Debashis Mukherji

List of Publications by Year
in descending order

120	1,808	279798	361022
papers	citations	23 h-index	35 g-index

122	122	122	1136
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Metallic materials for structural applications beyond nickel-based superalloys. Jom, 2009, 61, 61-67.	1.9	92
2	Rhenium distribution in the matrix and near the particleâ€“matrix interface in a model Niâ€“Alâ€“Taâ€“Re superalloy. Scripta Materialia, 2002, 46, 235-240.	5.2	86
3	Stacking fault formation in Î³â€² phase during monotonic deformation of IN738LC at elevated temperatures. Acta Metallurgica Et Materialia, 1991, 39, 1515-1524.	1.8	70
4	Coâ€Reâ€based Alloys: A New Class of High Temperature Materials?. Advanced Engineering Materials, 2007, 9, 876-881.	3.5	69
5	Fabrication of nanoporous Ni-based superalloy membranes. Acta Materialia, 2005, 53, 1397-1406.	7.9	68
6	Lattice misfit measurement in Inconel 706 containing coherent Î³â€² and Î³â€³ precipitates. Scripta Materialia, 2003, 48, 333-339.	5.2	58
7	Deformation-induced dislocation networks at the Î³-Î³â€² interfaces in the single-crystal superalloy SC16: A mechanism-based analysis. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1996, 74, 229-249.	0.6	46
8	Steady state creep behaviour of TiC particulate reinforced Tiâ€“6Alâ€“4V composite. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1998, 256, 301-307.	5.6	42
9	Nano-structured materials produced from simple metallic alloys by phase separation. Nanotechnology, 2005, 16, 2176-2187.	2.6	42
10	Design of Nanoporous Superalloy Membranes for Functional Applications. Advanced Engineering Materials, 2003, 5, 916-918.	3.5	38
11	Mechanical behaviour and microstructural evolution in the single crystal superalloy SC16. Acta Materialia, 1997, 45, 3143-3154.	7.9	37
12	Effect of rhenium addition on the microstructure of the superalloy Inconel 706. Acta Materialia, 2008, 56, 1609-1618.	7.9	36
13	High-temperature oxidation behavior of Moâ€“Siâ€“B-based and Coâ€“Reâ€“Cr-based alloys. Intermetallics, 2014, 48, 34-43.	3.9	36
14	Investigation of microstructural changes in INCONEL 706 at high temperatures by In-Situ small-angle neutron scattering. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2003, 34, 2781-2792.	2.2	31
15	The effects of boron addition on the microstructure and mechanical properties of Coâ€“Re-based high-temperature alloys. Scripta Materialia, 2012, 66, 60-63.	5.2	31
16	Oxidation Behaviour of Model Cobalt-Rhenium Alloys During Short-Term Exposure to Laboratory Air at Elevated Temperature. Oxidation of Metals, 2009, 71, 157-172.	2.1	30
17	Analysis of antiphase domain growth in ternary FeCo alloys after different cooling rates and annealing treatments using neutron diffraction and positron annihilation. Journal of Alloys and Compounds, 2011, 509, 195-199.	5.5	29
18	Relaxation mechanisms in Fe-Al-C alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2003, 34, 255-266.	2.2	27

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19	Microstructural characterization of a modified 706-type Ni-Fe superalloy by small-angle neutron scattering and electron microscopy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2005, 36, 3439-3450.	2.2	27
20	Creep properties beyond 1100Â°C and microstructure of Coâ€“Reâ€“Cr alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2010, 528, 650-656.	5.6	27
21	Evaluation of anisotropic small-angle neutron scattering data; a faster approach. Journal of Applied Crystallography, 2003, 36, 854-859.	4.5	26
22	Investigation of phase transformations by in-situ neutron diffraction in a Coâ€“Re-based high temperature alloy. Materials Letters, 2010, 64, 2608-2611.	2.6	25
23	The effect of alloyed nickel on the short-term high temperature oxidation behaviour of Coâ€“Reâ€“Cr-based alloys. Corrosion Science, 2015, 93, 19-26.	6.6	25
24	Investigations of early stage precipitation in a tungsten-rich nickel-base superalloy using SAXS and SANS. Journal of Alloys and Compounds, 2014, 612, 90-97.	5.5	24
25	Nanocrystalline Ni3Al-type intermetallic phase powder from Ni-base superalloys. Nanotechnology, 2004, 15, 648-657.	2.6	22
26	Neutron and X-ray diffraction measurements on micro- and nano-sized precipitates embedded in a Ni-based superalloy and after their extraction from the alloy. Acta Materialia, 2006, 54, 1307-1316.	7.9	22
27	Microstructures of Coâ€“Reâ€“Cr, Moâ€“Si and Moâ€“Siâ€“B high-temperature alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 510-511, 337-341.	5.6	22
28	The influence of C/Ta ratio on TaC precipitates in Co-Re base alloys investigated by small-angle neutron scattering. Acta Materialia, 2017, 132, 354-366.	7.9	22
29	Beyond Ni-based superalloys: Development of CoRe-based alloys for gas turbine applications at very high temperatures. International Journal of Materials Research, 2011, 102, 1125-1132.	0.3	21
30	The Hexagonal Close-Packed (HCP)Ââ‡†ÂFace-Centered Cubic (FCC) Transition in Co-Re-Based Experimental Alloys Investigated by Neutron Scattering. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2012, 43, 1834-1844.	2.2	20
31	Deformation behaviour of freestanding single-crystalline Ni₃Al-based nanoparticles. International Journal of Materials Research, 2011, 102, 532-537.	0.3	19
32	High temperature stability of Cr-carbides in an experimental Coâ€“Re-based alloy. International Journal of Materials Research, 2010, 101, 340-348.	0.3	18
33	Application of In Situ Neutron and X-Ray Measurements at High Temperatures in the Development of Co-Re-Based Alloys for Gas Turbines. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 22-30.	2.2	17
34	Thermodynamic calculations in the development of high-temperature Coâ€“Re-based alloys. Journal of Alloys and Compounds, 2014, 582, 50-58.	5.5	17
35	Damage mechanisms of single and polycrystalline nickel base superalloys SC16 and IN738LC under high temperature LCF loading. International Journal of Fatigue, 1997, 19, 89-94.	5.7	16
36	Oxidation behaviour of experimental Coâ€“Re-base alloys in laboratory air at 1000Â°C. International Journal of Materials Research, 2009, 100, 104-111.	0.3	16

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37	Shear Melting and High Temperature Embrittlement: Theory and Application to Machining Titanium. Physical Review Letters, 2015, 114, 165501.	7.8	16
38	On the measurement of lattice mismatch between Î³ and Î³â€² phases in nickel-base superalloys by CBED technique. Scripta Materialia, 1996, 35, 117-122.	5.2	15
39	Measurement of Î³â€² precipitate morphology by small angle neutron scattering. Scripta Materialia, 1999, 41, 31-38.	5.2	15
40	Character of dislocations at the Î³/Î³â€² interfaces and internal stresses in nickel-base superalloys. Acta Materialia, 2000, 48, 3157-3167.	7.9	15
41	Dependence of the MoSe2 Formation on the Mo Orientation and the Na Concentration for Cu(In,Ga)Se2 Thin-Film Solar Cells. Materials Research Society Symposia Proceedings, 2005, 865, 811.	0.1	15
42	Stability of TaC precipitates in a Coâ€“Re-based alloy being developed for ultra-high-temperature applications. Journal of Applied Crystallography, 2016, 49, 1253-1265.	4.5	15
43	Cyclic magnetic-field -induced deformation and magneto-mechanical fatigue of Ni-Mn-Ga ferromagnetic martensites. Materials Research Society Symposia Proceedings, 2003, 785, 1221.	0.1	14
44	Characterization of core-shell nanoparticles by small angle neutron scattering. Applied Physics A: Materials Science and Processing, 2007, 88, 277-284.	2.3	14
45	Effects of size reduction on the structure and magnetic properties of coreâ€“shell Ni3Si/silica nanoparticles prepared by electrochemical synthesis. Journal of Alloys and Compounds, 2014, 584, 119-127.	5.5	14
46	Some implications of the particle and climb geometry on the climb resistance in nickel-base superalloys. Acta Materialia, 1996, 44, 1529-1539.	7.9	13
47	On the nature of lattice distortion near the Î³/Î³â€² interfaces in nickel-base superalloys. Scripta Materialia, 1997, 36, 1233-1238.	5.2	13
48	Neutron-, X-ray- and electron-diffraction measurements for the determination of ?/? ? lattice misfit in Ni-base superalloys. Applied Physics A: Materials Science and Processing, 2002, 74, s1446-s1448.	2.3	13
49	Ni3Si(Al)/a-SiOxcoreâ€“shell nanoparticles: characterization, shell formation, and stability. Nanotechnology, 2006, 17, 4195-4203.	2.6	13
50	Neutron and synchrotron probes in the development of Coâ€“Re-based alloys for next generation gas turbines with an emphasis on the influence of boron additives. Journal of Applied Crystallography, 2014, 47, 1417-1430.	4.5	13
51	Determination of Î³/Î³ interface types in a Î³-TiAl alloy using convergent beam electron diffraction. Scripta Materialia, 2002, 47, 757-762.	5.2	12
52	Microstructural characterisation of a Niâ€“Fe-based superalloy byin situsmall-angle neutron scattering measurements. Journal of Physics Condensed Matter, 2008, 20, 104220.	1.8	12
53	The measurement of internal strain in coreâ€“shell Ni3Si(Al)â€“SiOxnanoparticles. Nanotechnology, 2009, 20, 245704.	2.6	12
54	Evaluation procedure for anisotropic SANS. Journal of Applied Crystallography, 2000, 33, 834-838.	4.5	11

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55	Determination of Î³â€² solution temperature in Re-rich Ni-base superalloy by small-angle neutron scattering. Journal of Applied Crystallography, 2001, 34, 541-548.	4.5	11
56	Co-Re-based alloys for high temperature applications: Design considerations and strengthening mechanisms. Journal of Physics: Conference Series, 2010, 240, 012066.	0.4	11
57	Microstructural study of boron-doped Coâ€“Reâ€“Cr alloys by means of transmission electron microscopy and electron energy-loss spectroscopy. International Journal of Materials Research, 2012, 103, 554-558.	0.3	11
58	Sigma phase evolution in Coâ€“Reâ€“Cr-based alloys at 1100ÂÂ°C. Intermetallics, 2014, 48, 54-61.	3.9	11
59	Investigation of Î³â€² precipitates in nickel-base single-crystal superalloy (SC 16) by SANS. Physica B: Condensed Matter, 1997, 234-236, 1008-1010.	2.7	10
60	Effect of composition on the matrix transformation of the Co-Re-Cr-Ta-C alloys. Metals and Materials International, 2016, 22, 562-571.	3.4	10
61	The effect of Ni and Si additions on the oxidation behaviour of Co-17Re-18Cr alloys. Corrosion Science, 2019, 159, 108135.	6.6	10
62	Forging of metallic nano-objects for the fabrication of submicron-size components. Nanotechnology, 2007, 18, 125303.	2.6	9
63	Optimization of Cr-Content for High-Temperature Oxidation Behavior of Coâ€“Reâ€“Si-Base Alloys. Oxidation of Metals, 2013, 80, 49-59.	2.1	9
64	Characterization of borides in Coâ€“Reâ€“Cr-based high-temperature alloys. Journal of Alloys and Compounds, 2013, 569, 82-87.	5.5	9
65	Microstructure and Oxidation Mechanism Evolution of Coâ€“17Reâ€“25Crâ€“2Si in the Temperature Range 800â€“1,100ÂÂ°C. Oxidation of Metals, 2015, 83, 465-483.	2.1	9
66	Carbides in Coâ€“Reâ€“Cr-based high-temperature alloys. Journal of Materials Science, 2016, 51, 7145-7155.	3.7	9
67	Sans from low volume fraction of plate-like precipitates present in two single-crystal Ni-base superalloys. Scripta Materialia, 1998, 39, 715-721.	5.2	8
68	Characterization of nanoporous superalloy by SANS. Physica B: Condensed Matter, 2006, 385-386, 626-629.	2.7	7
69	<i>In Situ</i> Investigation with Neutrons on the Evolution of Î³ ' Precipitates at High Temperatures in a Single Crystal Ni-Base Superalloy. Advanced Materials Research, 0, 278, 42-47.	0.3	7
70	Design Considerations and Strengthening Mechanisms in Developing Co-Re-Based Alloys for Applications at + 100Â°C above Ni-Superalloys. Advanced Materials Research, 0, 278, 539-544.	0.3	7
71	Beyond Ni-base superalloys: Influence of Cr addition on Co-Re base alloys strengthened by nano-sized TaC precipitates. Physica B: Condensed Matter, 2018, 551, 1-5.	2.7	7
72	Matrix Transformation in Boron Containing High-Temperature Coâ€“Reâ€“Cr Alloys. Metals and Materials International, 2018, 24, 934-944.	3.4	7

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73	Microstructural characterization of Inconel 706 alloy. Surface and Interface Analysis, 2004, 36, 546-551.	1.8	6
74	Phase analysis and lattice mismatches in superalloys DT706 and Inconel 706. Physica B: Condensed Matter, 2006, 385-386, 594-596.	2.7	6
75	The effect of Ni additions on the oxidation behaviour of Coâ€“Reâ€“Cr high-temperature alloys. Materials at High Temperatures, 2018, 35, 177-186.	1.0	6
76	Additional Phases at High Boron Content in High-Temperature Coâ€“Reâ€“Cr Alloys. Metals, 2018, 8, 621.	2.3	6
77	Co-Re-based alloys a new class of material for gas turbine applications at very high temperatures. Advances in Materials Research (South Korea), 2012, 1, 205-219.	0.6	6
78	Characterization of Single Crystal Superalloy SC16 by Small Angle Neutron Scattering and Complementary Analytical Techniques. Scripta Materialia, 1998, 38, 803-809.	5.2	5
79	SANS examination of precipitate microstructure in the creep-exposed single-crystal Ni-base superalloy SC16. Applied Physics A: Materials Science and Processing, 2002, 74, s1083-s1085.	2.3	5
80	Intragranular Precipitation in Inconel 706: 3D Atom-Probe and HRTEM Investigations. Steel Research International, 2004, 75, 74-78.	1.8	5
81	Influence of Ïƒ Phase on the Allotropic Transformation of the Matrix in Co-Re-Cr-Based Alloys with Ni Addition. Metals, 2018, 8, 706.	2.3	5
82	Observation of planar stacking faults in a Ti-rich two-phase Ti-Al alloy after deformation at elevated temperatures. Philosophical Magazine Letters, 2000, 80, 19-26.	1.2	4
83	Microstructural characterisation of defect structures in a TiAl-base Tiâ€“47Alâ€“2Nbâ€“2Mn(at.%)+0.8vol.%TiB2 alloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 300, 299-308.	5.6	4
84	In situ SANS investigation of precipitate microstructure at elevated temperatures in Re-rich Ni-base superalloy. Applied Physics A: Materials Science and Processing, 2002, 74, s1074-s1076.	2.3	4
85	Precipitate scanning in Ni-base Î³/Î³â€²-superalloys. Nuclear Instruments & Methods in Physics Research B, 2003, 200, 255-260.	1.4	4
86	Morphology of Î³' Precipitates in Experimental W- and Re- Containing Ni-Base Superalloys. Materials Science Forum, 2003, 426-432, 815-820.	0.3	4
87	Misfit Investigations of Nickel-Base Superalloys. Materials Science Forum, 2003, 426-432, 821-828.	0.3	4
88	Coating of meso-porous metallic membranes with oriented channel-likefine pores by pulsed laser deposition. Nanotechnology, 2008, 19, 065706.	2.6	4
89	Stability of phases at high temperatures in CoRe based alloys being developed for ultra-high temperature applications. Journal of Physics: Conference Series, 2012, 340, 012052.	0.4	4
90	Coexistence of Two Cubic-Lattice Co Matrices at High Temperatures in Co-Re-Cr-Ni Alloy Studied by Neutron Diffraction. Advances in Materials Science and Engineering, 2018, 2018, 1-6.	1.8	4

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91	TaC Precipitation Kinetics During Cooling of Coâ€"Reâ€Based Alloys. Advanced Engineering Materials, 2021, 23, 2100129.	3.5	4
92	The effect of local composition on defect structure in a near-Î³-TiAl alloy with duplex microstructure. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2001, 81, 2653-2664.	0.6	3
93	Effect of Cr and Ni on the microstructural evolution in Coâ€"Reâ€"Crâ€"Ni alloys. International Journal of Materials Research, 2019, 110, 1092-1104.	0.3	3
94	In Situ Neutron Diffraction Characterization of Phases in Co-Re-Based Alloys at High Temperatures. Acta Physica Polonica A, 2015, 128, 684-688.	0.5	3
95	A Novel Method for the Synthesis of Core-shell Magnetic Nanoparticle. Defence Science Journal, 2016, 66, 291.	0.8	3
96	Design of Nanoporous Superalloy Membranes by Self-Assembly of the γ'-Phase. , 2004, , .		3
97	Small-angle neutron-scattering studies on oriented single-crystal superalloys. Physica B: Condensed Matter, 1997, 241-243, 347-349.	2.7	2
98	Microchemical characterization of phases in Inconel 706 and DT 706 alloys after aging. Surface and Interface Analysis, 2007, 39, 201-205.	1.8	2
99	Dependence of small-angle neutron scattering contrast on the difference in thermal expansions of phases in two-phase alloys. Journal of Applied Crystallography, 2009, 42, 981-989.	4.5	2
100	Pore structure characterization and in-situ diffusion test in nanoporous membrane using SANS. Journal of Physics: Conference Series, 2010, 247, 012023.	0.4	2
101	Investigation of metal-matrix composite containing liquid-phase dispersion. Journal of Physics: Conference Series, 2012, 340, 012098.	0.4	2
102	Current status of Co-Re-based alloys being developed to supplement Ni-based superalloys for ultra-high temperature applications in gas turbines. Metallic Materials, 2016, 53, 287-294.	0.3	2
103	Creep deformation of Co-Re-Ta-C alloys with varying C contentâ€"investigated in-situ by simultaneous synchrotron radiation diffraction. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2018, 719, 124-131.	5.6	2
104	Effect of the Î³â€™ volume fraction on the creep strength of Ni-base superalloys. International Journal of Materials Research, 2022, 94, 478-484.	0.3	2
105	Investigation of crystallinity of germanium thin films vacuum deposited on GaAs. Journal of Materials Science: Materials in Electronics, 1991, 2, 141-145.	2.2	1
106	Core-Shell Nanoparticles. Imaging & Microscopy, 2006, 8, 15-16.	0.1	1
107	Damage and Fatigue Life of Superalloy IN738LC under Thermo-Mechanical and Low Cycle Fatigue Loading. , 1996, , 97-102.		1
108	Grain Size Measurement in Experimental Co-Re-based Alloys to Study Grain Coarsening, Part I. Praktische Metallographie/Practical Metallography, 2014, 51, 499-513.	0.3	1

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109	Grain Size Measurement in Experimental Co-Re-based Alloys to Study Grain Coarsening. Praktische Metallographie/Practical Metallography, 2014, 51, 583-603.	0.3	1
110	DEFORMATION BEHAVIOR AND MICROSTRUCTURAL EVOLUTION IN IN738LC UNDER LCF LOADING. , 1992, , 385-390.		1
111	Estimation of the critical stress for Î³' shearing in a single crystal superalloy from LCF data. , 1998, , 351-356.		1
112	Program for finding different zone axes in transmission electron microscopy. Materials Characterization, 1994, 33, 403-405.	4.4	0
113	Small-Angle Neutron Scattering: A Tool for Microstructural Investigation of High-Temperature Materials. Materials Science Forum, 2003, 426-432, 755-760.	0.3	0
114	A theory of nonlinear susceptibility in polaritonic band-gap materials doped with multi-level atoms. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 2994-2997.	0.8	0
115	High-power laser interaction effects with metallic pressure vessel. , 2006, , .		0
116	Beschichtung von metallischen Membranen mittels Pulsed Laser Deposition. Vakuum in Forschung Und Praxis, 2008, 20, 14-19.	0.1	0
117	Effect of Different Cr and Ni Additions on Oxidation Behavior of Co-Re-Based Alloys. Jom, 2020, 72, 393-402.	1.9	0
118	In Situ Neutron Diffraction Study of Ni Addition in Coâ€“Reâ€“Cr High-Temperature Alloys and Influence on Phase Transformations. Journal of Surface Investigation, 2020, 14, S179-S184.	0.5	0
119	Structure and Microstructure of Advanced Materials Characterized by Neutron Diffraction. Materials Science Forum, 0, 1016, 1404-1410.	0.3	0
120	Deformation Behaviour and Cyclc Life of the Alloy IN738LC Under Creep-Fatigue Loading. , 1996, , 819-824.		0