Viggo Tvergaard

List of Publications by Year
in descending order

118 papers	13,278 citations	38660 50 h-index	21474 114 g-index
119 all docs	119 docs citations	119 times ranked	4461 citing authors

#	Article	IF	Citations
1	Influence of voids on shear band instabilities under plane strain conditions. International Journal of Fracture, 1981, 17, 389-407.	1.1	1,900
2	The relation between crack growth resistance and fracture process parameters in elastic-plastic solids. Journal of the Mechanics and Physics of Solids, 1992, 40, 1377-1397.	2.3	1,440
3	On localization in ductile materials containing spherical voids. International Journal of Fracture, 1982, 18, 237-252.	1.1	1,173
4	Material Failure by Void Growth to Coalescence. Advances in Applied Mechanics, 1989, , 83-151.	1.4	756
5	The influence of plasticity on mixed mode interface toughness. Journal of the Mechanics and Physics of Solids, 1993, 41, 1119-1135.	2.3	612
6	Microcracking in Ceramics Induced by Thermal Expansion or Elastic Anisotropy. Journal of the American Ceramic Society, 1988, 71, 157-166.	1.9	576
7	Effect of fibre debonding in a whisker-reinforced metal. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1990, 125, 203-213.	2.6	570
8	Influence of void nucleation on ductile shear fracture at a free surface. Journal of the Mechanics and Physics of Solids, 1982, 30, 399-425.	2.3	369
9	On the toughness of ductile adhesive joints. Journal of the Mechanics and Physics of Solids, 1996, 44, 789-800.	2.3	236
10	Micromechanical models for graded composite materials. Journal of the Mechanics and Physics of Solids, 1997, 45, 1281-1302.	2.3	223
11	Effects of nonlocal damage in porous plastic solids. International Journal of Solids and Structures, 1995, 32, 1063-1077.	1.3	216
12	Ductile fracture by cavity nucleation between larger voids. Journal of the Mechanics and Physics of Solids, 1982, 30, 265-286.	2.3	207
13	Material failure by void coalescence in localized shear bands. International Journal of Solids and Structures, 1982, 18, 659-672.	1.3	184
14	Ductile failure modeling. International Journal of Fracture, 2016, 201, 29-80.	1.1	181
15	Two mechanisms of ductile fracture: void by void growth versus multiple void interaction. International Journal of Solids and Structures, 2002, 39, 3581-3597.	1.3	173
16	Ductile shear failure or plug failure of spot welds modelled by modified Gurson model. Engineering Fracture Mechanics, 2010, 77, 1031-1047.	2.0	171
17	Toughness of an interface along a thin ductile layer joining elastic solids. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1994, 70, 641-656.	0.8	166
18	Effect of yield surface curvature and void nucleation on plastic flow localization. Journal of the Mechanics and Physics of Solids, 1987, 35, 43-60.	2.3	157

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19	Forming limit diagrams for anisotropic metal sheets with different yield criteria. International Journal of Solids and Structures, 2000, 37, 5037-5059.	1.3	144
20	On the creep constrained diffusive cavitation of grain boundary facets. Journal of the Mechanics and Physics of Solids, 1984, 32, 373-393.	2.3	141
21	On the formulations of higher-order strain gradient crystal plasticity models. Journal of the Mechanics and Physics of Solids, 2008, 56, 1591-1608.	2.3	137
22	Effects of texture on shear band formation in plane strain tension/compression and bending. International Journal of Plasticity, 2007, 23, 244-272.	4.1	136
23	Behaviour of voids in a shear field. International Journal of Fracture, 2009, 158, 41-49.	1.1	113
24	Imperfection-sensitivity of a wide integrally stiffened panel under compression. International Journal of Solids and Structures, 1973, 9, 177-192.	1.3	104
25	Effect of kinematic hardening on localized necking in biaxially stretched sheets. International Journal of Mechanical Sciences, 1978, 20, 651-658.	3.6	100
26	Effect of material rate sensitivity on failure modes in the Charpy V-notch test. Journal of the Mechanics and Physics of Solids, 1986, 34, 213-241.	2.3	99
27	Necking in tensile bars with rectangular cross-section. Computer Methods in Applied Mechanics and Engineering, 1993, 103, 273-290.	3.4	99
28	Effect of strain path change on limits to ductility of anisotropic metal sheets. International Journal of Mechanical Sciences, 2000, 42, 867-887.	3.6	97
29	A phenomenological plasticity model with non-normality effects representing observations in crystal plasticity. Journal of the Mechanics and Physics of Solids, 2001, 49, 1239-1263.	2.3	93
30	Shear deformation of voids with contact modelled by internal pressure. International Journal of Mechanical Sciences, 2008, 50, 1459-1465.	3.6	90
31	On fatigue crack growth in ductile materials by crackâ€"tip blunting. Journal of the Mechanics and Physics of Solids, 2004, 52, 2149-2166.	2.3	89
32	Collapse and coalescence of spherical voids subject to intense shearing: studied in full 3D. International Journal of Fracture, 2012, 177, 97-108.	1.1	88
33	Studies of scale dependent crystal viscoplasticity models. Journal of the Mechanics and Physics of Solids, 2006, 54, 1789-1810.	2.3	87
34	Nonlocal plasticity effects on interaction of different size voids. International Journal of Plasticity, 2004, 20, 107-120.	4.1	77
35	A finite deformation theory of higher-order gradient crystal plasticity. Journal of the Mechanics and Physics of Solids, 2008, 56, 2573-2584.	2.3	76
36	Effect of a shear modified Gurson model on damage development in a FSW tensile specimen. International Journal of Solids and Structures, 2009, 46, 587-601.	1.3	76

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37	Plastic buckling of axially compressed circular cylindrical shells. Thin-Walled Structures, 1983, 1, 139-163.	2.7	74
38	Use of abrupt strain path change for determining subsequent yield surface: illustrations of basic idea. Acta Materialia, 1999, 47, 3879-3890.	3.8	72
39	Model studies of fibre breakage and debonding in a metal reinforced by short fibres. Journal of the Mechanics and Physics of Solids, 1993, 41, 1309-1326.	2.3	70
40	Relations between a micro-mechanical model and a damage model for ductile failure in shear. Journal of the Mechanics and Physics of Solids, 2010, 58, 1243-1252.	2.3	68
41	On the transition from a diamond mode to an axisymmetric mode of collapse in cylindrical shells. International Journal of Solids and Structures, 1983, 19, 845-856.	1.3	67
42	Resistance curves for mixed mode interface crack growth between dissimilar elasticâ€“plastic solids. Journal of the Mechanics and Physics of Solids, 2001, 49, 2689-2703.	2.3	66
43	Crack growth predictions by cohesive zone model for ductile fracture. Journal of the Mechanics and Physics of Solids, 2001, 49, 2191-2207.	2.3	65
44	Interaction of very small voids with larger voids. International Journal of Solids and Structures, 1998, 35, 3989-4000.	1.3	61
45	Failure by void coalescence in metallic materials containing primary and secondary voids subject to intense shearing. International Journal of Solids and Structures, 2011, 48, 1255-1267.	1.3	61
46	Effect of stress-state and spacing on voids in a shear-field. International Journal of Solids and Structures, 2012, 49, 3047-3054.	1.3	61
47	Analysis of creep crack growth by grain boundary cavitation. International Journal of Fracture, 1986, 31, 183-209.	1.1	57
48	Cohesive zone representations of failure between elastic or rigid solids and ductile solids. Engineering Fracture Mechanics, 2003, 70, 1859-1868.	2.0	57
49	Nonlocal continuum effects on bifurcation in the plane strain tension-compression test. Journal of the Mechanics and Physics of Solids, 1995, 43, 741-770.	2.3	52
50	Effect of void size difference on growth and cavitation instabilities. Journal of the Mechanics and Physics of Solids, 1996, 44, 1237-1253.	2.3	51
51	Effect of underloads or overloads in fatigue crack growth by crack-tip blunting. Engineering Fracture Mechanics, 2006, 73, 869-879.	2.0	51
52	On localized thermal track buckling. International Journal of Mechanical Sciences, 1981, 23, 577-587.	3.6	47
53	Application of a model of plastic porous materials including void shape effects to the prediction of ductile failure under shear-dominated loadings. Journal of the Mechanics and Physics of Solids, 2016, 94, 148-166.	2.3	47
54	Influence of post-buckling behaviour on optimum design of stiffened panels. International Journal of Solids and Structures, 1973, 9, 1519-1533.	1.3	46

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55	Numerical study of localization in a void-sheet. International Journal of Solids and Structures, 1989, 25, 1143-1156.	1.3	44
56	Fibre debonding and breakage in a whisker-reinforced metal. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1995, 190, 215-222.	2.6	43
57	A viscoplastic strain gradient analysis of materials with voids or inclusions. International Journal of Solids and Structures, 2006, 43, 4906-4916.	1.3	41
58	A creep rupture model accounting for cavitation at sliding grain boundaries. International Journal of Fracture, 1991, 48, 153-178.	1.1	40
59	Growth and coalescence of non-spherical voids in metals deformed at elevated temperature. International Journal of Mechanical Sciences, 2003, 45, 1283-1308.	3.6	38
60	Theoretical investigation of the effect of plasticity on crack growth along a functionally graded region between dissimilar elasticâ€“plastic solids. Engineering Fracture Mechanics, 2002, 69, 1635-1645.	2.0	37
61	Three-Dimensional Effects in Microcrack Nucleation in Brittle Polycrystals. Journal of the American Ceramic Society, 1990, 73, 1548-1554.	1.9	36
62	Effect of plastic spin on localization predictions for a porous ductile material. Journal of the Mechanics and Physics of Solids, 1991, 39, 763-781.	2.3	36
63	Predictions of mixed mode interface crack growth using a cohesive zone model for ductile fracture. Journal of the Mechanics and Physics of Solids, 2004, 52, 925-940.	2.3	36
64	Effect of Contact Conditions on Void Coalescence at Low Stress Triaxiality Shearing. Journal of Applied Mechanics, Transactions ASME, 2012, 79, .	1.1	35
65	Behaviour of porous ductile solids at low stress triaxiality in different modes of deformation. International Journal of Solids and Structures, 2015, 60-61, 28-34.	1.3	34
66	Shear band development predicted by a non-normality theory of plasticity and comparison to crystal plasticity predictions. International Journal of Solids and Structures, 2001, 38, 8945-8960.	1.3	28
67	Nonlocal plasticity effects on the tensile properties of a metal matrix composite. European Journal of Mechanics, A/Solids, 2001, 20, 601-613.	2.1	26
68	Shear band development in anisotropic bent specimens. European Journal of Mechanics, A/Solids, 2004, 23, 811-821.	2.1	26
69	Overload effects in fatigue crack growth by crack-tip blunting. International Journal of Fatigue, 2005, 27, 1389-1397.	2.8	25
70	Study of localization in a void-sheet under stress states near pure shear. International Journal of Solids and Structures, 2015, 75-76, 134-142.	1.3	24
71	Nonlocal plasticity effects on fibre debonding in a whisker-reinforced metal. European Journal of Mechanics, A/Solids, 2002, 21, 239-248.	2.1	23
72	Effects of plastic anisotropy on crack-tip behaviour. International Journal of Fracture, 2002, 117, 297-312.	1.1	23

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73	Effect of T-stress on crack growth under mixed mode Iâ€“III loading. International Journal of Solids and Structures, 2008, 45, 5181-5188.	1.3	23
74	Influence of porosity on cavitation instability predictions for elasticâ€“plastic solids. International Journal of Mechanical Sciences, 2007, 49, 210-216.	3.6	22
75	Effect of pure mode I, II or III loading or mode mixity on crack growth in a homogeneous solid. International Journal of Solids and Structures, 2010, 47, 1611-1617.	1.3	22
76	Effect of thermally induced residual stresses on the failure of a whisker-reinforced metal. Mechanics of Materials, 1991, 11, 149-161.	1.7	21
77	Interface failure by cavity growth to coalescence. International Journal of Mechanical Sciences, 2000, 42, 381-395.	3.6	21
78	Matrix, Reinforcement, and Interfacial Failure. , 1993, , 233-250.		20
79	Prediction of Ductile Fracture Surface Roughness Scaling. Journal of Applied Mechanics, Transactions ASME, 2012, 79, .	1.1	20
80	Size Effects on Cavitation Instabilities. Journal of Applied Mechanics, Transactions ASME, 2006, 73, 246-253.	1.1	19
81	Void growth and coalescence in metals deformed at elevated temperature. International Journal of Fracture, 2000, 106, 259-276.	1.1	18
82	Effect of initial void shape on ductile failure in a shear field. Mechanics of Materials, 2015, 90, 2-9.	1.7	18
83	Debonding of short fibres among particulates in a metal matrix composite. International Journal of Solids and Structures, 2003, 40, 6957-6967.	1.3	16
84	Discrete modelling of ductile crack growth by void growth to coalescence. International Journal of Fracture, 2007, 148, 1-12.	1.1	15
85	Void shape effects and voids starting from cracked inclusion. International Journal of Solids and Structures, 2011, 48, 1101-1108.	1.3	15
86	Size-effects in porous metals. Modelling and Simulation in Materials Science and Engineering, 2007, 15, S51-S60.	0.8	14
87	Comment on â€œInfluence of the Lode parameter and the stress triaxiality on the failure of elasto-plastic porous materialsâ€•by K. Danas and P. Ponte CastaÃ±eda. International Journal of Solids and Structures, 2012, 49, 3484-3485.	1.3	13
88	Statistics of ductile fracture surfaces: the effect of material parameters. International Journal of Fracture, 2013, 184, 137-149.	1.1	13
89	Breakage and debonding of short brittle fibres among particulates in a metal matrix. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 369, 192-200.	2.6	12
90	Bifurcation into a localized mode from non-uniform periodic deformations around a periodic pattern of voids. Journal of the Mechanics and Physics of Solids, 2014, 69, 112-122.	2.3	12

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91	Mechanical modelling of ductile fracture. Meccanica, 1991, 26, 11-16.	1.2	11
92	Influence of plasticity on interface toughness in a layered solid with residual stresses. International Journal of Solids and Structures, 2003, 40, 5769-5779.	1.3	11
93	Mesh sensitivity effects on fatigue crack growth by crack-tip blunting and re-sharpening. International Journal of Solids and Structures, 2007, 44, 1891-1899.	1.3	11
94	Effects of Plastic Anisotropy and Void Shape on Full Three-Dimensional Void Growth. Journal of Applied Mechanics, Transactions ASME, 2018, 85, .	1.1	11
95	On cavitation instabilities with interacting voids. European Journal of Mechanics, A/Solids, 2012, 32, 52-58.	2.1	10
96	On Low Cycle Fatigue in Metal Matrix Composites. International Journal of Damage Mechanics, 2000, 9, 154-173.	2.4	9
97	Effect of plastic anisotropy on crack growth resistance under mode 1 loading. International Journal of Fracture, 2004, 130, 411-425.	1.1	8
98	Effect of anisotropic plasticity on mixed mode interface crack growth. Engineering Fracture Mechanics, 2007, 74, 2603-2614.	2.0	8
99	Effect of void cluster on ductile failure evolution. Meccanica, 2016, 51, 3097-3105.	1.2	8
100	Edge-Cracks in Single Crystals Under Monotonic and Cyclic Loads. International Journal of Fracture, 1999, 99, 81-95.	1.1	7
101	Nucleation from a cluster of inclusions, leading to void coalescense. International Journal of Mechanical Sciences, 2017, 133, 631-638.	3.6	7
102	Effect of Residual Stress on Cavitation Instabilities in Constrained Metal Wires. Journal of Applied Mechanics, Transactions ASME, 2004, 71, 560-566.	1.1	6
103	Three-dimensional analyses of ductile failure in metal reinforced by staggered fibres. Modelling and Simulation in Materials Science and Engineering, 2001, 9, 143-155.	0.8	5
104	3D Analysis of cold rolling using a constitutive model for interface friction. International Journal of Mechanical Sciences, 2004, 46, 653-671.	3.6	5
105	Effect of Properties and Turgor Pressure on the Indentation Response of Plant Cells. Journal of Applied Mechanics, Transactions ASME, 2018, 85, .	1.1	5
106	Crack growth resistance for anisotropic plasticity with non-normality effects. International Journal of Solids and Structures, 2006, 43, 2160-2173.	1.3	4
107	3D study of plastic flow localization at a void-sheet. International Journal of Mechanical Sciences, 2020, 173, 105426.	3.6	4
108	Effect of T-Stress on Crack Growth Along an Interface Between Ductile and Elastic Solids. Journal of Materials Science, 2003, 11, 303-308.	1.2	2

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109	Plastic Flow Localization and Ductile Fracture. Journal of Physics: Conference Series, 2018, 1063, 012005.	0.3	2
110	Analyses of Cavitation Instabilities in Ductile Metals. Key Engineering Materials, 2007, 340-341, 49-57.	0.4	1
111	Interface crack growth for anisotropic plasticity with non-normality effects. International Journal of Solids and Structures, 2007, 44, 7357-7369.	1.3	1
112	Numerical Simulation of Cropping. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	1.1	1
113	Cavitation instabilities between fibres in a metal matrix composite. Acta Mechanica, 2016, 227, 993-1003.	1.1	1
114	Full Three-Dimensional Cavitation Instabilities Using a Non-Quadratic Anisotropic Yield Function. Journal of Applied Mechanics, Transactions ASME, 2020, 87, .	1.1	1
115	Numerical modelling in non linear fracture mechanics. Frattura Ed Integrita Strutturale, 2007, 1, 25-28.	0.5	1
116	Effect of residual stresses on interface crack growth by void expansion mechanism. International Journal of Fracture, 2007, 142, 43-50.	1.1	0
117	Response to comments by J. Toribio and V. Kharin. International Journal of Solids and Structures, 2008, 45, 1149-1150.	1.3	0
118	DEBONDING OR BREAKAGE OF SHORT FIBRES IN A METAL MATRIX COMPOSITE. , 2006, , 67-76.		0