Henrik Lund Frandsen

List of Publications by Year
in descending order

90 papers	1,910 citations	236833 25 h-index	330025 37 g-index
91 all docs	91 docs citations	91 times ranked	1331 citing authors

#	Article	IF	Citations
1	A modeling study of lifetime and performance improvements of solid oxide fuel cell by reversed pulse operation. Journal of Power Sources, 2022, 523, 231048.	4.0	14
2	Electrothermally balanced operation of solid oxide electrolysis cells. Journal of Power Sources, 2022, 523, 231040.	4.0	16
3	Production of a monolithic fuel cell stack with high power density. Nature Communications, 2022, 13, 1263.	5.8	24
4	Fracture toughness of reactive bonded Coâ€“Mn and Cuâ€“Mn contact layers after long-term aging. Ceramics International, 2022, 48, 20699-20711.	2.3	2
5	Torsional behaviour of a glass-ceramic joined alumina coated Crofer 22 APU steel. Ceramics International, 2022, 48, 25368-25373.	2.3	1
6	Ammonia Driven Reversible Solid Oxide Cell As Large-Scale Grid Energy Storage System. ECS Meeting Abstracts, 2022, MA2022-01, 504-504.	0.0	0
7	Stack-Scale Modeling of Ammonia-Fueled Solid Oxide Fuel Cell. ECS Meeting Abstracts, 2022, MA2022-01, 1960-1960.	0.0	0
8	Stable, asymmetric, tubular oxygen transport membranes of (Sc2O3)0.10(Y2O3)0.01(ZrO2)0.89 â€“ LaCr0.85Cu0.10Ni0.05O3-Î´. Open Ceramics, 2022, 11, 100292.	1.0	0
9	Fast relaxation of stresses in solid oxide cells through reduction. Part I: Macro-stresses in the cell layers. International Journal of Hydrogen Energy, 2021, 46, 1548-1559.	3.8	7
10	High toughness well conducting contact layers for solid oxide cell stacks by reactive oxidative bonding. Journal of the European Ceramic Society, 2021, 41, 2699-2708.	2.8	3
11	Fast and stable approximation of laminar and turbulent flows in channels by Darcyâ€™s Law. AEJ - Alexandria Engineering Journal, 2021, 60, 2155-2165.	3.4	13
12	Multiscale modeling of degradation of full solid oxide fuel cell stacks. International Journal of Hydrogen Energy, 2021, 46, 27709-27730.	3.8	32
13	Recent Highlights of Solid Oxide Fuel Cell and Electrolysis Research at DTU Energy. ECS Transactions, 2021, 103, 327-336.	0.3	1
14	Recent Highlights of Solid Oxide Fuel Cell and Electrolysis Research at DTU Energy. ECS Meeting Abstracts, 2021, MA2021-03, 199-199.	0.0	0
15	Modelling of local mechanical failures in solid oxide cell stacks. Applied Energy, 2021, 293, 116901.	5.1	22
16	Performance Analysis of Ammonia in Solid Oxide Fuel Cells. ECS Meeting Abstracts, 2021, MA2021-03, 30-30.	0.0	0
17	Performance Analysis of Ammonia in Solid Oxide Fuel Cells. ECS Transactions, 2021, 103, 185-199.	0.3	2
18	Strength and hydrothermal stability of NiOâ€“stabilized zirconia solid oxide cells fuel electrode supports. Journal of the European Ceramic Society, 2021, 41, 4206-4216.	2.8	4

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19	Continuum scale modelling and complementary experimentation of solid oxide cells. Progress in Energy and Combustion Science, 2021, 85, 100902.	15.8	58
20	Ni migration in solid oxide cell electrodes: Review and revised hypothesis. Fuel Cells, 2021, 21, 415-429.	1.5	63
21	Tetragonal phase stability maps of ceria-yttria co-doped zirconia: From powders to sintered ceramics. Ceramics International, 2020, 46, 9396-9405.	2.3	12
22	Interface Fracture Energy of Contact Layers in a Solid Oxide Cell Stack. ACS Applied Energy Materials, 2020, 3, 2372-2385.	2.5	6
23	Double Torsion testing of thin porous zirconia supports for energy applications: Toughness and slow crack growth assessment. Journal of the European Ceramic Society, 2020, 40, 3191-3199.	2.8	10
24	Life cycle assessment of H2O electrolysis technologies. International Journal of Hydrogen Energy, 2020, 45, 23765-23781.	3.8	74
25	SOFC stacks for mobile applications with excellent robustness towards thermal stresses. International Journal of Hydrogen Energy, 2020, 45, 29201-29211.	3.8	31
26	Improving the fracture toughness of stabilized zirconia-based solid oxide cells fuel electrode supports: Effects of type and concentration of stabilizer(s). Journal of the European Ceramic Society, 2020, 40, 5670-5682.	2.8	26
27	A fully-homogenized multiphysics model for a reversible solid oxide cell stack. International Journal of Hydrogen Energy, 2019, 44, 23330-23347.	3.8	42
28	Investigation of electrophoretic deposition as a method for coating complex shaped steel parts in solid oxide cell stacks. Surface and Coatings Technology, 2019, 380, 125093.	2.2	13
29	Enhancing the Robustness of Brittle Solid Oxide Cell Stack Components. ECS Transactions, 2019, 91, 2201-2211.	0.3	5
30	Improved Robustness and Low Area Specific Resistance with Novel Contact Layers for the Solid Oxide Cell Air Electrode. ECS Transactions, 2019, 91, 2225-2232.	0.3	4
31	Improving the interface adherence at sealings in solid oxide cell stacks. Journal of Materials Research, 2019, 34, 1167-1178.	1.2	12
32	Modeling the Mechanical Integrity of Generic Solid Oxide Cell Stack Designs Exposed to Longâ€term Operation. Fuel Cells, 2019, 19, 96-109.	1.5	21
33	Influence of porosity on mechanical properties of tetragonal stabilized zirconia. Journal of the European Ceramic Society, 2018, 38, 1720-1735.	2.8	41
34	Investigating phase behavior and structural changes in NiO/Ni-YSZ composite with monochromatic in-situ 2D and static 3D neutron imaging. Physica B: Condensed Matter, 2018, 551, 24-28.	1.3	6
35	A three dimensional multiphysics model of a solid oxide electrochemical cell: A tool for understanding degradation. International Journal of Hydrogen Energy, 2018, 43, 11913-11931.	3.8	38
36	Localized carbon deposition in solid oxide electrolysis cells studied by multiphysics modeling. Journal of Power Sources, 2018, 394, 102-113.	4.0	25

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37	Development of High Temperature Mechanical Rig for Characterizing the Viscoplastic Properties of Alloys Used in Solid Oxide Cells. Journal of Testing and Evaluation, 2018, 46, 1918-1929.	0.4	5
38	Determination of the Resistance of Cone-Shaped Solid Electrodes. Journal of the Electrochemical Society, 2017, 164, E3035-E3039.	1.3	1
39	Determination of the bonding strength in solid oxide fuel cellsâ€™ interfaces by Schwickerath crack initiation test. Journal of the European Ceramic Society, 2017, 37, 3565-3578.	2.8	18
40	On the Properties and Long-Term Stability of Infiltrated Lanthanum Cobalt Nickelates (LCN) in Solid Oxide Fuel Cell Cathodes. Journal of the Electrochemical Society, 2017, 164, F748-F758.	1.3	8
41	Transient deformational properties of high temperature alloys used in solid oxide fuel cell stacks. Journal of Power Sources, 2017, 351, 8-16.	4.0	8
42	Secondary creep of porous metal supports for solid oxide fuel cells by a CDM approach. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 691, 155-161.	2.6	10
43	Coupling between creep and redox behavior in nickel - yttria stabilized zirconia observed in-situ by monochromatic neutron imaging. Journal of Power Sources, 2017, 340, 167-175.	4.0	17
44	Investigation of a Spinelâ€forming Cuâ€Mn Foam as an Oxygen Electrode Contact Material in a Solid Oxide Cell Single Repeating Unit. Fuel Cells, 2017, 17, 730-734.	1.5	17
45	Production and Reliability Oriented SOFC Cell and Stack Design. ECS Transactions, 2017, 78, 2231-2249.	0.3	5
46	Mechanical Properties of Supports and Halfâ€Cells for Solid Oxide Electrolysis Influenced by Aluminaâ€Zirconia Composites. Fuel Cells, 2017, 17, 132-143.	1.5	8
47	Efficient modeling of metallic interconnects for thermo-mechanical simulation of SOFC stacks: Homogenized behaviors and effect of contact. International Journal of Hydrogen Energy, 2016, 41, 6433-6444.	3.8	21
48	<i>In situ</i> time-of-flight neutron imaging of NiOâ€“YSZ anode support reduction under influence of stress. Journal of Applied Crystallography, 2016, 49, 1674-1681.	1.9	21
49	Accelerated creep in solid oxide fuel cell anode supports during reduction. Journal of Power Sources, 2016, 323, 78-89.	4.0	49
50	Influence of pore former on porosity and mechanical properties of Ce0.9Gd0.1O1.95 electrolytes for flue gas purification. Ceramics International, 2016, 42, 4546-4555.	2.3	4
51	Influence of temperature and atmosphere on the strength and elastic modulus of solid oxide fuel cell anode supports. Journal of Power Sources, 2016, 311, 1-12.	4.0	38
52	Homogenization of steady-state creep of porous metals using three-dimensional microstructural reconstructions. International Journal of Solids and Structures, 2016, 78-79, 38-46.	1.3	20
53	Investigation of the bonding strength and bonding mechanisms of SOFCs interconnectorâ€“electrode interfaces. Materials Letters, 2016, 162, 250-253.	1.3	16
54	Modeling the Microstructural Evolution During Constrained Sintering. Journal of the American Ceramic Society, 2015, 98, 3490-3495.	1.9	11

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55	Computation of Effective Steadyâ€State Creep of Porous Niâ€"YSZ Composites with Reconstructed Microstructures. Journal of the American Ceramic Society, 2015, 98, 2873-2880.	1.9	12
56	Residual stresses and strength of multilayer tape cast solid oxide fuel and electrolysis half-cells. Journal of Power Sources, 2015, 288, 243-252.	4.0	24
57	Effect of stress on NiO reduction in solid oxide fuel cells: a new application of energy-resolved neutron imaging. Journal of Applied Crystallography, 2015, 48, 401-408.	1.9	18
58	Numerical evaluation of oxide growth in metallic support microstructures of Solid Oxide Fuel Cells and its influence on mass transport. Journal of Power Sources, 2015, 297, 388-399.	4.0	12
59	Modeling constrained sintering of bi-layered tubular structures. Journal of the European Ceramic Society, 2015, 35, 941-950.	2.8	10
60	Numerical evaluation of micro-structural parameters of porous supports in metal-supported solid oxide fuel cells. Journal of Power Sources, 2015, 273, 1006-1015.	4.0	17
61	Finite Element Modeling of Camber Evolution During Sintering of Bilayer Structures. Journal of the American Ceramic Society, 2014, 97, 2965-2972.	1.9	13
62	Stress analysis and fail-safe design of bilayered tubular supported ceramic membranes. Journal of Membrane Science, 2014, 453, 253-262.	4.1	23
63	High throughput measurement of high temperature strength of ceramics in controlled atmosphere and its use on solid oxide fuel cell anode supports. Journal of Power Sources, 2014, 258, 195-203.	4.0	16
64	Strain in the mesoscale kinetic Monte Carlo model for sintering. Computational Materials Science, 2014, 82, 293-297.	1.4	25
65	Mechanical reliability of geometrically imperfect tubular oxygen transport membranes. Journal of Membrane Science, 2014, 470, 80-89.	4.1	18
66	Creep behaviour of porous metal supports for solid oxide fuel cells. International Journal of Hydrogen Energy, 2014, 39, 21569-21580.	3.8	23
67	Development of a Novel Ceramic Support Layer for Planar Solid Oxide Cells. Fuel Cells, 2014, 14, 153-161.	1.5	16
68	Weibull statistics effective area and volume in the ball-on-ring testing method. Mechanics of Materials, 2014, 73, 28-37.	1.7	15
69	Modelling the impact of creep on the probability of failure of a solid oxide fuel cell stack. Journal of the European Ceramic Society, 2014, 34, 2695-2704.	2.8	54
70	Multi-scale modeling of shape distortions during sintering of bi-layers. Computational Materials Science, 2014, 88, 28-36.	1.4	27
71	Strength characterization of tubular ceramic materials by flexure of semi-cylindrical specimens. Journal of the European Ceramic Society, 2014, 34, 1423-1432.	2.8	21
72	Sintering of Multilayered Porous Structures: Part Iâ€Constitutive Models. Journal of the American Ceramic Society, 2013, 96, 2657-2665.	1.9	26

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73	Modeling kinetics of distortion in porous bi-layered structures. Journal of the European Ceramic Society, 2013, 33, 1297-1305.	2.8	27
74	Modeling Sintering of Multilayers Under Influence of Gravity. Journal of the American Ceramic Society, 2013, 96, 80-89.	1.9	26
75	The Effect of Particle Size Distributions on the Microstructural Evolution During Sintering. Journal of the American Ceramic Society, 2013, 96, 103-110.	1.9	71
76	Sintering of Multilayered Porous Structures: Part <scp>II</scp>â€“Experiments and Model Applications. Journal of the American Ceramic Society, 2013, 96, 2666-2673.	1.9	27
77	The small displacement elastic solution to the ball-on-ring testing method. Mechanics of Materials, 2012, 55, 33-40.	1.7	9
78	The sintering behavior of close-packed spheres. Scripta Materialia, 2012, 67, 81-84.	2.6	28
79	Optimization of the strength of SOFC anode supports. Journal of the European Ceramic Society, 2012, 32, 1041-1052.	2.8	54
80	Strength of Anodeâ€Supported Solid Oxide Fuel Cells. Fuel Cells, 2011, 11, 682-689.	1.5	22
81	Evaluation of thin film ceria membranes for syngas membrane reactorsâ€"Preparation, characterization and testing. Journal of Membrane Science, 2011, 378, 51-60.	4.1	48
82	Continuum mechanics simulations of NiO/Niâ€“YSZ composites during reduction and re-oxidation. Journal of Power Sources, 2010, 195, 2677-2690.	4.0	51
83	Fracture properties of nickel-based anodes for solid oxide fuel cells. Journal of the European Ceramic Society, 2010, 30, 3173-3179.	2.8	20
84	Curvature and Strength of Ni-YSZ Solid Oxide Half-Cells After Redox Treatments. Journal of Fuel Cell Science and Technology, 2010, 7, .	0.8	23
85	Development of Planar Metal Supported SOFC with Novel Cermet Anode. ECS Transactions, 2009, 25, 701-710.	0.3	49
86	Durability Study of SOFCs Under Cycling Current Load Conditions. Fuel Cells, 2009, 9, 814-822.	1.5	15
87	Numerical study of corrosion crack opening. Structure and Infrastructure Engineering, 2008, 4, 381-391.	2.0	8
88	A revised multi-Fickian moisture transport model to describe non-Fickian effects in wood. Holzforschung, 2007, 61, 563-572.	0.9	85
89	Implementation of sorption hysteresis in multi-Fickian moisture transport. Holzforschung, 2007, 61, 693-701.	0.9	25
90	A hysteresis model suitable for numerical simulation of moisture content in wood. Holzforschung, 2007, 61, 175-181.	0.9	46