

Walter Lengauer

List of Publications by Year in descending order

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2238
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#	ARTICLE	IF	CITATIONS
1	Ti(C,N) cermets – Metallurgy and properties. International Journal of Refractory Metals and Hard Materials, 1995, 13, 343-351.	1.7	529
2	Solid state properties of group IVb carbonitrides. Journal of Alloys and Compounds, 1995, 217, 137-147.	2.8	198
3	Critical review on the elastic properties of transition metal carbides, nitrides and carbonitrides. Journal of Alloys and Compounds, 1998, 265, 215-233.	2.8	185
4	Lattice parameters and thermal expansion of Ti(C _x N _{1-x}), Zr(C _x N _{1-x}), Hf(C _x N _{1-x}) and TiN _{1-x} from 298 to 1473 K as investigated by high-temperature X-ray diffraction. Journal of Alloys and Compounds, 1994, 215, 121-126.	2.8	167
5	Hardness and elastic properties of Ti(C _x N _{1-x}), Zr(C _x N _{1-x}) and Hf(C _x N _{1-x}). Journal of Alloys and Compounds, 2000, 309, L5-L9.	2.8	142
6	Fabrication and properties of extrusion-based 3D-printed hardmetal and cermet components. International Journal of Refractory Metals and Hard Materials, 2019, 82, 141-149.	1.7	116
7	Fundamentals of liquid phase sintering for modern cermets and functionally graded cemented carbonitrides (FGCC). International Journal of Refractory Metals and Hard Materials, 2000, 18, 307-322.	1.7	111
8	Advances in modern nitrogen-containing hardmetals and cermets. International Journal of Refractory Metals and Hard Materials, 2000, 18, 153-161.	1.7	104
9	Functionally graded hardmetals. Journal of Alloys and Compounds, 2002, 338, 194-212.	2.8	98
10	Reactive diffusion and phase equilibria in the V-C, Nb-C, Ta-C and Ta-N systems. Acta Materialia, 1998, 46, 651-666.	3.8	96
11	Effects of vacancy ordering on structure and properties of vanadium carbide. Journal of Alloys and Compounds, 1997, 261, 192-197.	2.8	86
12	Properties of bulk $\hat{\gamma}$ -TiN _{1-x} prepared by nitrogen diffusion into titanium metal. Journal of Alloys and Compounds, 1992, 186, 293-307.	2.8	80
13	Ti(C,N)-Based Cermets: Critical Review of Achievements and Recent Developments. Solid State Phenomena, 0, 274, 53-100.	0.3	78
14	The titanium-nitrogen system: A study of phase reactions in the subnitride region by means of diffusion couples. Acta Metallurgica Et Materialia, 1991, 39, 2985-2996.	1.9	76
15	Formation of boride layers at the Fe-10% Cr alloy-boron interface. Journal of Alloys and Compounds, 2005, 398, 113-122.	2.8	73
16	Phase transformations in non-stoichiometric vanadium carbide. Journal of Physics Condensed Matter, 1999, 11, 163-184.	0.7	70
17	Phase equilibria and multiphase reaction diffusion in the Cr-C and Cr-N systems. Journal of Phase Equilibria and Diffusion, 1999, 20, 35-44.	0.3	69
18	Solid-state properties of hot-pressed TiB ₂ ceramics. International Journal of Refractory Metals and Hard Materials, 2005, 23, 350-357.	1.7	66

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19	Effect of submicron Ti(C,N) on the microstructure and the mechanical properties of Ti(C,N)-based cermets. <i>International Journal of Refractory Metals and Hard Materials</i> , 2011, 29, 716-723.	1.7	59
20	Phase reactions in the Nb-N system below 1400°C. <i>Acta Materialia</i> , 2000, 48, 2633-2638.	3.8	53
21	Investigations in the scandium-nitrogen system. <i>Journal of Solid State Chemistry</i> , 1988, 76, 412-415.	1.4	49
22	Phase equilibria in the systems Ti-C-N, Zr-C-N and Hf-C-N. <i>Journal of Alloys and Compounds</i> , 1995, 217, 128-136.	2.8	45
23	Diffusion and solubility of Cr in WC. <i>Journal of Alloys and Compounds</i> , 2010, 489, 408-414.	2.8	45
24	Solid-state solubilities of grain-growth inhibitors in WC-Co and WC-MC-Co hardmetals. <i>Journal of Alloys and Compounds</i> , 2016, 675, 407-415.	2.8	44
25	Rietveld analysis of the ordering in V ₈ C ₇ . <i>Journal of Alloys and Compounds</i> , 1998, 269, 60-62.	2.8	43
26	Physical and mechanical properties of cubic VN _{1-x} . <i>Journal of the Less Common Metals</i> , 1985, 109, 351-359.	0.9	40
27	Preparation of binary single-phase line compounds via diffusion couples: The subnitride phases Hf ₃ N _{2-x} and Hf ₄ N _{3-x} . <i>Acta Metallurgica Et Materialia</i> , 1993, 41, 3505-3514.	1.9	40
28	Preparation and properties of compact cubic V-N _{1-x} . <i>Monatshefte für Chemie</i> , 1986, 117, 275-286.	0.9	38
29	Tailoring hardness and toughness gradients in functional gradient hardmetals (FGHMs). <i>International Journal of Refractory Metals and Hard Materials</i> , 2006, 24, 155-161.	1.7	35
30	The crystal structure of a new phase in the titanium-nitrogen system. <i>Journal of the Less Common Metals</i> , 1986, 120, 153-159.	0.9	34
31	Multiphase reaction diffusion in transition metal-carbon and transition metal-nitrogen systems. <i>Journal of Alloys and Compounds</i> , 1995, 229, 80-92.	2.8	33
32	Formation of boride layers at the Fe-25% Cr alloy-boron interface. <i>Journal of Materials Science</i> , 2006, 41, 4948-4960.	1.7	33
33	Lattice parameters and thermal expansion of VN _{1-x} from 298-1000 K. <i>Monatshefte für Chemie</i> , 1986, 117, 713-719.	0.9	31
34	Formation of molybdenum nitrides by ammonia nitridation of MoCl ₅ . <i>Journal of Crystal Growth</i> , 1988, 87, 295-298.	0.7	31
35	Structural phase transition at 205 K in stoichiometric vanadium nitride. <i>Physical Review B</i> , 1988, 38, 12908-12912.	1.1	31
36	The hafnium-nitrogen system: Phase equilibria and nitrogen diffusivities obtained from diffusion couples. <i>Acta Materialia</i> , 1996, 44, 3331-3338.	3.8	30

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37	Diffusion parameters of grain-growth inhibitors in WC based hardmetals with Co, Fe/Ni and Fe/Co/Ni binder alloys. International Journal of Refractory Metals and Hard Materials, 2015, 49, 67-74.	1.7	30
38	The crystal structure of $\hat{\text{l}}\text{-Ti}_3\text{N}_2\hat{\text{a}}^{\sim}\text{x}$: An additional new phase in the Ti-N system. Journal of the Less Common Metals, 1986, 125, 127-134.	0.9	29
39	Electron-probe microanalysis of light elements in multiphase diffusion couples. Mikrochimica Acta, 1997, 126, 279-288.	2.5	29
40	Experimental investigation and thermodynamic assessment of the $\text{C}\hat{\text{a}}\text{€}\text{Co}\hat{\text{a}}\text{€}\text{Fe}\hat{\text{a}}\text{€}\text{Ni}\hat{\text{a}}\text{€}\text{W}$ system. International Journal of Refractory Metals and Hard Materials, 2016, 54, 60-69.	1.7	29
41	Characterization of nitrogen distribution profiles in fcc transition metal nitrides by means of Tc measurements. Surface and Interface Analysis, 1990, 15, 377-382.	0.8	28
42	Electronic structure of stoichiometric and substoichiometric vanadium nitride from photoelectron spectroscopy. Solid State Communications, 1989, 72, 419-423.	0.9	26
43	High-temperature reactive phase formation in the Nb-N system. Journal of Alloys and Compounds, 1998, 269, 233-237.	2.8	26
44	The $\text{Ti}\hat{\text{i}}\text{—,Mo}\hat{\text{i}}\text{—,C}\hat{\text{i}}\text{—,N}$ system: Stability of the $(\text{Ti, Mo})(\text{C, N})\hat{\text{1}}\hat{\text{a}}^{\sim}\text{x}$ phase. Journal of Alloys and Compounds, 1995, 228, 96-101.	2.8	24
45	Quantitative Mass Spectrometry of Decarburisation and Denitridation of Cemented Carbonitrides During Sintering. Mikrochimica Acta, 2001, 136, 83-89.	2.5	24
46	Near-surface microstructural modification of $(\text{Ti,W})(\text{C,N})/\text{Co}$ hardmetals by nitridation. International Journal of Refractory Metals and Hard Materials, 2002, 20, 195-200.	1.7	24
47	Functionally graded $\text{WC}\hat{\text{a}}\text{€}\text{Ti}(\text{C,N})\hat{\text{a}}\text{€}\text{(Ta,Nb)}\hat{\text{a}}\text{€}\text{Co}$ hardmetals: Metallurgy and performance. International Journal of Refractory Metals and Hard Materials, 2013, 36, 38-45.	1.7	24
48	Solubilities of grain-growth inhibitors in WC-Co-based cemented carbides: Thermodynamic calculations compared to experimental data. International Journal of Refractory Metals and Hard Materials, 2016, 61, 121-127.	1.7	24
49	WDS-EPMA nitrogen profile determination in TiN/Ti diffusion couples using homotypic standard materials. Mikrochimica Acta, 1992, 107, 303-310.	2.5	22
50	Cobalt capping: Why is sintered hardmetal sometimes covered with binder?. International Journal of Refractory Metals and Hard Materials, 2010, 28, 466-471.	1.7	22
51	Nitridation sintering of $\text{WC}\hat{\text{a}}\text{€}\text{Ti}(\text{C,N})\hat{\text{a}}\text{€}\text{(Ta,Nb)}\hat{\text{a}}\text{€}\text{Co}$ hardmetals. International Journal of Refractory Metals and Hard Materials, 2013, 36, 22-30.	1.7	22
52	Multiphase layer growth kinetics in finite gas/solid diffusion couples. Acta Materialia, 1996, 44, 4835-4844.	3.8	21
53	Structural phase transition in GaMo_4S_8 by X-ray powder diffraction. Zeitschrift für Kristallographie, 1991, 196, 111-120.	1.1	20
54	Alloyed $\text{W}\hat{\text{a}}\text{€}\text{(Co,Ni,Fe)}\hat{\text{a}}\text{€}\text{C}$ phases for reaction sintering of hardmetals. International Journal of Refractory Metals and Hard Materials, 2010, 28, 638-645.	1.7	19

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55	Interdependency of composition and T_c of δ -VN $_{1-x}$ and the influence and determination of its nitrogen surface diffusion layers. <i>Journal of Physics and Chemistry of Solids</i> , 1988, 49, 59-63.	1.9	18
56	Determination of nitrogen and carbon in refractory nitrides and carbonitrides by means of Dumas gas chromatography. <i>Mikrochimica Acta</i> , 1992, 107, 337-343.	2.5	18
57	Non-metal diffusion coefficients for the Ta δ -C and Ta δ -N systems. <i>Acta Materialia</i> , 1998, 46, 3477-3483.	3.8	18
58	Order-disorder phase transformations and specific heat of nonstoichiometric vanadium carbide. <i>Physics of the Solid State</i> , 1999, 41, 474-480.	0.2	17
59	Interfacial interaction of solid nickel with liquid bismuth and Bi δ -base alloys. <i>Journal of Alloys and Compounds</i> , 2005, 389, 61-74.	2.8	17
60	Combined refinement of diffusion coefficients applied on the Nb-C and Nb-N systems. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1998, 29, 439-446.	1.1	16
61	Growth of the graded zone and its impact on cutting performance in high-pressure nitrogen modified functionally gradient hardmetals. <i>Journal of Alloys and Compounds</i> , 2004, 366, 228-232.	2.8	16
62	Diffusional control of the near-surface microstructure in functional gradient hardmetals. <i>Materialwissenschaft Und Werkstofftechnik</i> , 2005, 36, 460-466.	0.5	16
63	The temperature gradient diffusion couple technique: An application of solid-solid phase reactions for phase diagram imaging. <i>Journal of Solid State Chemistry</i> , 1991, 91, 279-285.	1.4	15
64	The δ -Nb $_{4N3-x}$ / δ -NbN $_{1-x}$ phase transition. <i>Journal of Alloys and Compounds</i> , 1997, 259, L9-L13.	2.8	15
65	Sintering, characterisation, and analysis of functional gradient hardmetals. <i>International Journal of Refractory Metals and Hard Materials</i> , 2008, 26, 179-189.	1.7	15
66	A straightforward method for analysing the grain-size distribution in tungsten carbide - cobalt hardmetals. <i>Mikrochimica Acta</i> , 2010, 168, 309-316.	2.5	15
67	Investigation of the main influencing parameters on the degassing behavior of titanium carbonitrides using mass spectrometry. <i>International Journal of Refractory Metals and Hard Materials</i> , 2017, 63, 38-46.	1.7	15
68	Morphology of δ phase in cemented carbides with Fe-based binders influenced by carbon content and nitrogen atmosphere. <i>Ceramics International</i> , 2019, 45, 20774-20779.	2.3	15
69	The crystal structure of ScTaN $_{1-x}$. <i>Journal of the Less Common Metals</i> , 1988, 141, 157-162.	0.9	14
70	Diffusion Behaviour of the Grain-Growth Inhibitor Vc in Hardmetals. <i>Defect and Diffusion Forum</i> , 0, 323-325, 509-514.	0.4	14
71	Low-temperature thermal expansion of refractory nitrides. <i>Journal of the Less Common Metals</i> , 1991, 168, L7-L9.	0.9	13
72	A study of δ -TiN $_{1-x}$ formation in temperature gradient diffusion couples. <i>Journal of Alloys and Compounds</i> , 1992, 179, 289-297.	2.8	13

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73	Reaction of compact carbonitrides with liquid binder metals. <i>Journal of Alloys and Compounds</i> , 1995, 230, 53-57.	2.8	13
74	?-TaN as a Reference Material for the Determination of High Nitrogen Contents. <i>Mikrochimica Acta</i> , 2004, 146, 1-6.	2.5	13
75	The Ti \bar{f} -Ni \bar{f} -Ni system: investigations relevant for cermet sintering. <i>Journal of Alloys and Compounds</i> , 1991, 177, 119-127.	2.8	12
76	High-temperature nitridation of Nb \bar{e} -Ti alloys in nitrogen. <i>Journal of Alloys and Compounds</i> , 1999, 283, 241-259.	2.8	11
77	The crystal structure of ScNbN $\bar{1}$ \bar{x} and comparisons with related nitride and carbide structures. <i>Journal of Solid State Chemistry</i> , 1989, 82, 186-191.	1.4	10
78	On the application of the Dumas technique for the determination of nitrogen in refractory nitrides. <i>Talanta</i> , 1991, 38, 659-663.	2.9	10
79	Phase diagram imaging by means of temperature-gradient diffusion couples. <i>Journal of Phase Equilibria and Diffusion</i> , 1993, 14, 162-166.	0.3	10
80	Analysis of local composition gradients in the hard-phase grains of cermets using a combination of X-ray diffraction and electron microscopy. <i>International Journal of Refractory Metals and Hard Materials</i> , 2008, 26, 263-275.	1.7	10
81	Thermal dependence of elastic properties of polycrystalline TiC $\bar{0}$.97 and TiC $\bar{0}$.40N $\bar{0}$.60 alloys studied by surface Brillouin scattering. <i>International Journal of Refractory Metals and Hard Materials</i> , 2014, 45, 212-217.	1.7	9
82	Non-stoichiometry and twinning in NbN $\bar{1}$ \bar{x} : A study of synthesis and structure in a defect NaCl-type solid. <i>Journal of the Less Common Metals</i> , 1990, 160, 193-196.	0.9	8
83	Sintering Mechanisms of Functionally Graded Cemented Carbides. <i>Materials Science Forum</i> , 0, 835, 116-198.	0.3	8
84	Thermochemistry of the formation of nitrogen-rich surface layers on transition metal nitrides: A study of the VN $\bar{1}$ \bar{x} -N $\bar{2}$ couple. <i>Journal of Physics and Chemistry of Solids</i> , 1991, 52, 393-399.	1.9	7
85	Investigations in the ternary system Ti-Mo-N by means of EPMA and XRD. <i>Mikrochimica Acta</i> , 1987, 91, 211-218.	2.5	6
86	Thermochemical Basis of the Preparation of Well-Defined Transition Metal Carbide, Nitride and Carbonitride Reference Materials for Electron-Probe Microanalysis (EPMA). <i>Solid State Phenomena</i> , 0, 274, 20-42.	0.3	6
87	Sintering of Ti(C,N)-WC/Mo $\bar{2}$ C-(Ta,Nb)C-Co/Ni Cermets Investigated by CO and N $\bar{2}$ Outgassing. <i>Metals</i> , 2019, 9, 427.	1.0	6
88	Vacancy-induced modifications to the local densities of states of VN \bar{x} . <i>Physica Scripta</i> , 1990, 41, 584-587.	1.2	5
89	Simulation of diffusion-controlled layer growth using the FFD method. <i>Modelling and Simulation in Materials Science and Engineering</i> , 1998, 6, 141-152.	0.8	5
90	Metallurgy and thermochemistry of cermet/hardmetal laminates. <i>International Journal of Refractory Metals and Hard Materials</i> , 2015, 50, 282-289.	1.7	5

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91	Vacancy-induced fine structure in the K edges of sub-stoichiometric titanium and vanadium nitrides. Nuclear Instruments & Methods in Physics Research B, 1995, 97, 123-126.	0.6	4
92	Multiphase Reaction Diffusion in the Cr-C and the Cr-N Systems. Defect and Diffusion Forum, 1997, 143-147, 569-574.	0.4	4
93	EPMA of spinodal-like decomposition patterns in (Ti _x Nb _{1-x})N. Surface and Interface Analysis, 2000, 30, 368-371.	0.8	4
94	EPMA and GDOES in Functional-Gradient Hardmetal Systems. Mikrochimica Acta, 2000, 133, 223-231.	2.5	4
95	Layer-Growth of Tantalum Nitrides by Nitridation of Ta Metal: the Basis of the Preparation of a Well-Characterised Nitrogen Standard Material. Defect and Diffusion Forum, 2001, 194-199, 1613-1618.	0.4	4
96	Novel fine-grained hardmetals by use of multiphase powder precursors and reactive nitrogen sintering. International Journal of Refractory Metals and Hard Materials, 2010, 28, 362-369.	1.7	4
97	Ferrometric determination of vanadium in VN _{1-x} using visible and potentiometric equivalence point detection. Fresenius Zeitschrift für Analytische Chemie, 1985, 322, 23-25.	0.7	3
98	Phase identification in Ti/TiN diffusion couples with the Kossel technique. Mikrochimica Acta, 1992, 109, 233-242.	2.5	3
99	Formation of Molybdenum Nitrides by Ammonia Nitridation of Mo Powder and Sheet. Defect and Diffusion Forum, 2001, 194-199, 1607-1612.	0.4	3
100	Characterisation and Performance Optimisation of WC-MC/M(C,N)-Co Hardmetals. Metals, 2019, 9, 435.	1.0	3
101	On the use of TiO ₂ in Ti(C,N)-WC/Mo ₂ C-(Ta,Nb)C-Co/Ni cermets. International Journal of Refractory Metals and Hard Materials, 2020, 91, 105274.	1.7	3
102	X-ray mapping of microstructures in hardmetals and cermets. Surface and Interface Analysis, 2002, 34, 343-345.	0.8	2
103	Diffusion in the Hf-N System. Materials Science Forum, 1994, 155-156, 549-552.	0.3	1
104	Nitrogen-Induced Formation of Nano-Structured Precipitations in the Ti-W-C-N System. Defect and Diffusion Forum, 2005, 237-240, 1121-1128.	0.4	1
105	Direct representation of phase equilibria in binary transition metal-nitrogen systems by means of temperature gradient diffusion couples. Journal of Alloys and Compounds, 1992, 178, 205-209.	2.8	0
106	Preparation of thick GaN layers by chemical vapour deposition for contact reaction investigations. Diamond and Related Materials, 2000, 9, 464-466.	1.8	0