

Stephen B Pope

List of Publications by Year in descending order

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164
papers

22,119
citations

19608

61
h-index

19136

118
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167
all docs

167
docs citations

167
times ranked

8402
citing authors

#	ARTICLE	IF	CITATIONS
1	Simplifying chemical kinetics: Intrinsic low-dimensional manifolds in composition space. <i>Combustion and Flame</i> , 1992, 88, 239-264.	2.8	1,283
2	Ten questions concerning the large-eddy simulation of turbulent flows. <i>New Journal of Physics</i> , 2004, 6, 35-35.	1.2	830
3	A more general effective-viscosity hypothesis. <i>Journal of Fluid Mechanics</i> , 1975, 72, 331.	1.4	714
4	An examination of forcing in direct numerical simulations of turbulence. <i>Computers and Fluids</i> , 1988, 16, 257-278.	1.3	563
5	An explanation of the turbulent round-jet/plane-jet anomaly. <i>AIAA Journal</i> , 1978, 16, 279-281.	1.5	540
6	Direct numerical simulations of the turbulent mixing of a passive scalar. <i>Physics of Fluids</i> , 1988, 31, 506.	1.4	448
7	Lagrangian statistics from direct numerical simulations of isotropic turbulence. <i>Journal of Fluid Mechanics</i> , 1989, 207, 531-586.	1.4	448
8	The evolution of surfaces in turbulence. <i>International Journal of Engineering Science</i> , 1988, 26, 445-469.	2.7	407
9	A mixing model for turbulent reactive flows based on Euclidean minimum spanning trees. <i>Combustion and Flame</i> , 1998, 115, 487-514.	2.8	370
10	Filtered mass density function for large-eddy simulation of turbulent reacting flows. <i>Journal of Fluid Mechanics</i> , 1999, 401, 85-121.	1.4	302
11	An algorithm for tracking fluid particles in numerical simulations of homogeneous turbulence. <i>Journal of Computational Physics</i> , 1988, 79, 373-416.	1.9	290
12	A generalized Langevin model for turbulent flows. <i>Physics of Fluids</i> , 1986, 29, 387.	1.4	282
13	Small scales, many species and the manifold challenges of turbulent combustion. <i>Proceedings of the Combustion Institute</i> , 2013, 34, 1-31.	2.4	267
14	PDF calculations of turbulent nonpremixed flames with local extinction. <i>Combustion and Flame</i> , 2000, 123, 281-307.	2.8	244
15	Material-element deformation in isotropic turbulence. <i>Journal of Fluid Mechanics</i> , 1990, 220, 427-458.	1.4	182
16	The probability approach to the modelling of turbulent reacting flows. <i>Combustion and Flame</i> , 1976, 27, 299-312.	2.8	173
17	A Hybrid Algorithm for the Joint PDF Equation of Turbulent Reactive Flows. <i>Journal of Computational Physics</i> , 2001, 166, 218-252.	1.9	169
18	Turbulent Premixed Flames. <i>Annual Review of Fluid Mechanics</i> , 1987, 19, 237-270.	10.8	156

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19	Turbulent lifted flames in a vitiated coflow investigated using joint PDF calculations. <i>Combustion and Flame</i> , 2005, 142, 438-453.	2.8	154
20	The calculation of near-wake flows. <i>Journal of Fluid Mechanics</i> , 1976, 73, 9-32.	1.4	151
21	A Consistent Hybrid Finite-Volume/Particle Method for the PDF Equations of Turbulent Reactive Flows. <i>Journal of Computational Physics</i> , 1999, 154, 342-371.	1.9	146
22	Universal Intermittent Properties of Particle Trajectories in Highly Turbulent Flows. <i>Physical Review Letters</i> , 2008, 100, 254504.	2.9	145
23	An Improved Turbulent Mixing Model. <i>Combustion Science and Technology</i> , 1982, 28, 131-145.	1.2	143
24	The velocity-dissipation probability density function model for turbulent flows. <i>Physics of Fluids A, Fluid Dynamics</i> , 1990, 2, 1437-1449.	1.6	141
25	An investigation of the accuracy of manifold methods and splitting schemes in the computational implementation of combustion chemistry. <i>Combustion and Flame</i> , 1998, 112, 16-32.	2.8	136
26	The Hybrid Method for the PDF Equations of Turbulent Reactive Flows: Consistency Conditions and Correction Algorithms. <i>Journal of Computational Physics</i> , 2001, 172, 841-878.	1.9	136
27	Straining and scalar dissipation on material surfaces in turbulence: Implications for flamelets. <i>Combustion and Flame</i> , 1990, 79, 340-365.	2.8	128
28	Probability density function calculations of local extinction and no production in piloted-jet turbulent methane/air flames. <i>Proceedings of the Combustion Institute</i> , 2000, 28, 133-139.	2.4	126
29	An improved algorithm for in situ adaptive tabulation. <i>Journal of Computational Physics</i> , 2009, 228, 361-386.	1.9	125
30	Calculations of premixed turbulent flames by PDF methods. <i>Combustion and Flame</i> , 1987, 67, 127-142.	2.8	121
31	The calculation of turbulent recirculating flows in general orthogonal coordinates. <i>Journal of Computational Physics</i> , 1978, 26, 197-217.	1.9	120
32	The influence of chemical mechanisms on PDF calculations of nonpremixed piloted jet flames. <i>Combustion and Flame</i> , 2005, 143, 450-470.	2.8	116
33	A diffusion model for velocity gradients in turbulence. <i>Physics of Fluids A, Fluid Dynamics</i> , 1990, 2, 242-256.	1.6	114
34	Transport budgets in turbulent lifted flames of methane autoigniting in a vitiated co-flow. <i>Combustion and Flame</i> , 2007, 151, 495-511.	2.8	113
35	A numerical study of auto-ignition in turbulent lifted flames issuing into a vitiated co-flow. <i>Combustion Theory and Modelling</i> , 2007, 11, 351-376.	1.0	110
36	A particle formulation for treating differential diffusion in filtered density function methods. <i>Journal of Computational Physics</i> , 2007, 226, 947-993.	1.9	109

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55	Stationary probability density functions: An exact result. <i>Physics of Fluids A, Fluid Dynamics</i> , 1993, 5, 1529-1531.	1.6	67
56	Large-eddy simulation/probability density function modeling of a non-premixed CO/H ₂ temporally evolving jet flame. <i>Proceedings of the Combustion Institute</i> , 2013, 34, 1241-1249.	2.4	67
57	A deterministic forcing scheme for direct numerical simulations of turbulence. <i>Computers and Fluids</i> , 1998, 27, 11-28.	1.3	66
58	Second-order splitting schemes for a class of reactive systems. <i>Journal of Computational Physics</i> , 2008, 227, 8165-8176.	1.9	66
59	Treating chemistry in combustion with detailed mechanisms—In situ adaptive tabulation in principal directions—Premixed combustion. <i>Combustion and Flame</i> , 1998, 112, 85-112.	2.8	65
60	Probability density function/Monte Carlo simulation of near-wall turbulent flows. <i>Journal of Fluid Mechanics</i> , 1998, 357, 141-166.	1.4	64
61	Particle Method for Turbulent Flows: Integration of Stochastic Model Equations. <i>Journal of Computational Physics</i> , 1995, 117, 332-349.	1.9	62
62	Self-conditioned fields for large-eddy simulations of turbulent flows. <i>Journal of Fluid Mechanics</i> , 2010, 652, 139-169.	1.4	61
63	Exploiting ISAT to solve the reaction—diffusion equation. <i>Combustion Theory and Modelling</i> , 2004, 8, 361-383.	1.0	60
64	PDF calculations of piloted turbulent nonpremixed flames of methane. <i>Combustion and Flame</i> , 1990, 81, 13-29.	2.8	59
65	Stochastic Lagrangian models of velocity in homogeneous turbulent shear flow. <i>Physics of Fluids</i> , 2002, 14, 1696-1702.	1.6	59
66	A Lagrangian two-time probability density function equation for inhomogeneous turbulent flows. <i>Physics of Fluids</i> , 1983, 26, 3448.	1.4	56
67	Propagating surfaces in isotropic turbulence. <i>Journal of Fluid Mechanics</i> , 1992, 234, 247.	1.4	55
68	Combined dimension reduction and tabulation strategy using ISAT—RCCE—GALI for the efficient implementation of combustion chemistry. <i>Combustion and Flame</i> , 2011, 158, 2113-2127.	2.8	55
69	PDF Simulations of a Bluff-Body Stabilized Flow. <i>Journal of Computational Physics</i> , 2001, 169, 1-23.	1.9	54
70	Modeling of extinction in turbulent diffusion flames by the velocity-dissipation-composition PDF method. <i>Combustion and Flame</i> , 1995, 100, 211-220.	2.8	53
71	Application of the velocity—dissipation probability density function model to inhomogeneous turbulent flows. <i>Physics of Fluids A, Fluid Dynamics</i> , 1991, 3, 1947-1957.	1.6	52
72	Differential diffusion of passive scalars in isotropic turbulence. <i>Physics of Fluids A, Fluid Dynamics</i> , 1993, 5, 2467-2478.	1.6	52

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73	Comparison of mixing model performance for nonpremixed turbulent reactive flow. <i>Combustion and Flame</i> , 1999, 117, 732-754.	2.8	52
74	Implementation of combustion chemistry by in situ adaptive tabulation of rate-controlled constrained equilibrium manifolds. <i>Proceedings of the Combustion Institute</i> , 2002, 29, 1411-1417.	2.4	52
75	A model for turbulent mixing based on shadow-position conditioning. <i>Physics of Fluids</i> , 2013, 25, .	1.6	51
76	Effects of combined dimension reduction and tabulation on the simulations of a turbulent premixed flame using a large-eddy simulation/probability density function method. <i>Combustion Theory and Modelling</i> , 2014, 18, 388-413.	1.0	51
77	Computational study of lean premixed turbulent flames using RANSPDF and LESPDF methods. <i>Combustion Theory and Modelling</i> , 2013, 17, 610-656.	1.0	50
78	In Situ Detailed Chemistry Calculations in Combustor Flow Analyses. <i>Journal of Engineering for Gas Turbines and Power</i> , 2001, 123, 747-756.	0.5	49
79	Simulation of Sandia Flame D Using Velocity-Scalar Filtered Density Function. <i>AIAA Journal</i> , 2010, 48, 1513-1522.	1.5	49
80	A stochastic Lagrangian model for acceleration in turbulent flows. <i>Physics of Fluids</i> , 2002, 14, 2360.	1.6	48
81	Turbulent mixing model based on ordered pairing. <i>Combustion and Flame</i> , 1991, 83, 27-42.	2.8	47
82	Gibbs function continuation for the stable computation of chemical equilibrium. <i>Combustion and Flame</i> , 2004, 139, 222-226.	2.8	47
83	The use of slow manifolds in reactive flows. <i>Combustion and Flame</i> , 2006, 147, 243-261.	2.8	47
84	Reduced description of reactive flows with tabulation of chemistry. <i>Combustion Theory and Modelling</i> , 2011, 15, 827-848.	1.0	43
85	Numerical implementation of mixing and molecular transport in LES/PDF studies of turbulent reacting flows. <i>Journal of Computational Physics</i> , 2011, 230, 6916-6957.	1.9	42
86	Comparative study of micromixing models in transported scalar PDF simulations of turbulent nonpremixed bluff body flames. <i>Combustion and Flame</i> , 2006, 146, 109-130.	2.8	41
87	A more accurate projection in the rate-controlled constrained-equilibrium method for dimension reduction of combustion chemistry. <i>Combustion Theory and Modelling</i> , 2004, 8, 255-279.	1.0	40
88	Lagrangian investigation of local extinction, re-ignition and auto-ignition in turbulent flames. <i>Combustion Theory and Modelling</i> , 2008, 12, 857-882.	1.0	40
89	Weak second-order splitting schemes for Lagrangian Monte Carlo particle methods for the composition PDF/FDF transport equations. <i>Journal of Computational Physics</i> , 2010, 229, 1852-1878.	1.9	40
90	Empirical low-dimensional manifolds in composition space. <i>Combustion and Flame</i> , 2013, 160, 1967-1980.	2.8	40

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91	Large-scale parallel simulations of turbulent combustion using combined dimension reduction and tabulation of chemistry. <i>Proceedings of the Combustion Institute</i> , 2013, 34, 205-215.	2.4	40
92	PDF Model Calculations of Compressible Turbulent Flows Using Smoothed Particle Hydrodynamics. <i>Journal of Computational Physics</i> , 1997, 134, 150-168.	1.9	39
93	Lagrangian conditional statistics, acceleration and local relative motion in numerically simulated isotropic turbulence. <i>Journal of Fluid Mechanics</i> , 2007, 582, 399-422.	1.4	39
94	A greedy algorithm for species selection in dimension reduction of combustion chemistry. <i>Combustion Theory and Modelling</i> , 2010, 14, 619-652.	1.0	39
95	Nonpremixed turbulent reacting flow near extinction. <i>Combustion and Flame</i> , 1995, 101, 501-528.	2.8	38
96	Computationally efficient implementation of combustion chemistry in parallel PDF calculations. <i>Journal of Computational Physics</i> , 2009, 228, 5490-5525.	1.9	38
97	Large eddy simulation/probability density function simulations of the Cambridge turbulent stratified flame series. <i>Combustion and Flame</i> , 2019, 199, 24-45.	2.8	38
98	Calculations of a Plane Turbulent Jet. <i>AIAA Journal</i> , 1984, 22, 896-904.	1.5	37
99	Modelling effects of subgrid-scale mixture fraction variance in LES of a piloted diffusion flame. <i>Combustion Theory and Modelling</i> , 2012, 16, 611-638.	1.0	37
100	Species reconstruction using pre-image curves. <i>Proceedings of the Combustion Institute</i> , 2005, 30, 1293-1300.	2.4	36
101	Modeling unsteady reacting flow with operator splitting and ISAT. <i>Combustion and Flame</i> , 2006, 147, 150-162.	2.8	36
102	Molecular diffusion effects in LES of a piloted methane-air flame. <i>Combustion and Flame</i> , 2011, 158, 240-254.	2.8	36
103	Efficient Implementation of Chemistry in Computational Combustion. <i>Flow, Turbulence and Combustion</i> , 2009, 82, 437-453.	1.4	35
104	Monte Carlo Calculations of Turbulent Diffusion Flames. <i>Combustion Science and Technology</i> , 1984, 42, 13-45.	1.2	34
105	PDF simulations of turbulent combustion incorporating detailed chemistry. <i>Combustion and Flame</i> , 1999, 117, 340-350.	2.8	34
106	Experimental study of velocity filtered joint density function for large eddy simulation. <i>Physics of Fluids</i> , 2004, 16, 3599-3613.	1.6	34
107	PDF calculations of piloted premixed jet flames. <i>Combustion Theory and Modelling</i> , 2011, 15, 245-266.	1.0	34
108	Application of the ICE-PIC method for the dimension reduction of chemical kinetics coupled with transport. <i>Proceedings of the Combustion Institute</i> , 2007, 31, 473-481.	2.4	33

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109	PDF calculations of major and minor species in a turbulent piloted jet flame. Proceedings of the Combustion Institute, 1998, 27, 1081-1086.	0.3	32
110	Simulations of a turbulent non-premixed flame using combined dimension reduction and tabulation for combustion chemistry. Fuel, 2013, 105, 636-644.	3.4	32
111	A pre-partitioned adaptive chemistry methodology for the efficient implementation of combustion chemistry in particle PDF methods. Combustion and Flame, 2015, 162, 3236-3253.	2.8	32
112	Monte Carlo solutions of a joint PDF equation for turbulent flows in general orthogonal coordinates. Journal of Computational Physics, 1987, 72, 311-346.	1.9	31
113	An investigation of turbulent premixed counterflow flames using large-eddy simulations and probability density function methods. Combustion and Flame, 2016, 166, 229-242.	2.8	31
114	Specific volume coupling and convergence properties in hybrid particle/finite volume algorithms for turbulent reactive flows. Journal of Computational Physics, 2015, 294, 110-126.	1.9	30
115	Assessment of a partial-equilibrium/monte carlo model for turbulent syngas flames. Combustion and Flame, 1988, 72, 159-173.	2.8	29
116	A conditionally cubic-Gaussian stochastic Lagrangian model for acceleration in isotropic turbulence. Journal of Fluid Mechanics, 2007, 582, 423-448.	1.4	29
117	Wall-function treatment in pdf methods for turbulent flows. Physics of Fluids, 1997, 9, 2692-2703.	1.6	28
118	Numerical integration of stochastic differential equations: weak second-order mid-point scheme for application in the composition PDF method. Journal of Computational Physics, 2003, 185, 194-212.	1.9	28
119	The parabolic edge reconstruction method (PERM) for Lagrangian particle advection. Journal of Computational Physics, 2008, 227, 5447-5491.	1.9	28
120	Turbulent dispersion from line sources in grid turbulence. Physics of Fluids, 2008, 20, .	1.6	28
121	Large eddy simulation/probability density function simulations of bluff body stabilized flames. Combustion and Flame, 2014, 161, 3100-3133.	2.8	28
122	The performance of in situ adaptive tabulation in computations of turbulent flames. Combustion Theory and Modelling, 2005, 9, 549-568.	1.0	27
123	Computationally-efficient and scalable parallel implementation of chemistry in simulations of turbulent combustion. Combustion and Flame, 2012, 159, 3096-3109.	2.8	27
124	A study of the rate-controlled constrained-equilibrium dimension reduction method and its different implementations. Combustion Theory and Modelling, 2013, 17, 260-293.	1.0	27
125	PDF calculations of turbulent nonpremixed flames of using reduced chemical mechanisms. Combustion and Flame, 1993, 95, 133-150.	2.8	25
126	Transport-chemistry coupling in the reduced description of reactive flows. Combustion Theory and Modelling, 2007, 11, 715-739.	1.0	25

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127	Effects of molecular transport in LES/PDF of piloted turbulent dimethyl ether/air jet flames. <i>Combustion and Flame</i> , 2017, 176, 451-461.	2.8	25
128	Time-averaging strategies in the finite-volume/particle hybrid algorithm for the joint PDF equation of turbulent reactive flows. <i>Combustion Theory and Modelling</i> , 2008, 12, 529-544.	1.0	24
129	LES/PDF for premixed combustion in the DNS limit. <i>Combustion Theory and Modelling</i> , 2016, 20, 834-865.	1.0	24
130	Accessed Compositions in Turbulent Reactive Flows. <i>Flow, Turbulence and Combustion</i> , 2004, 72, 219-243.	1.4	23
131	Entropy production and element conservation in the quasi-steady-state approximation. <i>Combustion and Flame</i> , 2004, 137, 251-254.	2.8	23
132	An investigation of mixing in a three-stream turbulent jet. <i>Physics of Fluids</i> , 2013, 25, 105105.	1.6	23
133	The relationship between the probability approach and particle models for reaction in homogeneous turbulence. <i>Combustion and Flame</i> , 1979, 35, 41-45.	2.8	22
134	A second-order Monte Carlo method for the solution of the Ito stochastic differential equation. <i>Stochastic Analysis and Applications</i> , 1986, 4, 151-186.	0.9	21
135	Sensitivity calculations in PDF modelling of turbulent flames. <i>Proceedings of the Combustion Institute</i> , 2009, 32, 1629-1637.	2.4	21
136	A novel transient turbulent jet flame for studying turbulent combustion. <i>Proceedings of the Combustion Institute</i> , 2013, 34, 1251-1259.	2.4	21
137	Direct numerical simulation of a statistically stationary, turbulent reacting flow. <i>Combustion Theory and Modelling</i> , 1999, 3, 371-408.	1.0	20
138	The geometry of reaction trajectories and attracting manifolds in composition space. <i>Combustion Theory and Modelling</i> , 2006, 10, 361-388.	1.0	19
139	Probability Calculations for Turbulent Jet Flows with Mixing and Reaction of NO and O ₃ . <i>Combustion Science and Technology</i> , 1984, 37, 59-78.	1.2	17
140	Reduced Description of Complex Dynamics in Reactive Systems. <i>Journal of Physical Chemistry A</i> , 2007, 111, 8464-8474.	1.1	16
141	Implicit and explicit schemes for mass consistency preservation in hybrid particle/finite-volume algorithms for turbulent reactive flows. <i>Journal of Computational Physics</i> , 2014, 257, 352-373.	1.9	16
142	Coagulation-induced particle-concentration fluctuations in homogeneous, isotropic turbulence. <i>Physics of Fluids</i> , 2002, 14, 2447.	1.6	15
143	A Perspective on Turbulence Modeling. <i>ICASE/LaRC Interdisciplinary Series in Science and Engineering</i> , 1999, , 53-67.	0.1	15
144	A LES/PDF simulator on block-structured meshes. <i>Combustion Theory and Modelling</i> , 2019, 23, 1-41.	1.0	14

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145	Turbulent piloted partially-premixed flames with varying levels of O_2/N_2 : stability limits and PDF calculations. <i>Combustion Theory and Modelling</i> , 2011, 15, 773-793.	1.0	12
146	Turbulence Resolution Scale Dependence in Large-Eddy Simulations of a Jet Flame. <i>Flow, Turbulence and Combustion</i> , 2012, 88, 529-561.	1.4	12
147	Comment on the article "An effective particle tracing scheme on structured/unstructured grids in hybrid finite volume/PDF Monte Carlo methods" by Li and Modest. <i>Journal of Computational Physics</i> , 2003, 186, 356-358.	1.9	11
148	An a priori DNS study of the shadow-position mixing model. <i>Combustion and Flame</i> , 2016, 165, 223-245.	2.8	11
149	Filtered Density Function Simulations of a Near-Limit Turbulent Lean Premixed Flame. <i>Journal of Propulsion and Power</i> , 2020, 36, 381-399.	1.3	11
150	Sensitivity calculations in PDF particle methods. <i>Combustion and Flame</i> , 2008, 153, 202-215.	2.8	9
151	The implications of the probability equations for turbulent combustion models. <i>Combustion and Flame</i> , 1977, 29, 235-246.	2.8	8
152	High-Speed Function Approximation. , 2007, , .		8
153	Characterization of extinction/reignition events in turbulent premixed counterflow flames using strain-rate analysis. <i>Proceedings of the Combustion Institute</i> , 2017, 36, 1919-1927.	2.4	8
154	EPVS-FMDF for LES of High-Speed Turbulent Flows. , 2012, , .		7
155	A combined PPAC-RCCE-ISAT methodology for efficient implementation of combustion chemistry. <i>Combustion Theory and Modelling</i> , 2019, 23, 1021-1053.	1.0	7
156	An accurate time advancement algorithm for particle tracking. <i>Journal of Computational Physics</i> , 2008, 227, 8792-8806.	1.9	6
157	The determination of turbulence-model statistics from the velocity-acceleration correlation. <i>Journal of Fluid Mechanics</i> , 2014, 757, .	1.4	5
158	A Simple Approach for Specifying Velocity Inflow Boundary Conditions in Simulations of Turbulent Opposed-Jet Flows. <i>Flow, Turbulence and Combustion</i> , 2017, 98, 131-153.	1.4	5
159	Author's reply to C. Dopazo's comments on "The probability approach to the modelling of turbulent reacting flows". <i>Combustion and Flame</i> , 1979, 34, 103-105.	2.8	4
160	Title is missing!. <i>Combustion and Flame</i> , 2005, 143, 339-341.	2.8	1
161	Computational Models for Turbulent Reacting Flows. By R. O. FOX. Cambridge University Press, 2003. 438 pp. ISBN 0521 650496, 80 or \$120 (hardback); ISBN 0521 6590780, 39.95 or \$55 (paperback). <i>Journal of Fluid Mechanics</i> , 2004, 504, 407-409.	1.4	0
162	The Direct Richardson Order (DRp) Schemes: A New Class of Time Integration Schemes for Stochastic Differential Equations. <i>SIAM Journal of Scientific Computing</i> , 2012, 34, A137-A160.	1.3	0

#	ARTICLE	IF	CITATIONS
163	Ten Chapters in Turbulence. AIAA Journal, 2014, 52, 666-667.	1.5	0
164	Professor Robert William Bilger (1935â€“2015). Combustion and Flame, 2017, 179, A1-A2.	2.8	0