Andrei N Lipatnikov

List of Publications by Citations

139 papers	2,485 citations	23 h-index	44 g-index
146 ext. papers	2,956 ext. citations	4.7 avg, IF	5.83 L-index

#	Paper	IF	Citations
139	Turbulent flame speed and thickness: phenomenology, evaluation, and application in multi-dimensional simulations. *Progress in Energy and Combustion Science*, **2002**, 28, 1-74	33.6	387
138	Molecular transport effects on turbulent flame propagation and structure. *Progress in Energy and Combustion Science*, **2005**, 31, 1-73	33.6	234
137	Effects of premixed flames on turbulence and turbulent scalar transport. *Progress in Energy and Combustion Science*, **2010**, 36, 1-102	33.6	146
136	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	33.6	60
135	Recent Advances in Understanding of Thermal Expansion Effects in Premixed Turbulent Flames. *Annual Review of Fluid Mechanics*, **2017**, 49, 91-117	22	56
134	Finding the markstein number using the measurements of expanding spherical laminar flames. *Combustion and Flame*, **1997**, 109, 436-448	5.3	56
133	A test of an engineering model of premixed turbulent combustion. *Proceedings of the Combustion Institute*, **1996**, 26, 249-257		54
132	Unburned mixture fingers in premixed turbulent flames. *Proceedings of the Combustion Institute*, **2015**, 35, 1401-1408	5.9	53
131	A direct numerical simulation study of vorticity transformation in weakly turbulent premixed flames. *Physics of Fluids*, **2014**, 26, 105104	4.4	53
130	Fundamentals of Premixed Turbulent Combustion		53
129	Correlations of high-pressure lean methane and syngas turbulent burning velocities: Effects of turbulent Reynolds, Damk[illegible]ler, and Karlovitz numbers. *Proceedings of the Combustion Institute*, **2015**, 35, 1509-1516	5.9	42
128	Effects of Lewis number on vorticity and enstrophy transport in turbulent premixed flames. *Physics of Fluids*, **2016**, 28, 015109	4.4	42
127	Conditionally averaged balance equations for modeling premixed turbulent combustion in flamelet regime. *Combustion and Flame*, **2008**, 152, 529-547	5.3	33
126	Transient and Geometrical Effects in Expanding Turbulent Flames. *Combustion Science and Technology*, **2000**, 154, 75-117	1.5	33
125	Lewis Number Effects in Premixed Turbulent Combustion and Highly Perturbed Laminar Flames. *Combustion Science and Technology*, **1998**, 137, 277-298	1.5	32
124	A direct numerical simulation study of interface propagation in homogeneous turbulence. *Journal of Fluid Mechanics*, **2015**, 772, 127-164	3.7	31
123	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	5.3	28

122	Direct numerical simulation study of statistically stationary propagation of a reaction wave in homogeneous turbulence. *Physical Review E*, **2017**, 95, 063101	2.4	28
121	A balance equation for the mean rate of product creation in premixed turbulent flames. *Proceedings of the Combustion Institute*, **2017**, 36, 1893-1901	5.9	26
120	Turbulent burning velocity and speed of developing, curved, and strained flames. *Proceedings of the Combustion Institute*, **2002**, 29, 2113-2121	5.9	26
119	DNS study of dependence of bulk consumption velocity in a constant-density reacting flow on turbulence and mixture characteristics. *Physics of Fluids*, **2017**, 29, 065116	4.4	25
118	Global stretch effects in premixed turbulent combustion. *Proceedings of the Combustion Institute*, **2007**, 31, 1361-1368	5.9	24
117	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	2.5	23
116	Effects of Lewis number on conditional fluid velocity statistics in low Damköhler number turbulent premixed combustion: A direct numerical simulation analysis. *Physics of Fluids*, **2013**, 25, 045101	4.4	23
115	Self-similarly developing, premixed, turbulent flames: A theoretical study. *Physics of Fluids*, **2005**, 17, 065105	4.4	23
114	Some Issues of Using Markstein Number for Modeling Premixed Turbulent Combustion. *Combustion Science and Technology*, **1996**, 119, 131-154	1.5	22
113	A transport equation for reaction rate in turbulent flows. *Physics of Fluids*, **2016**, 28, 081701	4.4	21
112	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	1.5	21
111	A Simple Model of Unsteady Turbulent Flame Propagation **1997**,		21
110	A theoretical study of premixed turbulent flame development. *Proceedings of the Combustion Institute*, **2005**, 30, 843-850	5.9	21
109	Transition from pulled to pushed fronts in premixed turbulent combustion: Theoretical and numerical study. *Combustion and Flame*, **2015**, 162, 2893-2903	5.3	20
108	Transition from pulled to pushed premixed turbulent flames due to countergradient transport. *Combustion Theory and Modelling*, **2013**, 17, 1154-1175	1.5	20
107	Developing Premixed Turbulent Flames: Part I. A Self-Similar Regime of Flame Propagation. *Combustion Science and Technology*, **2001**, 162, 85-112	1.5	20
106	Three-dimensional direct numerical simulation study of conditioned moments associated with front propagation in turbulent flows. *Physics of Fluids*, **2014**, 26, 085104	4.4	19
105	Thin reaction zones in constant-density turbulent flows at low Damköhler numbers: Theory and simulations. *Physics of Fluids*, **2019**, 31, 055104	4.4	18

104	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	1.5	18
103	Flamelet perturbations and flame surface density transport in weakly turbulent premixed combustion. *Combustion Theory and Modelling*, **2017**, 21, 205-227	1.5	18
102	Modeling of stratified combustion in a direct-ignition, spark-ignition engine accounting for complex chemistry. *Proceedings of the Combustion Institute*, **2002**, 29, 703-709	5.9	17
101	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	2.4	16
100	A Simple Model for Evaluating Conditioned Velocities in Premixed Turbulent Flames. *Combustion Science and Technology*, **2011**, 183, 588-613	1.5	16
99	Chemical Model of Gasoline-Ethanol Blends for Internal Combustion Engine Applications **2010**,		16
98	APPLICATION OF THE MARKSTEIN NUMBER CONCEPT TO CURVED TURBULENT FLAMES. *Combustion Science and Technology*, **2004**, 176, 331-358	1.5	16
97	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	3.7	15
96	Conditional velocity statistics for high and low Damk�ler number turbulent premixed combustion in the context of Reynolds Averaged Navier Stokes simulations. *Proceedings of the Combustion Institute*, **2013**, 34, 1333-1345	5.9	15
95	Effects of turbulent flame development on thermoacoustic oscillations. *Combustion and Flame*, **2005**, 142, 130-139	5.3	15
94	Dependence of heat release on the progress variable in premixed turbulent combustion. *Proceedings of the Combustion Institute*, **2000**, 28, 227-234	5.9	15
93	Letter: Does flame-generated vorticity increase turbulent burning velocity?. *Physics of Fluids*, **2018**, 30, 081702	4.4	15
92	Thin reaction zones in highly turbulent medium. *International Journal of Heat and Mass Transfer*, **2019**, 128, 1201-1205	4.9	14
91	Turbulent diffusion of chemically reacting flows: Theory and numerical simulations. *Physical Review E*, **2017**, 96, 053111	2.4	14
90	Does Density Ratio Significantly Affect Turbulent Flame Speed?. *Flow, Turbulence and Combustion*, **2017**, 98, 1153-1172	2.5	14
89	Statistical behaviors of conditioned two-point second-order structure functions in turbulent premixed flames in different combustion regimes. *Physics of Fluids*, **2019**, 31, 115109	4.4	14
88	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	2.5	14
87	Evolution of averaged local premixed flame thickness in a turbulent flow. *Combustion and Flame*, **2019**, 207, 232-249	5.3	13

86	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	4.6	13
85	Combustion-induced local shear layers within premixed flamelets in weakly turbulent flows. *Physics of Fluids*, **2018**, 30, 085101	4.4	13
84	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, 055101	4.4	13
83	Are premixed turbulent stagnation flames equivalent to fully developed ones? A computational study. *Combustion Science and Technology*, **2002**, 174, 3-26	1.5	13
82	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	5.9	13
81	Can we characterize turbulence in premixed flames?. *Combustion and Flame*, **2009**, 156, 1242-1247	5.3	12
80	Conditioned moments in premixed turbulent reacting flows. *Proceedings of the Combustion Institute* , **2011**, 33, 1489-1496	5.9	12
79	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	5.3	12
78	A test of conditioned balance equation approach. *Proceedings of the Combustion Institute*, **2011**, 33, 1497-1504	5.9	11
77	Testing Premixed Turbulent Combustion Models by Studying Flame Dynamics. *International Journal of Spray and Combustion Dynamics*, **2009**, 1, 39-66	1.3	11
76	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	6.7	11
75	RANS Simulations of Statistically Stationary Premixed Turbulent Combustion Using Flame Speed Closure Model. *Flow, Turbulence and Combustion*, **2015**, 94, 381-414	2.5	10
74	Modelling of Gasoline and Ethanol Hollow-Cone Sprays Using OpenFOAM **2011**,		10
73	Transient Behavior of Turbulent Scalar Transport in Premixed Flames. *Flow, Turbulence and Combustion*, **2011**, 86, 609-637	2.5	10
72	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	1.5	9
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	2.4	9
70	A study of the effects of pressure-driven transport on developing turbulent flame structure and propagation. *Combustion Theory and Modelling*, **2004**, 8, 211-225	1.5	9
69	Comment on Turbulent burning velocity, burned gas distribution, and associated flame surface definition *Combustion and Flame*, **2004**, 137, 261-263	5.3	9

68	Developing Premixed Turbulent Flames: Part II. Pressure-Driven Transport and Turbulent Diffusion. *Combustion Science and Technology*, **2001**, 165, 175-195	1.5	9
67	Towards an Extension of TFC Model of Premixed Turbulent Combustion. *Flow, Turbulence and Combustion*, **2013**, 90, 387-400	2.5	8
66	Effects of flame development on stationary premixed turbulent combustion. *Proceedings of the Combustion Institute*, **2007**, 31, 3115-3122	5.9	8
65	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	1.5	8
64	Simulations of Fuel/Air Mixing, Combustion, and Pollutant Formation in a Direct Injection Gasoline Engine **2002**,		7
63	A DNS Study of Sensitivity of Scaling Exponents for Premixed Turbulent Consumption Velocity to Transient Effects. *Flow, Turbulence and Combustion*, **2019**, 102, 679-698	2.5	7
62	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	4.9	6
61	Statistics conditioned to isoscalar surfaces in highly turbulent premixed reacting systems. *Computers and Fluids*, **2019**, 187, 69-82	2.8	6
60	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	1.3	6
59	SCALAR TRANSPORT IN SELF-SIMILAR, DEVELOPING, PREMIXED, TURBULENT FLAMES. *Combustion Science and Technology*, **2007**, 179, 91-115	1.5	6
58	Turbulent Flame Speed Closure Model: Further Development and Implementation for 3-D Simulation of Combustion in SI Engine **1998**,		6
57	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	5.3	6
56	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	5.3	6
55	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	6.7	6
54	Closure Relations for Fluxes of Flame Surface Density and Scalar Dissipation Rate in Turbulent Premixed Flames. *Fluids*, **2019**, 4, 43	1.6	5
53	Surface-averaged quantities in turbulent reacting flows and relevant evolution equations. *Physical Review E*, **2019**, 100, 013107	2.4	5
52	A Numerical Study on Stratified Turbulent Combustion in a Direct-Injection Spark-Ignition Gasoline Engine Using an Open-Source Code **2014**,		5
51	Transition from Countergradient to Gradient Scalar Transport in Developing Premixed Turbulent Flames. *Flow, Turbulence and Combustion*, **2013**, 90, 401-418	2.5	5

50	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	6.7	5
49	Dissipation and dilatation rates in premixed turbulent flames. *Physics of Fluids*, **2021**, 33, 035112	4.4	5
48	Evaluation of mean species mass fractions in premixed turbulent flames: A DNS study. *Proceedings of the Combustion Institute*, **2021**, 38, 6413-6420	5.9	5
47	DNS Study of the Bending Effect Due to Smoothing Mechanism. *Fluids*, **2019**, 4, 31	1.6	4
46	Modeling of the Influence of Mixture Fraction Fluctuations on Burning Rate in Partially Premixed Turbulent Flames. *Combustion Science and Technology*, **2015**, 187, 594-626	1.5	4
45	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	0.8	4
44	Comparison of Presumed PDF Models of Turbulent Flames. *Journal of Combustion*, **2012**, 2012, 1-15	0.8	4
43	Influence of molecular transport on burning rate and conditioned species concentrations in highly turbulent premixed flames. *Journal of Fluid Mechanics*, **2021**, 928,	3.7	4
42	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	3.5	4
41	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	2.5	4
40	Evolution equations for the decomposed components of displacement speed in a reactive scalar field. *Journal of Fluid Mechanics*, **2021**, 911,	3.7	4
39	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	2.4	3
38	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	1.5	3
37	NUMERICAL TESTS OF A MEASUREMENT METHOD FOR TURBULENT BURNING VELOCITY IN STAGNATION FLAMES. *Combustion Science and Technology*, **2006**, 178, 1117-1141	1.5	3
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35	Modeling of Pressure and Non-Stationary Effects in Spark Ignition Engine Combustion: A Comparison of Different Approaches **2000**,		3
34	Some Basic Issues of the Averaged G-Equation Approach to Premixed Turbulent Combustion Modeling. *The Open Thermodynamics Journal*, **2008**, 2, 53-58		3
33	Bifractal nature of turbulent reaction waves at high Damkhler and Karlovitz numbers. *Physics of Fluids*, **2020**, 32, 095118	4.4	3

32	Assessment of a flamelet approach to evaluating mean species mass fractions in moderately and highly turbulent premixed flames. *Physics of Fluids*, **2021**, 33, 045121	4.4	3
31	Lewis number and preferential diffusion effects in lean hydrogen–air highly turbulent flames. *Physics of Fluids*, **2022**, 34, 035131	4.4	3
30	Large Eddy Simulation of Stratified Combustion in Spray-guided Direct Injection Spark-ignition Engine **2018**,		2
29	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
28	Burning Rate in Impinging Jet Flames. *Journal of Combustion*, **2011**, 2011, 1-11	0.8	2
27	Simulations of Scalar Transport in Developing Turbulent Flames Solving a Conditioned Balance Equation. *Combustion Science and Technology*, **2010**, 182, 405-421	1.5	2
26	Randomness of Flame Kernel Development in Turbulent Gas Mixture **1998**,		2
25	A New Mathematical Framework for Describing Thin-Reaction-Zone Regime of Turbulent Reacting Flows at Low Damköhler Number. *Fluids*, **2020**, 5, 109	1.6	2
24	Solenoidal and potential velocity fields in weakly turbulent premixed flames. *Proceedings of the Combustion Institute*, **2021**, 38, 3087-3095	5.9	2
23	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	5.9	2
22	RANS Simulations of Premixed Turbulent Flames. *Energy, Environment, and Sustainability*, **2018**, 181-240	0.8	1
21	A Numerical Study of Weakly Turbulent Premixed Combustion with Flame Speed Closure Model **2003**,		1
20	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		1
19	A vented corn starch dust explosion in an 11.5 m3 vessel: Experimental and numerical study. *Journal of Loss Prevention in the Process Industries*, **2021**, 75, 104707	3.5	1
18	Assessment of an Evolution Equation for the Displacement Speed of a Constant-Density Reactive Scalar Field. *Flow, Turbulence and Combustion*, **2021**, 106, 1091-1110	2.5	1
17	Scaling of reaction progress variable variance in highly turbulent reaction waves. *Physics of Fluids*, **2021**, 33, 085103	4.4	1
16	A DNS study of extreme and leading points in lean hydrogen-air turbulent flames –Part I: Local thermochemical structure and reaction rates. *Combustion and Flame*, **2021**, 235, 111716	5.3	1
15	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*, **2021**, 111712	5.3	1

14	Passive Front Propagation in Intense Turbulence: Early Transient and Late Statistically Stationary Stages of the Front Area Evolution. *Energies*, **2021**, 14, 5102	3.1	0
13	Numerical and Experimental Study of Stratified Turbulent Combustion in a Spray-Guided Gasoline Direct Injection Engine. *Lecture Notes in Mobility*, **2015**, 77-84	0.5	
12	A balance equation for modeling conditioned enthalpies in premixed turbulent flames. *Combustion and Flame*, **2015**, 162, 3691-3703	5.3	
11	Premixed Turbulent Flames. *Journal of Combustion*, **2011**, 2011, 1-2	0.8	
10	Reply to comments by Zimont. *Combustion and Flame*, **2011**, 158, 2073-2074	5.3	
9	Numerical Modeling of Stationary But Developing Premixed Turbulent Flames **2006**, 691		
8	TRANSIENT AND CURVATURE EFFECTS WHEN DEFINING BURNING VELOCITY AND SPEED OF PREMIXED TURBULENT FLAMES **2002**, 853-862		
7	Numerical modeling of nitrogen oxide formation in turbulent combustion of a premixed gas mixture. *Combustion, Explosion and Shock Waves*, **1993**, 29, 326-330	1	
6	Nitrogen oxide formation in a flame at slight deviations from equilibrium. *Combustion, Explosion and Shock Waves*, **1989**, 24, 407-409	1	
5	Taking account of heat losses in modeling the turbulent combustion of a preliminarily mixed mixture. *Combustion, Explosion and Shock Waves*, **1988**, 24, 290-293	1	
4	Smallest scale of wrinkles of a Huygens front in extremely strong turbulence. *Physical Review E*, **2021**, 104, 045101	2.4	
3	(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		
2	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		
1	Investigation of Charge Mixing and Stratified Fuel Distribution in a DISI Engine Using Rayleigh Scattering and Numerical Simulations. *Mechanisms and Machine Science*, **2022**, 187-206	0.3	