Koichiro Suekuni

List of Publications by Year
in descending order

111 papers	3,654 citations	136950 32 h-index	138484 58 g-index
112 all docs	112 docs citations	112 times ranked	2080 citing authors

#	Article	IF	Citations
1	Phonon-glass electron-crystal thermoelectric clathrates: Experiments and theory. Reviews of Modern Physics, 2014, 86, 669-716.	45.6	426
2	High-performance thermoelectric mineral Cu12â”‹xNixSb4S13 tetrahedrite. Journal of Applied Physics, 2013, 113, .	2.5	262
3	Thermoelectric Properties of Mineral Tetrahedrites Cu$_{10}$Tr$_{2}$Sb$_{4}$S$_{13}$ with Low Thermal Conductivity. Applied Physics Express, 2012, 5, 051201.	2.4	176
4	Simultaneous structure and carrier tuning of dimorphic clathrate<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>Ba</mml:mtext></mml:mrow><mml:mn>8</mml:mn></mml:msu Physical Review B, 2008, 77, .	3.2	144
5	Glasslike versus crystalline thermal conductivity in carrier-tunedBa8Ga16X30clathrates(X=Ge,Sn). Physical Review B, 2006, 74, .	3.2	131
6	High-performance thermoelectric minerals: Colusites Cu26V2M6S32 (Mâ€‰=â€‰Ge, Sn). Applied Physics Letters, 2014, 105, .	3.3	117
7	Cage-size control of guest vibration and thermal conductivity inSr8Ga16Si30â^'xGex. Physical Review B, 2007, 75, .	3.2	112
8	Dynamical properties of guest ions in the type-I clathrate compoundsX8Ga16Ge30(X=Eu,Sr,Ba)investigated by Raman scattering. Physical Review B, 2006, 74, .	3.2	108
9	Ba 8 Ga 16 Sn 30 with type-I clathrate structure: Drastic suppression of heat conduction. Applied Physics Letters, 2008, 92, .	3.3	103
10	Research Update: Cuâ€“S based synthetic minerals as efficient thermoelectric materials at medium temperatures. APL Materials, 2016, 4, .	5.1	99
11	High-Performance Thermoelectric Bulk Colusite by Process Controlled Structural Disordering. Journal of the American Chemical Society, 2018, 140, 2186-2195.	13.7	98
12	Thermoelectric properties of Mn-doped Mgâ€“Sb single crystals. Journal of Materials Chemistry A, 2014, 2, 12311-12316.	10.3	78
13	Systematic study of electronic and magnetic properties for Cu12â€“xTMxSb4S13 (TMâ€‰=â€‰Mn,	2.5	69
14	Optimization of thermoelectric properties of type-VIII clathrate Ba8Ga16Sn30 by carrier tuning. Journal of Alloys and Compounds, 2010, 507, 1-5.	5.5	65
15	Carrier-tuning of single-crystalline Ba8Ga16Ge30. Physica B: Condensed Matter, 2006, 383, 124-125.	2.7	59
16	Vanadium-free colusites Cu₂₆A₂Sn₆S₃₂(A = Nb, Ta) for environmentally friendly thermoelectrics. Journal of Materials Chemistry A, 2016, 4, 15207-15214.	10.3	58
17	Retreat from Stress: Rattling in a Planar Coordination. Advanced Materials, 2018, 30, e1706230.	21.0	57
18	Probing Glasslike Excitations in Single-Crystalline Sr8Ga16Ge30 by Specific Heat and Thermal Conductivity. Journal of the Physical Society of Japan, 2005, 74, 2145-2148.	1.6	56

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19	Tunable electronic properties and low thermal conductivity in synthetic colusites Cu26â‘ xZnxV2M6S32 (x â‰ 4, M = Ge, Sn). Journal of Applied Physics, 2014, 116, .	2.5	55
20	Off-Center Rattling and Anisotropic Expansion of Type-I Clathrates Studied by Raman Scattering. Physical Review Letters, 2008, 100, 165503.	7.8	53
21	High Power Factors of Thermoelectric Colusites Cu₂₆T₂Ge₆S₃₂ (T = Cr, Mo, W): Toward Functionalization of the Conductive â€œCuâ€“Sâ€•Network. Advanced Energy Materials, 2019, 9, 1803249.	19.5	51
22	Enhancement in the thermoelectric performance of colusites Cu₂₆A₂E₆S₃₂(A = Nb, Ta; E = Sn, Ge) using E-site non-stoichiometry. Journal of Materials Chemistry C, 2017, 5, 4174-4184.	5.5	49
23	First-principles study of type-I and type-VIII Ba8Ga16Sn30 clathrates. Journal of Applied Physics, 2010, 107, 123720.	2.5	43
24	Atomic-scale phonon scatterers in thermoelectric colusites with a tetrahedral framework structure. Journal of Materials Chemistry A, 2019, 7, 228-235.	10.3	41
25	Enhancement of thermoelectric efficiency in type-VIII clathrate Ba8Ga16Sn30 by Al substitution for Ga. Journal of Applied Physics, 2010, 108, .	2.5	40
26	Off-center rattling modes and glasslike thermal conductivity in the type-I clathrate<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>Ba</mml:mtext></mml:mrow><mml:mn>8</mml:mn></mml:msub> Physical Review B, 2010, 81, .	3.2	39
27	Microstructural Control and Thermoelectric Properties of Misfit Layered Sulfides (LaS)_{1+m}TS₂ (T = Cr, Nb): The Natural Superlattice Systems. Chemistry of Materials, 2014, 26, 2684-2692.	6.7	39
28	Effects of Ge and Sn substitution on the metalâ€“semiconductor transition and thermoelectric properties of Cu₁₂Sb₄S₁₃tetrahedrite. Physical Chemistry Chemical Physics, 2017, 19, 8874-8879.	2.8	39
29	Optical Conductivity Spectral Anomalies in the Off-Center Rattling System<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î²</mml:mi><mml:mtext mathvariant="normal">â‘</mml:mtext><mml:msub><mml:mi>Ba</mml:mi><mml:mn>8</mml:mn></mml:msub><mml:msub><mml:mi> Physical Review Letters, 2011, 106, 015501.	7.8	36
30	Copperâ€Rich Thermoelectric Sulfides: Sizeâ€Mismatch Effect and Chemical Disorder in the [TS₄]Cu₆ Complexes of Cu₂₆T₂Ge₆S₃₂ (T=Cr, Mo, W) Colusites. Angewandte Chemie - International Edition, 2019, 58, 15455-15463.	13.8	36
31	Tuning the charge carrier density in the thermoelectric colusite. Journal of Applied Physics, 2016, 119, .	2.5	35
32	Power generation from the Cu₂₆Nb₂Ge₆S₃₂-based single thermoelectric element with Au diffusion barrier. Journal of Materials Chemistry C, 2019, 7, 5184-5192.	5.5	33
33	Optical conductivity of rattling phonons in type-I clathrateBa8Ga16Ge30. Physical Review B, 2009, 79, .	3.2	31
34	Interplay between thermoelectric and structural properties of type-I clathrate<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mtext>K</mml:mtext><mml:mn>8</mml:mn></mml:msub><mml:msub><mml:mrow> crystals. Physical Review B, 2010, 81, .	3.2	30
35	Metalâ€“Semiconductor Transition Concomitant with a Structural Transformation in Tetrahedrite Cu₁₂Sb₄S₁₃. Journal of the Physical Society of Japan, 2016, 85, 014703.	1.6	30
36	A strategy for boosting the thermoelectric performance of famatinite Cu₃SbS₄. Physical Chemistry Chemical Physics, 2020, 22, 2081-2086.	2.8	29

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37	Energetics of endohedral atoms in type-I clathrates observed by soft x-ray spectroscopy. Physical Review B, 2008, 78, .	3.2	28
38	Off-center rattling and cage vibration of the carrier-tuned type-I clathrate<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>Ba</mml:mtext></mml:mrow><mml:mn>8</mml:mn></mml:msub> by Raman scattering. Physical Review B, 2010, 82, .	3.2	28
39	Thermoelectric properties and structural instability of type-I clathrate Ba8Ga16Sn30 at high temperatures. Solid State Communications, 2012, 152, 1902-1905.	1.9	26
40	Tunable charge carriers and thermoelectricity of single-crystal Ba8Ga16Sn30. Journal of Physics Condensed Matter, 2006, 18, 1585-1592.	1.8	25
41	Glasslike versus Crystalline Thermophysical Properties of the Cuâ€“S based Minerals: Tetrahedrite and Colusite. Journal of the Physical Society of Japan, 2015, 84, 103601.	1.6	25
42	Enargite Cu₃PS₄: A Cuâ€“Sâ€Based Thermoelectric Material with a Wurtziteâ€Derivative Structure. Advanced Functional Materials, 2020, 30, 2000973.	14.9	25
43	High-Pressure Synthesis and Superconductivity of a New Binary Lanthanum Germanide LaGe₃ with Triangular Ge₃ Cluster Units. Inorganic Chemistry, 2011, 50, 3901-3906.	4.0	24
44	Thermoelectric Properties and Electronic Structures of CuTi₂S₄ Thiospinel and Its Derivatives: Structural Design for Spinel-Related Thermoelectric Materials. Inorganic Chemistry, 2019, 58, 1425-1432.	4.0	24
45	Key Role of d⁰ and d¹⁰ Cations for the Design of Semiconducting Colusites: Large Thermoelectric ZT in Cu₂₆Ti₂Sb₆S₃₂ Disorder-driven glass-like thermal conductivity in colusite <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="normal">C</mml:mi><mml:msub><mml:mi mathvariant="normal">u</mml:mi><mml:mn>26</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">V</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:msub><mml:mi mathvariant="normal">n</mml:mi><mml:mn>6</mml:mn>	6.7	24
46		2.4	24
47	Synthesis of delafossite CuAlO2 p-type semiconductor with a nanoparticle-based Cu(I) acetate-loaded boehmite precursor. Materials Research Bulletin, 2011, 46, 1819-1827.	5.2	22
48	Universal Relation between Guest Free Space and Lattice Thermal Conductivity Reduction by Anharmonic Rattling in Type-I Clathrates. Journal of the Physical Society of Japan, 2008, 77, 61-66.	1.6	20
49	Direct verification of Gaâ€“Ga bond avoidance in the type-I clathrateBa8Ga16Sn30from its x-ray absorption fine structure. Physical Review B, 2009, 80, .	3.2	19
50	Lattice instability and elastic dispersion due to the rattling motion in the type-I clathrate Ba8Ga16Sn30. Physical Review B, 2012, 85, .	3.2	19
51	High power factor in thiospinels Cu2TrTi3S8 (Tr= Mn, Fe, Co, Ni) arising from TiS6 octahedron network. Applied Physics Letters, 2016, 109, .	3.3	19
52	Combined X-ray and neutron diffraction study of vacancies and disorder in the dimorphic clathrate Ba8Ga16Sn30 of type I and VIII. Dalton Transactions, 2013, 42, 14766.	3.3	18
53	p- and n-Type Ba8Ga16Ge30 studied by X-ray photoelectron spectroscopy. Chemical Physics Letters, 2009, 472, 60-64.	2.6	17
54	Carrier concentration tuning in thermoelectric thiospinel Cu2CoTi3S8 by oxidative extraction of copper. Journal of Solid State Chemistry, 2018, 259, 5-10.	2.9	17

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55	Thermoelectric properties of In- and Ga-doped spark plasma sintered ZnO ceramics. Ceramics International, 2021, 47, 23927-23934.	4.8	17
56	Carrier Doping in the TypeÂVIII Clathrate Ba8Ga16Sn30 Through Sb Substitution. Journal of Electronic Materials, 2011, 40, 845-850.	2.2	15
57	Structural and thermoelectric properties of Cu6Fe4Sn12Se32 single crystal. Journal of Alloys and Compounds, 2013, 564, 91-94.	5.5	15
58	Addition of Co, Ni, Fe and their role in the thermoelectric properties of colusite Cu26Nb2Ge6S32. Journal of Alloys and Compounds, 2018, 735, 1838-1845.	5.5	15
59	Publisherâ€™s Note: Phonon-glass electron-crystal thermoelectric clathrates: Experiments and theory [Rev. Mod. Phys.86, 669 (2014)]. Reviews of Modern Physics, 2014, 86, 841-841.	45.6	14
60	Toppling the Transport Properties with Cationic Overstoichiometry in Thermoelectric Colusite: [Cu₂₆Cr₂Ge₆]_{1+Î´}S₃₂. ACS Applied Energy Materials, 2020, 3, 4180-4185.	5.1	14
61	Local-Disorder-Induced Low Thermal Conductivity in Degenerate Semiconductor Cu₂₂Sn₁₀S₃₂. Inorganic Chemistry, 2021, 60, 16273-16285.	4.0	14
62	Variable-range-hopping conduction and low thermal conductivity in chalcogenide spinel CuyFe4Sn12X32 (Xâ€‰=â€‰S, Se). Journal of Applied Physics, 2011, 109, 083709.	2.5	13
63	Low-temperature thermoelectric properties of Yb₁₄MSb₁₁(M = Mn, Zn). Journal of Physics Condensed Matter, 2007, 19, 376211.	1.8	10
64	Effect of Al Substitution on the Thermoelectric Properties of the TypeÂVIII Clathrate Ba8Ga16Sn30. Journal of Electronic Materials, 2011, 40, 1124-1128.	2.2	10
65	Comparison of local distortions in Ba₈Ga₁₆X₃₀ (X = Si, Ge, Sn): an EXAFS study. Journal of Materials Chemistry C, 2015, 3, 10574-10582.	5.5	9
66	Guest Ion Motion in Cage Structure Crystals Investigated by Raman Scattering. Journal of the Physical Society of Japan, 2008, 77, 142-147.	1.6	8
67	Off-Center Guest Vibrations and Their Effect on Lattice Thermal Conductivity in n- and p-Type Î²-Ba8Ga16Sn30. Journal of Electronic Materials, 2009, 38, 1516-1520.	2.2	8
68	Multiple ferromagnetic structures in an off-center rattling system Eu8Ga16Ge30. Journal of Physics: Conference Series, 2010, 200, 022044.	0.4	8
69	Anomalous Infrared Spectra of Hybridized Phonons in Type-I Clathrate Ba8Ga16Ge30. Journal of the Physical Society of Japan, 2013, 82, 024601.	1.6	8
70	Vertical Bridgman growth of thermoelectric clathrate Ba8Ga16Sn30 with a type-VIII structure. Journal of Crystal Growth, 2014, 402, 312-318.	1.5	8
71	Low-Temperature Structural Phase Transitions in Thermoelectric Tetrahedrite, Cu₁₂Sb₄S₁₃, and Tennantite, Cu₁₂As₄S₁₃. Crystal Growth and Design, 2019, 19, 3979-3988.	3.0	8
72	Thermoelectric properties in Mn-doped Bi2Se3. Current Applied Physics, 2014, 14, 1041-1044.	2.4	7

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73	First-Order Metalâ€“Semiconductor Transition Triggered by Rattling Transition in Tetrahedrite Cu₁₂Sb₄S₁₃: Cu-Nuclear Magnetic Resonance Studies. Journal of the Physical Society of Japan, 2019, 88, 054710.	1.6	7
74	Synergistic Effect of Chemical Substitution and Insertion on the Thermoelectric Performance of Cu₂₆V₂Ge₆S₃₂ Colusite. Inorganic Chemistry, 2021, 60, 11364-11373.	4.0	7
75	Soft x-ray photoelectron spectroscopy study of type-I clathrates. Science and Technology of Advanced Materials, 2008, 9, 044207.	6.1	6
76	Electronic Structures and Thermoelectric Properties of Sb-Doped Type-VIII Clathrate Ba₈Ga₁₆Sn₃₀. Materials Transactions, 2012, 53, 636-640.	1.2	6
77	Optical conductivity spectra of rattling phonons and charge carriers in the type-VIII clathrate Ba8Ga16Sn30. Physical Review B, 2013, 88, .	3.2	6
78	Elastic Softening in the Tetrahedrite Cu12Sb4S13. Physics Procedia, 2015, 75, 443-446.	1.2	6
79	Electronic structure and thermoelectric properties of Sn1.2â^’xNbxTi0.8S3 with a quasi-one-dimensional structure. Journal of Applied Physics, 2019, 125, 175111.	2.5	6
80	A prototype thermoelectric module based on p-type colusite together with n-type nanostructured PbTe for power generation. Applied Physics Letters, 2022, 120, 013501.	3.3	6
81	Thermoelectric Properties of Selenospinel Cu6Fe4Sn12Se32. Journal of Electronic Materials, 2012, 41, 1130-1133.	2.2	5
82	Strong Coupling of Rattling Phonon to Conduction Electrons in Semimetallic Type-I Clathrate Ba₈Ga₁₆Sn₃₀. Journal of the Physical Society of Japan, 2013, 82, 114603.	1.6	5
83	Development of a Thermal Conductivity Measurement System Using the 3Ï‰ Method and Application to Thermoelectric Particles. Journal of Electronic Materials, 2014, 43, 2151-2156.	2.2	5
84	Copperâ€Rich Thermoelectric Sulfides: Sizeâ€Mismatch Effect and Chemical Disorder in the [TS₄]Cu₆ Complexes of Cu₂₆T₂Ge₆S₃₂ (T=Cr, Mo, W) Colusites. Angewandte Chemie, 2019, 131, 15601-15609.	2.0	5
85	Pressure-induced quenching of planar rattling in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Cu</mml:mi><mml:mn>10</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>13</mml:mn></mml:msub></mml:mrow></mml:math> studied by specific heat and x-ray diffraction measurements. Physical Review B, 2020, 102, .	3.2	5
86	Enhancement of the thermoelectric power factor by tuning the carrier concentration in Cu-rich and Ge-poor colusites Cu26+xNb2Ge6â^’xS32. Journal of Materials Chemistry C, 2020, 8, 6442-6449.	5.5	5
87	Single-Crystal Growth of Bi-Sb-Te Thermoelectric Materials by Halide Chemical Vapor Transport Technique. Journal of Electronic Materials, 2012, 41, 1317-1321.	2.2	4
88	Transport properties and electronic density-of-states of Zn-doped colusite Cu26Cr2Ge6S32. Applied Physics Letters, 2020, 117, 173902.	3.3	4
89	Percolation Conduction in Hybrid Thermoelectric Material Consisting of Bi0.88Sb0.12 and Barium Ferrite Particles. Journal of Electronic Materials, 2013, 42, 2350-2355.	2.2	3
90	Simultaneous Pressure-Induced Magnetic and Valence Transitions in Type-I Clathrate Eu₈Ga₁₆Ge₃₀. Journal of the Physical Society of Japan, 2014, 83, 013701.	1.6	3

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91	Synthetic minerals tetrahedrites and colusites for thermoelectric power generation. , 2021, , 197-216.		3
92	An effective synthesis route for high-performance Î±-MgAgSb thermoelectric material. Journal of Materials Science, 2022, 57, 11265-11273.	3.7	3
93	Raman scattering of type-I clathrate compounds: A₈Ga₁₆Ge₃₀(A =) Tj ETQq1 1 0.784314 rgB Conference Series, 2007, 92, 012151.	0.4	2
94	Emergence of Elastic Softening in Sr8Ga16Si30-xGexwith Increasing Ge Concentration. Journal of the Physical Society of Japan, 2011, 80, SA038.	1.6	2
95	Characterization of Terahertz Absorption in Clathrate Compound by Compact Spectroscopic Chip. Japanese Journal of Applied Physics, 2013, 52, 028003.	1.5	2
96	Synthetic Copper-based Sulfide Minerals as Advanced Thermoelectric Materials and the Modularization for Power Generation. Materia Japan, 2015, 54, 335-338.	0.1	2
97	Pressure-Induced Collapse of the Guest Eu Off-Centering in Type-I Clathrate Eu₈Ga₁₆Ge₃₀. Journal of the Physical Society of Japan, 2019, 88, 114601.	1.6	2
98	Cu 2p-1s x-ray emission spectroscopy of mineral tetrahedrite Cu12Sb4S13. Radiation Physics and Chemistry, 2020, 175, 108148.	2.8	2
99	Rapid Synthesis of W_18O_49 via Reactive Spark Plasma Sintering with Controlled Anisotropic Thermoelectric Properties. Evergreen, 2021, 8, 344-350.	0.5	2
100	High-temperature thermoelectric performance of (W1â^'Ti)18O49. Journal of the European Ceramic Society, 2022, 42, 1486-1492.	5.7	2
101	Raman scattering study of the guest ion motion in caged crystals. , 2006, , .		1
102	Raman Scattering of Type-I Clathrate Compounds. Journal of the Physical Society of Japan, 2008, 77, 254-256.	1.6	1
103	Chapter 6 Clathrate-Based Thermoelectrics. , 2016, , 219-236.		1
104	Static and dynamic structures of liquid Ba8Ga16Sn30: a melt of the thermoelectric clathrate compounds. Journal of Physics Condensed Matter, 2018, 30, 455101.	1.8	1
105	A comparative study of thermoelectric Cu2TrTi3S8 (Trâ€¯=â€¯Co and Sc) thiospinels: Enhanced Seebeck coefficient via electronic structure modification. Journal of Alloys and Compounds, 2021, 871, 159548.	5.5	1
106	Cuâ€“S-based thermoelectric compounds with a sphalerite-derived disordered crystal structure. Journal of Solid State Chemistry, 2022, 309, 122960.	2.9	1
107	Optical Conductivity of Rattling Phonons in Type-I Clathrates Ba₈Ga₁₆Ge₃₀ and Ba₈Ga₁₆Sn₃₀. Key Engineering Materials, 2012, 508, 341-346.	0.4	0
108	Direct Observation of the Spatial and Temporal Dynamics of Thermal Diffusion in Clathrate Compounds. , 2012, , .		0

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109	Spatial and temporal dynamics of thermal and carrier diffusions in clathrate compounds. , 2013, , .		0
110	Thermoelectric quaternary sulfide Cu2+Zn1â^'SnS4 (xÂ=Â0â€“0.3): Effects of Cu substitution for Zn. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2021, 272, 115353.	3.5	0
111	Precursor of Metalâ€“Semiconductor Transition in Tetrahedrite Probed by Cu-NMR. , 2020, , .		0