Power Sources, 2010, 195, 522-526.	7.8	30
39	Structural analysis of some sodium and alumina rich high-level nuclear waste glasses. Journal of Non-Crystalline Solids, 2012, 358, 674-679.	3.1	30
40	Influence of NiO on the crystallization kinetics of near stoichiometric cordierite glasses nucleated with TiO₂. Journal of Physics Condensed Matter, 2007, 19, 386231.	1.8	29
41	Study of melilite based glasses and glass-ceramics nucleated by Bi2O3 for functional applications. RSC Advances, 2012, 2, 10955.	3.6	29
42	Crystallization behavior of ironâ€•and boronâ€containing nepheline (Na₂OÂ·Al₂O₃Â·2SiO₂) based model highâ€level nuclear waste glasses. Journal of the American Ceramic Society, 2019, 102, 1101-1121.	3.8	28
43	Diopside â€“ Mg orthosilicate and diopside â€“ Ba disilicate glassâ€“ceramics for sealing applications in SOFC: Sintering and chemical interactions studies. International Journal of Hydrogen Energy, 2012, 37, 12528-12539.	7.1	27
44	Influence of ZnO/MgO substitution on sintering, crystallisation, and bio-activity of alkali-free glass-ceramics. Materials Science and Engineering C, 2015, 53, 252-261.	7.3	27
45	Alkali-free bioactive diopsideâ€“tricalcium phosphate glass-ceramics for scaffold fabrication: Sintering and crystallization behaviours. Journal of Non-Crystalline Solids, 2016, 432, 81-89.	3.1	26
46	Structure of Rheniumâ€Containing Sodium Borosilicate Glass. International Journal of Applied Glass Science, 2013, 4, 42-52.	2.0	25
47	Structure-solubility relationships in fluoride-containing phosphate based bioactive glasses. Journal of Materials Chemistry B, 2015, 3, 9360-9373.	5.8	25
48	The <i>in vivo</i> performance of an alkaliâ€free bioactive glass for bone grafting, <scp>F</scp>ast<scp>O</scp>s^{Â®}<scp>BG</scp>, assessed with an ovine model. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2017, 105, 30-38.	3.4	25
49	Composition-structure-property relationships in Li2Oâ€“Al2O3â€“B2O3 glasses. Journal of Non-Crystalline Solids, 2018, 502, 142-151.	3.1	25
50	Structural dependence of crystallization in glasses along the nepheline (NaAlSiO₄) â€• eucryptite (LiAlSiO₄) join. Journal of the American Ceramic Society, 2018, 101, 2840-2855.	3.8	24
51	Structural and Chemical Approach toward Understanding the Aqueous Corrosion of Sodium Aluminoborate Glasses. Journal of Physical Chemistry B, 2018, 122, 10913-10927.	2.6	24
52	Why does B₂O₃ suppress nepheline (NaAlSiO₄) crystallization in sodium aluminosilicate glasses?. Physical Chemistry Chemical Physics, 2020, 22, 8679-8698.	2.8	23
53	Effect of BaO Addition on Crystallization, Microstructure, and Properties of Diopside?Ca-Tschermak Clinopyroxene-Based Glass?Ceramics. Journal of the American Ceramic Society, 2007, 90, 2236-2244.	3.8	22
54	Thermo-mechanical behaviour of alkali free bioactive glass-ceramics co-doped with strontium and zinc. Journal of Non-Crystalline Solids, 2013, 375, 74-82.	3.1	22

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55	Study of Crystallization Kinetics in Glasses along the Diopside-Ca-Tschermak Join. Journal of the American Ceramic Society, 2008, 91, 2690-2697.	3.8	21
56	Effect of BaO on the crystallization kinetics of glasses along the Diopsideâ€“Ca-Tschermak join. Journal of Non-Crystalline Solids, 2009, 355, 193-202.	3.1	21
57	Dy3+-doped nano-glass ceramics comprising NaAlSiO4 and NaY9Si6O26 nanocrystals for white light generation. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2013, 178, 218-224.	3.5	20
58	Crystallization of Rhenium Salts in a Simulated Lowâ€Activity Waste Borosilicate Glass. Journal of the American Ceramic Society, 2013, 96, 1150-1157.	3.8	20
59	Impact of transition metal ions on the structure and bioactivity of alkali-free bioactive glasses. Journal of Non-Crystalline Solids, 2019, 506, 98-108.	3.1	19
60	Structural characterisation and thermo-physical properties of glasses in the Li2Oâ€“SiO2â€“Al2O3â€“K2O system. Journal of Thermal Analysis and Calorimetry, 2011, 103, 827-834.	3.6	18
61	Combined Experimental and Computational Approach toward the Structural Design of Borosilicate-Based Bioactive Glasses. Journal of Physical Chemistry C, 2020, 124, 17655-17674.	3.1	18
62	Influence of ZnO on the crystallization kinetics and properties of diopside-Ca-Tschermak based glasses and glass-ceramics. Journal of Applied Physics, 2008, 104, 043529.	2.5	17
63	Luminescence study of mixed valence Eu-doped nanocrystalline glassâ€“ceramics. Optical Materials, 2013, 36, 198-206.	3.6	17
64	Effect of some rare-earth oxides on structure, devitrification and properties of diopside based glasses. Ceramics International, 2009, 35, 3221-3227.	4.8	16
65	Compositionâ€“Structureâ€“Solubility Relationships in Borosilicate Glasses: Toward a Rational Design of Bioactive Glasses with Controlled Dissolution Behavior. ACS Applied Materials & Interfaces, 2021, 13, 31495-31513.	8.0	15
66	Structure and crystallization behavior of phosphorus-containing nepheline (NaAlSiO4) based sodium aluminosilicate glasses. Journal of Non-Crystalline Solids, 2021, 560, 120719.	3.1	14
67	Structure and crystallization behaviour of some MgSiO3-based glasses. Ceramics International, 2009, 35, 1529-1538.	4.8	13
68	Melilite glassâ€“ceramic sealants for solid oxide fuel cells: effects of ZrO2 additions assessed by microscopy, diffraction and solid-state NMR. Journal of Materials Chemistry A, 2013, 1, 6471.	10.3	13
69	Structural drivers controlling sulfur solubility in alkali aluminoborosilicate glasses. Journal of the American Ceramic Society, 2021, 104, 5030-5049.	3.8	13
70	Machine Learning Enabled Models to Predict Sulfur Solubility in Nuclear Waste Glasses. ACS Applied Materials & Interfaces, 2021, 13, 53375-53387.	8.0	11
71	The effect of fluoride ions on the structure and crystallization kinetics of La2O3-containing diopside based oxyfluoride glasses. Ceramics International, 2009, 35, 3489-3493.	4.8	8
72	Sintering behavior and devitrification kinetics of iron containing clinopyroxene based magnetic glass-ceramics. Solid State Ionics, 2011, 186, 59-68.	2.7	8

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73	Lead- and Bismuth-Borate Fly-Ash Glasses as Gamma-Ray-Shielding Materials. Nuclear Science and Engineering, 2006, 154, 233-240.	1.1	7
74	Sintering and crystallization behavior of CaMgSi2O6â€“NaFeSi2O6 based glass-ceramics. Journal of Applied Physics, 2009, 106, .	2.5	7
75	Influence of lead and cadmium fluoride variation on white light emission characteristics in oxyfluoride glasses and glassâ€“ceramics. Journal of Luminescence, 2015, 159, 38-46.	3.1	7
76	Dissolution kinetics of a sodium borosilicate glass in Tris buffer solutions: impact of Tris concentration and acid (HCl/HNO₃) identity. Physical Chemistry Chemical Physics, 2021, 23, 16165-16179.	2.8	7
77	Structural dependence of crystallization in phosphorusâ€containing sodium aluminoborosilicate glasses. Journal of the American Ceramic Society, 2022, 105, 2556-2574.	3.8	7
78	Structural and Optical Investigation of Rare Earth Doped Oxyfluoride Glasses. Transactions of the Indian Ceramic Society, 2013, 72, 18-20.	1.0	6
79	Glass structure and crystallization in boro-alumino-silicate glasses containing rare earth and transition metal cations: a US-UK collaborative program. MRS Advances, 2019, 4, 1029-1043.	0.9	6
80	Insight into the Partitioning and Clustering Mechanism of Rare-Earth Cations in Alkali Aluminoborosilicate Glasses. Chemistry of Materials, 2021, 33, 7944-7963.	6.7	6
81	Correlating Sulfur Solubility with Short-to-Intermediate Range Ordering in the Structure of Borosilicate Glasses. Journal of Physical Chemistry C, 2022, 126, 655-674.	3.1	6
82	Ruthenium solubility and its impact on the crystallization behavior and electrical conductivity of MoO3-containing borosilicate-based model high-level nuclear waste glasses. Journal of Non-Crystalline Solids, 2020, 549, 120356.	3.1	5
83	Multiscale Investigation of the Mechanisms Controlling the Corrosion of Borosilicate Glasses in Hyper-Alkaline Media. Journal of Physical Chemistry C, 2020, 124, 27542-27557.	3.1	4
84	Crystallisation kinetics of diopside-Ca-Tschermak based glasses nucleated with Cr<SUB align=right>2O<SUB align=right>3 and Fe<SUB align=right>2O<SUB align=right>3. International Journal of Materials Engineering Innovation, 2009, 1, 40.	0.5	3
85	Impact of nonâ€framework cation mixing on the structure and crystallization behavior of model highâ€level waste glasses. Journal of the American Ceramic Society, 2022, 105, 3967-3985.	3.8	3
86	Compositional dependence of crystallization and chemical durability in alkali aluminoborosilicate glasses. Journal of Non-Crystalline Solids, 2022, 590, 121694.	3.1	3
87	A comparative study on the effect of Zr, Sn, and Ti on the crystallization behavior of nepheline glass. Journal of Non-Crystalline Solids, 2021, 569, 120970.	3.1	1
88	Next generation bioceramics. Journal of the American Ceramic Society, 2022, 105, 1615-1616.	3.8	0
89	Impact of Experimental Protocols on the Flexural Strength Testing of Lithium Disilicate-Based Dental Glass-Ceramics. Transactions of the Indian Ceramic Society, 2021, 80, 258-264.	1.0	0