Andrei N Lipatnikov

List of Publications by Year
in descending order

145 papers	3,253 citations	236925 25 h-index	197818 49 g-index
146 all docs	146 docs citations	146 times ranked	858 citing authors

#	Article	IF	Citations
1	Turbulent flame speed and thickness: phenomenology, evaluation, and application in multi-dimensional simulations. Progress in Energy and Combustion Science, 2002, 28, 1-74.	31.2	473
2	Molecular transport effects on turbulent flame propagation and structure. Progress in Energy and Combustion Science, 2005, 31, 1-73.	31.2	294
3	Effects of premixed flames on turbulence and turbulent scalar transport. Progress in Energy and Combustion Science, 2010, 36, 1-102.	31.2	177
4	Stratified turbulent flames: Recent advances in understanding the influence of mixture inhomogeneities on premixed combustion and modeling challenges. Progress in Energy and Combustion Science, 2017, 62, 87-132.	31.2	88
5	Recent Advances in Understanding of Thermal Expansion Effects in Premixed Turbulent Flames. Annual Review of Fluid Mechanics, 2017, 49, 91-117.	25.0	74
6	Finding the markstein number using the measurements of expanding spherical laminar flames. Combustion and Flame, 1997, 109, 436-448.	5.2	73
7	A test of an engineering model of premixed turbulent combustion. Proceedings of the Combustion Institute, 1996, 26, 249-257.	0.3	71
8	Fundamentals of Premixed Turbulent Combustion. , 0, , .		70
9	A direct numerical simulation study of vorticity transformation in weakly turbulent premixed flames. Physics of Fluids, 2014, 26, .	4.0	63
10	Unburned mixture fingers in premixed turbulent flames. Proceedings of the Combustion Institute, 2015, 35, 1401-1408.	3.9	58
11	Effects of Lewis number on vorticity and enstrophy transport in turbulent premixed flames. Physics of Fluids, 2016, 28, .	4.0	54
12	Correlations of high-pressure lean methane and syngas turbulent burning velocities: Effects of turbulent Reynolds, DamkÃ¶hler, and Karlovitz numbers. Proceedings of the Combustion Institute, 2015, 35, 1509-1516.	3.9	48
13	Transient and Geometrical Effects in Expanding Turbulent Flames. Combustion Science and Technology, 2000, 154, 75-117.	2.3	37
14	Lewis Number Effects in Premixed Turbulent Combustion and Highly Perturbed Laminar Flames. Combustion Science and Technology, 1998, 137, 277-298.	2.3	36
15	Global stretch effects in premixed turbulent combustion. Proceedings of the Combustion Institute, 2007, 31, 1361-1368.	3.9	35
16	Conditionally averaged balance equations for modeling premixed turbulent combustion in flamelet regime. Combustion and Flame, 2008, 152, 529-547.	5.2	35
17	DNS study of dependence of bulk consumption velocity in a constant-density reacting flow on turbulence and mixture characteristics. Physics of Fluids, 2017, 29, .	4.0	35
18	Experimental assessment of various methods of determination of laminar flame speed in experiments with expanding spherical flames with positive Markstein lengths. Combustion and Flame, 2015, 162, 2840-2854.	5.2	33

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19	A direct numerical simulation study of interface propagation in homogeneous turbulence. Journal of Fluid Mechanics, 2015, 772, 127-164.	3.4	33
20	Direct numerical simulation study of statistically stationary propagation of a reaction wave in homogeneous turbulence. Physical Review E, 2017, 95, 063101.	2.1	33
21	Turbulent burning velocity and speed of developing, curved, and strained flames. Proceedings of the Combustion Institute, 2002, 29, 2113-2121.	3.9	32
22	A Simple Model of Unsteady Turbulent Flame Propagation. , 1997, , .		31
23	A balance equation for the mean rate of product creation in premixed turbulent flames. Proceedings of the Combustion Institute, 2017, 36, 1893-1901.	3.9	30
24	Thin reaction zones in constant-density turbulent flows at low DamkÃ¶hler numbers: Theory and simulations. Physics of Fluids, 2019, 31, 055104.	4.0	30
25	Transition from pulled to pushed fronts in premixed turbulent combustion: Theoretical and numerical study. Combustion and Flame, 2015, 162, 2893-2903.	5.2	28
26	Self-similarly developing, premixed, turbulent flames: A theoretical study. Physics of Fluids, 2005, 17, 065105.	4.0	26
27	Transition from pulled to pushed premixed turbulent flames dueÂtoÂcountergradient transport. Combustion Theory and Modelling, 2013, 17, 1154-1175.	1.9	26
28	APPLICATION OF THE MARKSTEIN NUMBER CONCEPT TO CURVED TURBULENT FLAMES. Combustion Science and Technology, 2004, 176, 331-358.	2.3	25
29	Effects of Lewis number on conditional fluid velocity statistics in low DamkÃ¶hler number turbulent premixed combustion: A direct numerical simulation analysis. Physics of Fluids, 2013, 25, 045101.	4.0	25
30	Modeling of stratified combustion in a direct-ignition, spark-ignition engine accounting for complex chemistry. Proceedings of the Combustion Institute, 2002, 29, 703-709.	3.9	24
31	A theoretical study of premixed turbulent flame development. Proceedings of the Combustion Institute, 2005, 30, 843-850.	3.9	24
32	A direct numerical simulation study of the influence of flame-generated vorticity on reaction-zone-surface area in weakly turbulent premixed combustion. Physics of Fluids, 2019, 31, .	4.0	24
33	Some Issues of Using Markstein Number for Modeling Premixed Turbulent Combustion. Combustion Science and Technology, 1996, 119, 131-154.	2.3	23
34	DNS Assessment of a Simple Model for Evaluating Velocity Conditioned to Unburned Gas in Premixed Turbulent Flames. Flow, Turbulence and Combustion, 2015, 94, 513-526.	2.6	23
35	Statistical behaviour of vorticity and enstrophy transport in head-on quenching of turbulent premixed flames. European Journal of Mechanics, B/Fluids, 2017, 65, 384-397.	2.5	23
36	Letter: Does flame-generated vorticity increase turbulent burning velocity?. Physics of Fluids, 2018, 30, .	4.0	23

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37	Influence of molecular transport on burning rate and conditioned species concentrations in highly turbulent premixed flames. Journal of Fluid Mechanics, 2021, 928, .	3.4	23
38	Developing Premixed Turbulent Flames: Part I. A Self-Similar Regime of Flame Propagation. Combustion Science and Technology, 2001, 162, 85-112.	2.3	22
39	DNS assessment of relation between mean reaction and scalar dissipation rates in the flamelet regime of premixed turbulent combustion. Combustion Theory and Modelling, 2015, 19, 309-328.	1.9	22
40	A transport equation for reaction rate in turbulent flows. Physics of Fluids, 2016, 28, 081701.	4.0	22
41	A DNS study of the physical mechanisms associated with density ratio influence on turbulent burning velocity in premixed flames. Combustion Theory and Modelling, 2018, 22, 131-155.	1.9	22
42	A priori DNS study of applicability of flamelet concept to predicting mean concentrations of species in turbulent premixed flames at various Karlovitz numbers. Combustion and Flame, 2020, 222, 370-382.	5.2	22
43	Effects of turbulent flame development on thermoacoustic oscillations. Combustion and Flame, 2005, 142, 130-139.	5.2	20
44	Turbulent diffusion of chemically reacting flows: Theory and numerical simulations. Physical Review E, 2017, 96, 053111.	2.1	20
45	Chemical Model of Gasoline-Ethanol Blends for Internal Combustion Engine Applications. , 0, , .		19
46	Three-dimensional direct numerical simulation study of conditioned moments associated with front propagation in turbulent flows. Physics of Fluids, 2014, 26, .	4.0	19
47	Does Density Ratio Significantly Affect Turbulent Flame Speed?. Flow, Turbulence and Combustion, 2017, 98, 1153-1172.	2.6	19
48	Flamelet perturbations and flame surface density transport in weakly turbulent premixed combustion. Combustion Theory and Modelling, 2017, 21, 205-227.	1.9	19
49	Statistical behaviors of conditioned two-point second-order structure functions in turbulent premixed flames in different combustion regimes. Physics of Fluids, 2019, 31, .	4.0	19
50	A Simple Model for Evaluating Conditioned Velocities in Premixed Turbulent Flames. Combustion Science and Technology, 2011, 183, 588-613.	2.3	18
51	LC/MS at the whole protein level: Studies of biomolecular structure and interactions using native LC/MS and cross-path reactive chromatography (XP-RC) MS. Methods, 2018, 144, 14-26.	3.8	18
52	Transport equations for reaction rate in laminar and turbulent premixed flames characterized by non-unity Lewis number. International Journal of Hydrogen Energy, 2018, 43, 21060-21069.	7.1	18
53	Combustion-induced local shear layers within premixed flamelets in weakly turbulent flows. Physics of Fluids, 2018, 30, 085101.	4.0	18
54	Investigation of the influence of combustion-induced thermal expansion on two-point turbulence statistics using conditioned structure functions. Journal of Fluid Mechanics, 2019, 867, 45-76.	3.4	18

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55	Prediction of mean radical concentrations in lean hydrogen-air turbulent flames at different Karlovitz numbers adopting a newly extended flamelet-based presumed PDF. Combustion and Flame, 2021, 226, 248-259.	5.2	18
56	Dependence of heat release on the progress variable in premixed turbulent combustion. Proceedings of the Combustion Institute, 2000, 28, 227-234.	3.9	17
57	Evolution of averaged local premixed flame thickness in a turbulent flow. Combustion and Flame, 2019, 207, 232-249.	5.2	17
58	Lewis number and preferential diffusion effects in lean hydrogenâ€"air highly turbulent flames. Physics of Fluids, 2022, 34, .	4.0	17
59	Are premixed turbulent stagnation flames equivalent to fully developed ones? A computational study. Combustion Science and Technology, 2002, 174, 3-26.	2.3	16
60	A DNS Study of Closure Relations for Convection Flux Term in Transport Equation for Mean Reaction Rate in Turbulent Flow. Flow, Turbulence and Combustion, 2018, 100, 75-92.	2.6	16
61	Dissipation and dilatation rates in premixed turbulent flames. Physics of Fluids, 2021, 33, 035112.	4.0	16
62	Assessment of a flamelet approach to evaluating mean species mass fractions in moderately and highly turbulent premixed flames. Physics of Fluids, 2021, 33, .	4.0	16
63	Conditional velocity statistics for high and low DamkÃ¶hler number turbulent premixed combustion in the context of Reynolds Averaged Navier Stokes simulations. Proceedings of the Combustion Institute, 2013, 34, 1333-1345.	3.9	15
64	Thin reaction zones in highly turbulent medium. International Journal of Heat and Mass Transfer, 2019, 128, 1201-1205.	4.8	15
65	Application of conditioned structure functions to exploring influence of premixed combustion on two-point turbulence statistics. Proceedings of the Combustion Institute, 2019, 37, 2433-2441.	3.9	15
66	Can we characterize turbulence in premixed flames?. Combustion and Flame, 2009, 156, 1242-1247.	5.2	14
67	Testing Premixed Turbulent Combustion Models by Studying Flame Dynamics. International Journal of Spray and Combustion Dynamics, 2009, 1, 39-66.	1.0	14
68	Conditioned moments in premixed turbulent reacting flows. Proceedings of the Combustion Institute, 2011, 33, 1489-1496.	3.9	14
69	Does sensitivity of measured scaling exponents for turbulent burning velocity to flame configuration prove lack of generality of notion of turbulent burning velocity?. Combustion and Flame, 2016, 173, 77-88.	5.2	14
70	A test of conditioned balance equation approach. Proceedings of the Combustion Institute, 2011, 33, 1497-1504.	3.9	13
71	Speed selection for traveling-wave solutions to the diffusion-reaction equation with cubic reaction term and Burgers nonlinear convection. Physical Review E, 2014, 90, 033004.	2.1	13
72	An extended flamelet-based presumed probability density function for predicting mean concentrations of various species in premixed turbulent flames. International Journal of Hydrogen Energy, 2020, 45, 31162-31178.	7.1	13

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73	Transient Behavior of Turbulent Scalar Transport in Premixed Flames. Flow, Turbulence and Combustion, 2011, 86, 609-637.	2.6	12
74	Evaluation of mean species mass fractions in premixed turbulent flames: A DNS study. Proceedings of the Combustion Institute, 2021, 38, 6413-6420.	3.9	12
75	A study of the effects of pressure-driven transport on developing turbulent flame structure and propagation. Combustion Theory and Modelling, 2004, 8, 211-225.	1.9	11
76	Comment on â€œTurbulent burning velocity, burned gas distribution, and associated flame surface definitionâ€. Combustion and Flame, 2004, 137, 261-263.	5.2	11
77	Effects of flame development on stationary premixed turbulent combustion. Proceedings of the Combustion Institute, 2007, 31, 3115-3122.	3.9	11
78	Modelling of Gasoline and Ethanol Hollow-Cone Sprays Using OpenFOAM. , 2011, , .		11
79	RANS Simulations of Statistically Stationary Premixed Turbulent Combustion Using Flame Speed Closure Model. Flow, Turbulence and Combustion, 2015, 94, 381-414.	2.6	11
80	Application of Flame Speed Closure Model to RANS Simulations of Stratified Turbulent Combustion in a Gasoline Direct-Injection Spark-Ignition Engine. Combustion Science and Technology, 2016, 188, 98-131.	2.3	11
81	Validation of leading point concept in RANS simulations of highly turbulent lean syngas-air flames with well-pronounced diffusional-thermal effects. International Journal of Hydrogen Energy, 2021, 46, 9222-9233.	7.1	11
82	Developing Premixed Turbulent Flames: Part II. Pressure-Driven Transport and Turbulent Diffusion. Combustion Science and Technology, 2001, 165, 175-195.	2.3	10
83	Assessment of a transport equation for mean reaction rate using DNS data obtained from highly unsteady premixed turbulent flames. International Journal of Heat and Mass Transfer, 2019, 134, 398-404.	4.8	10
84	A DNS assessment of linear relations between filtered reaction rate, flame surface density, and scalar dissipation rate in a weakly turbulent premixed flame. Combustion Theory and Modelling, 2019, 23, 245-260.	1.9	10
85	Evolution equations for the decomposed components of displacement speed in a reactive scalar field. Journal of Fluid Mechanics, 2021, 911, .	3.4	10
86	A vented corn starch dust explosion in an 11.5Âm3 vessel: Experimental and numerical study. Journal of Loss Prevention in the Process Industries, 2022, 75, 104707.	3.3	10
87	Rigorous Derivation of an Unclosed Mean G-Equation for Statistically 1D Premixed Turbulent Flames. International Journal of Spray and Combustion Dynamics, 2010, 2, 301-323.	1.0	9
88	Turbulent Flame Speed Closure Model: Further Development and Implementation for 3-D Simulation of Combustion in SI Engine. , 0, , .		8
89	Simulations of Fuel/Air Mixing, Combustion, and Pollutant Formation in a Direct Injection Gasoline Engine. , 2002, , .		8
90	SCALAR TRANSPORT IN SELF-SIMILAR, DEVELOPING, PREMIXED, TURBULENT FLAMES. Combustion Science and Technology, 2007, 179, 91-115.	2.3	8

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91	Towards an Extension of TFC Model of Premixed Turbulent Combustion. Flow, Turbulence and Combustion, 2013, 90, 387-400.	2.6	8
92	Surface-averaged quantities in turbulent reacting flows and relevant evolution equations. Physical Review E, 2019, 100, 013107.	2.1	8
93	Closure Relations for Fluxes of Flame Surface Density and Scalar Dissipation Rate in Turbulent Premixed Flames. Fluids, 2019, 4, 43.	1.7	8
94	A DNS Study of Sensitivity of Scaling Exponents for Premixed Turbulent Consumption Velocity to Transient Effects. Flow, Turbulence and Combustion, 2019, 102, 679-698.	2.6	8
95	A DNS study of extreme and leading points in lean hydrogen-air turbulent flames - part II: Local velocity field and flame topology. Combustion and Flame, 2022, 235, 111712.	5.2	8
96	Transition from Countergradient to Gradient Scalar Transport in Developing Premixed TurbulentÂFlames. Flow, Turbulence and Combustion, 2013, 90, 401-418.	2.6	7
97	Analytical and numerical study of travelling waves using the Maxwell-Cattaneo relaxation model extended to reaction-advection-diffusion systems. Physical Review E, 2016, 94, 042218.	2.1	7
98	Statistics conditioned to isoscalar surfaces in highly turbulent premixed reacting systems. Computers and Fluids, 2019, 187, 69-82.	2.5	7
99	DNS Study of the Bending Effect Due to Smoothing Mechanism. Fluids, 2019, 4, 31.	1.7	7
100	Bifractal nature of turbulent reaction waves at high DamkÃ¶hler and Karlovitz numbers. Physics of Fluids, 2020, 32, .	4.0	7
101	Application of Helmholtz-Hodge decomposition and conditioned structure functions to exploring influence of premixed combustion on turbulence upstream of the flame. Proceedings of the Combustion Institute, 2021, 38, 3077-3085.	3.9	7
102	Scaling of reaction progress variable variance in highly turbulent reaction waves. Physics of Fluids, 2021, 33, .	4.0	7
103	A numerical support of leading point concept. International Journal of Hydrogen Energy, 2022, 47, 23444-23461.	7.1	7
104	A Numerical Study on Stratified Turbulent Combustion in a Direct-Injection Spark-Ignition Gasoline Engine Using an Open-Source Code. , 2014, , .		6
105	Unsteady 3-D RANS simulations of dust explosion in a fan stirred explosion vessel using an open source code. Journal of Loss Prevention in the Process Industries, 2020, 67, 104237.	3.3	6
106	Influence of Thermal Expansion on Potential and Rotational Components of Turbulent Velocity Field Within and Upstream of Premixed Flame Brush. Flow, Turbulence and Combustion, 2021, 106, 1111-1124.	2.6	6
107	Solenoidal and potential velocity fields in weakly turbulent premixed flames. Proceedings of the Combustion Institute, 2021, 38, 3087-3095.	3.9	6
108	A DNS study of extreme and leading points in lean hydrogen-air turbulent flames â€“ Part I: Local thermochemical structure and reaction rates. Combustion and Flame, 2022, 235, 111716.	5.2	6

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109	Flame folding and conditioned concentration profiles in moderately intense turbulence. Physics of Fluids, 2022, 34, .	4.0	6
110	Influence of equivalence ratio on turbulent burning velocity and extreme fuel consumption rate in lean hydrogen-air turbulent flames. Fuel, 2022, 327, 124969.	6.4	6
111	Comments on: â€œPremixed flames in stagnating turbulence part Vâ€"evaluation of models for the chemical source termâ€•by K. N. C. Bray, M. Champion, and P. A. Libby. Combustion and Flame, 2002, 131, 219-221.	5.2	5
112	Some Basic Issues of the Averaged G-Equation Approach to Premixed Turbulent Combustion Modeling. The Open Thermodynamics Journal, 2008, 2, 53-58.	0.6	5
113	Conditioned structure functions in turbulent hydrogen/air flames. Physics of Fluids, 0, , .	4.0	5
114	Modeling of Pressure and Non-Stationary Effects in Spark Ignition Engine Combustion: A Comparison of Different Approaches. , 2000, , .		4
115	Statistics of Conditional Fluid Velocity in the Corrugated Flamelets Regime of Turbulent Premixed Combustion: A Direct Numerical Simulation Study. Journal of Combustion, 2011, 2011, 1-13.	1.0	4
116	Comparison of Presumed PDF Models of Turbulent Flames. Journal of Combustion, 2012, 2012, 1-15.	1.0	4
117	Modeling of the Influence of Mixture Fraction Fluctuations on Burning Rate in Partially Premixed Turbulent Flames. Combustion Science and Technology, 2015, 187, 594-626.	2.3	4
118	A New Mathematical Framework for Describing Thin-Reaction-Zone Regime of Turbulent Reacting Flows at Low DamkÃ¶hler Number. Fluids, 2020, 5, 109.	1.7	4
119	Flame Speed Closure Model of Premixed Turbulent Combustion : Further Development and Validation(S.I. Engines, Flame Propagation). The Proceedings of the International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines, 2004, 2004.6, 583-590.	0.1	4
120	NUMERICAL TESTS OF A MEASUREMENT METHOD FOR TURBULENT BURNING VELOCITY IN STAGNATION FLAMES. Combustion Science and Technology, 2006, 178, 1117-1141.	2.3	3
121	EFFECTS OF TURBULENT FLAME SPEED DEVELOPMENT AND AXIAL CONVECTIVE WAVES ON OSCILLATIONS OF A LONG DUCTED FLAME. Combustion Science and Technology, 2007, 179, 1433-1449.	2.3	3
122	Assessment of an Evolution Equation for the Displacement Speed of a Constant-Density Reactive Scalar Field. Flow, Turbulence and Combustion, 2021, 106, 1091-1110.	2.6	3
123	Randomness of Flame Kernel Development in Turbulent Gas Mixture. , 1998, , .		2
124	A Numerical Study of Weakly Turbulent Premixed Combustion with Flame Speed Closure Model. , 2003, , .		2
125	Simulations of Scalar Transport in Developing Turbulent Flames Solving a Conditioned Balance Equation. Combustion Science and Technology, 2010, 182, 405-421.	2.3	2
126	Burning Rate in Impinging Jet Flames. Journal of Combustion, 2011, 2011, 1-11.	1.0	2

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127	A Study of Two Basic Issues Relevant to RANS Simulations of Stratified Turbulent Combustion in a Spray-Guided Direct-Injection Spark-Ignition Engine. , 2014, , .		2
128	Large Eddy Simulation of Stratified Combustion in Spray-guided Direct Injection Spark-ignition Engine. , 0, , .		2
129	RANS Simulations of Premixed Turbulent Flames. Energy, Environment, and Sustainability, 2018, , 181-240.	1.0	1
130	Numerical Simulations of Turbulent Combustion. Fluids, 2020, 5, 22.	1.7	1
131	Passive Front Propagation in Intense Turbulence: Early Transient and Late Statistically Stationary Stages of the Front Area Evolution. Energies, 2021, 14, 5102.	3.1	1
132	Taking account of heat losses in modeling the turbulent combustion of a preliminarily mixed mixture. Combustion, Explosion and Shock Waves, 1988, 24, 290-293.	0.8	0
133	Nitrogen oxide formation in a flame at slight deviations from equilibrium. Combustion, Explosion and Shock Waves, 1989, 24, 407-409.	0.8	0
134	Numerical modeling of nitrogen oxide formation in turbulent combustion of a premixed gas mixture. Combustion, Explosion and Shock Waves, 1993, 29, 326-330.	0.8	0
135	A Method for Evaluating Fully Developed Turbulent Flame Speed. , 2001, , .		0
136	TRANSIENT AND CURVATURE EFFECTS WHEN DEFINING BURNING VELOCITY AND SPEED OF PREMIXED TURBULENT FLAMES. , 2002, , 853-862.		0
137	Modeling of Turbulent Scalar Transport in Expanding Spherical Flames. , 2005, , .		0
138	Numerical Modeling of Stationary But Developing Premixed Turbulent Flames. , 2006, , 691.		0
139	Premixed Turbulent Flames. Journal of Combustion, 2011, 2011, 1-2.	1.0	0
140	Reply to comments by Zimont. Combustion and Flame, 2011, 158, 2073-2074.	5.2	0
141	Numerical and Experimental Study of Stratified Turbulent Combustion in a Spray-Guided Gasoline Direct Injection Engine. Lecture Notes in Mobility, 2015, , 77-84.	0.2	0
142	A balance equation for modeling conditioned enthalpies in premixed turbulent flames. Combustion and Flame, 2015, 162, 3691-3703.	5.2	0
143	Smallest scale of wrinkles of a Huygens front in extremely strong turbulence. Physical Review E, 2021, 104, 045101.	2.1	0
144	(2-10) Towards Evaluation of Turbulent Flame Speed((SI-4)S. I. Engine Combustion 4-Flame Propagation). The Proceedings of the International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines, 2001, 01.204, 31.	0.1	0

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145	Effects of Flame Development and Structure on Thermo-Acoustic Oscillations of Premixed Turbulent Flames(S.I. Engines, Flame Propagation). The Proceedings of the International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines, 2004, 2004.6, 599-606.	0.1	0