Fazle Hussain

List of Publications by Citations

158 papers	10,906 citations	36 h-index	103 g-index
169 ext. papers	12,551 ext. citations	4.1 avg, IF	6.54 L-index

#	Paper	IF	Citations
158	On the identification of a vortex. *Journal of Fluid Mechanics*, **1995**, 285, 69	3.7	4195
157	Coherent structures and turbulence. *Journal of Fluid Mechanics*, **1986**, 173, 303-356	3.7	806
156	The mechanics of an organized wave in turbulent shear flow. *Journal of Fluid Mechanics*, **1970**, 41, 241-258	3.7	592
155	Coherent structures: reality and myth. *Physics of Fluids*, **1983**, 26, 2816		535
154	Coherent structure generation in near-wall turbulence. *Journal of Fluid Mechanics*, **2002**, 453, 57-108	3.7	471
153	Coherent structures near the wall in a turbulent channel flow. *Journal of Fluid Mechanics*, **1997**, 332, 185-214	3.7	469
152	Elliptic jets. Part 1. Characteristics of unexcited and excited jets. *Journal of Fluid Mechanics*, **1989**, 208, 257-320	3.7	385
151	The 'preferred mode' of the axisymmetric jet. *Journal of Fluid Mechanics*, **1981**, 110, 39-71	3.7	216
150	Blood flow and coherent vortices in the normal and aneurysmatic aortas: a fluid dynamical approach to intra-luminal thrombus formation. *Journal of the Royal Society Interface*, **2011**, 8, 1449-61	4.1	114
149	Self-Assembly of Single-Walled Carbon Nanotubes into a Sheet by Drop Drying. *Advanced Materials*, **2006**, 18, 29-34	24	111
148	A large-scale control strategy for drag reduction in turbulent boundary layers. *Physics of Fluids*, **1998**, 10, 1049-1051	4.4	99
147	A multiphase model for three-dimensional tumor growth. *New Journal of Physics*, **2013**, 15, 015005	2.9	97
146	Three-dimensionality of organized structures in a plane turbulent wake. *Journal of Fluid Mechanics*, **1989**, 206, 375-404	3.7	97
145	Collision of two vortex rings. *Journal of Fluid Mechanics*, **1991**, 230, 583-646	3.7	95
144	Cross-linking of two antiparallel vortex tubes. *Physics of Fluids A, Fluid Dynamics*, **1989**, 1, 633-636		88
143	Organized motions in a fully developed turbulent axisymmetric jet. *Journal of Fluid Mechanics*, **1989** , 203, 425-448	3.7	84
142	COLLAPSE, SYMMETRY BREAKING, AND HYSTERESIS IN SWIRLING FLOWS. *Annual Review of Fluid Mechanics*, **1999**, 31, 537-566	22	80

141	Elliptic jets. Part 3. Dynamics of preferred mode coherent structure. *Journal of Fluid Mechanics*, **1993**, 248, 315-361	3.7	80
140	Elliptic jets. Part 2. Dynamics of coherent structures: pairing. *Journal of Fluid Mechanics*, **1991**, 233, 439-482	3.7	80
139	Nonlinear dynamics of forced transitional jets: periodic and chaotic attractors. *Journal of Fluid Mechanics*, **1994**, 263, 93-132	3.7	73
138	Mechanics of viscous vortex reconnection. *Physics of Fluids*, **2011**, 23, 021701	4.4	68
137	Transient growth of perturbations in a vortex column. *Journal of Fluid Mechanics*, **2006**, 550, 251	3.7	56
136	Coherent structure dynamics in near-wall turbulence. *Fluid Dynamics Research*, **2000**, 26, 119-139	1.2	56
135	Simulation of vortex reconnection. *Physica D: Nonlinear Phenomena*, **1989**, 37, 474-484	3.3	56
134	Direct evaluation of aeroacoustic theory in a jet. *Journal of Fluid Mechanics*, **1992**, 240, 469	3.7	54
133	Hysteresis in swirling jets. *Journal of Fluid Mechanics*, **1996**, 309, 1-44	3.7	53
132	Experiments on subharmonic resonance in a shear layer. *Journal of Fluid Mechanics*, **1995**, 304, 343-372	3.7	51
131	Transitions to chaos in a forced jet: intermittency, tangent bifurcations and hysteresis. *Journal of Fluid Mechanics*, **1996**, 311, 37	3.7	51
130	A new mechanism of small-scale transition in a plane mixing layer: core dynamics of spanwise vortices. *Journal of Fluid Mechanics*, **1995**, 298, 23-80	3.7	46
129	Statistical behavior of supersonic turbulent boundary layers with heat transfer at$M \boxplus 2$. *International Journal of Heat and Fluid Flow*, **2015**, 53, 113-134	2.4	45
128	On the near-wall vortical structures at moderate Reynolds numbers. *European Journal of Mechanics, B/Fluids*, **2014**, 48, 75-93	2.4	45
127	A generalized Reynolds analogy for compressible wall-bounded turbulent flows. *Journal of Fluid Mechanics*, **2014**, 739, 392-420	3.7	45
126	Reconnection of two vortex rings. *Physics of Fluids A, Fluid Dynamics*, **1989**, 1, 630-632		45
125	Polarized vorticity dynamics on a vortex column. *Physics of Fluids A, Fluid Dynamics*, **1993**, 5, 1992-2003		43
124	Core dynamics on a vortex column. *Fluid Dynamics Research*, **1994**, 13, 1-37	1.2	38

123	Early spray development at high gas density: hole, ligament and bridge formations. *Journal of Fluid Mechanics*, **2016**, 792, 186-231	3.7	36
122	Quantifying wall turbulence via a symmetry approach: a Lie group theory. *Journal of Fluid Mechanics*, **2017**, 827, 322-356	3.7	35
121	Hysteresis in a swirling jet as a model tornado. *Physics of Fluids A, Fluid Dynamics*, **1993**, 5, 2183-2195		35
120	Symmetry breaking in vortex-source and Jeffery□Hamel flows. *Journal of Fluid Mechanics*, **1991**, 232, 521	3.7	35
119	Instantaneous flow field in an unstable vortex ring measured by holographic particle velocimetry. *Physics of Fluids*, **1995**, 7, 9-11	4.4	34
118	New perspective in statistical modeling of wall-bounded turbulence. *Acta Mechanica Sinica/Lixue Xuebao*, **2010**, 26, 847-861	2	33
117	Locally solving fractional Laplacian viscoacoustic wave equation using Hermite distributed approximating functional method. *Geophysics*, **2017**, 82, T59-T67	3.1	31
116	Three phase flow dynamics in tumor growth. *Computational Mechanics*, **2014**, 53, 465-484	4	31
115	Planar liquid jet: Early deformation and atomization cascades. *Physics of Fluids*, **2017**, 29, 062109	4.4	31
114	Compressible vortex reconnection. *Journal of Fluid Mechanics*, **1995**, 304, 47-86	3.7	31
113	Understanding liquid-jet atomization cascades via vortex dynamics. *Journal of Fluid Mechanics*, **2018** , 843, 293-354	3.7	29
112	Effects of boundary condition in numerical simulations of vortex dynamics. *Journal of Fluid Mechanics*, **2004**, 516, 115-124	3.7	29
111	Vortex tube reconnection at Re = 104. *Physics of Fluids*, **2012**, 24, 075105	4.4	27
110	A physical model of turbulence cascade via vortex reconnection sequence and avalanche. *Journal of Fluid Mechanics*, **2020**, 883,	3.7	27
109	Quantifying wall turbulence via a symmetry approach. Part 2. Reynolds stresses. *Journal of Fluid Mechanics*, **2018**, 850, 401-438	3.7	26
108	Experimental studies of surface waves inside a cylindrical container. *Journal of Fluid Mechanics*, **2011**, 677, 39-62	3.7	26
107	Aggressive prostate cancer cell nuclei have reduced stiffness. *Biomicrofluidics*, **2018**, 12, 014102	3.2	24
106	Vitamin D decreases glycolysis and invasiveness, and increases cellular stiffness in breast cancer cells. *Journal of Nutritional Biochemistry*, **2018**, 53, 111-120	6.3	24

105	Vortex sinks with axial flow: Solution and applications. *Physics of Fluids*, **1997**, 9, 2941-2959	4.4	24
104	Analysis of inviscid vortex breakdown in a semi-infinite pipe. *Fluid Dynamics Research*, **1998**, 23, 189-234	1.2	24
103	Drag control in wall-bounded turbulent flows via spanwise opposed wall-jet forcing. *Journal of Fluid Mechanics*, **2018**, 852, 678-709	3.7	23
102	A note on velocity, vorticity and helicity of inviscid fluid elements. *Journal of Fluid Mechanics*, **1991**, 229, 569	3.7	23
101	Dynamics of a polarized vortex ring. *Journal of Fluid Mechanics*, **1994**, 260, 23-55	3.7	22
100	Mach-number-invariant mean-velocity profile of compressible turbulent boundary layers. *Physical Review Letters*, **2012**, 109, 054502	7.4	21
99	Velocity□orticity correlation structure in turbulent channel flow. *Journal of Fluid Mechanics*, **2014**, 742, 291-307	3.7	20
98	Vortex dynamics of clapping plates. *Journal of Fluid Mechanics*, **2013**, 714, 5-23	3.7	20
97	A multi-state description of roughness effects in turbulent pipe flow. *New Journal of Physics*, **2012**, 14, 093054	2.9	20
96	The elliptic whistler jet. *Journal of Fluid Mechanics*, **1999**, 397, 23-44	3.7	19
95	Large-scale control strategy for drag reduction in turbulent channel flows. *Physical Review Fluids*, **2017**, 2,	2.8	19
94	The log behaviour of the Reynolds shear stress in accelerating turbulent boundary layers. *Journal of Fluid Mechanics*, **2015**, 775, 189-200	3.7	18
93	Azimuthal instability of divergent flows. *Journal of Fluid Mechanics*, **1993**, 256, 535-560	3.7	18
92	Effect of deceleration on jet instability. *Journal of Fluid Mechanics*, **2003**, 480, 283-309	3.7	17
91	Formation of head□ail structure in a two-dimensional uniform straining flow. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 2688-2697		17
90	Role of coherent structures in an isothermally reacting mixing layer. *Physics of Fluids*, **1994**, 6, 885-902	4.4	16
89	Alteration of lipid membrane structure and dynamics by diacylglycerols with unsaturated chains. *Biochimica Et Biophysica Acta - Biomembranes*, **2016**, 1858, 253-63	3.8	14
88	Reynolds number effect on drag control via spanwise wall oscillation in turbulent channel flows. *Physics of Fluids*, **2019**, 31, 085108	4.4	14

87	Multiscale modeling of incompressible turbulent flows. *Journal of Computational Physics*, **2013**, 232, 383-396	4.1	14
86	On singularity formation via viscous vortex reconnection. *Journal of Fluid Mechanics*, **2020**, 888,	3.7	13
85	Role of coherent structures in multiple self-similar states of turbulent planar wakes. *Journal of Fluid Mechanics*, **2013**, 731, 312-363	3.7	13
84	Topological vortex dynamics in axisymmetric viscous flows. *Journal of Fluid Mechanics*, **1994**, 260, 57-80	3.7	13
83	On the invariant mean velocity profile for compressible turbulent boundary layers. *Journal of Turbulence*, **2017**, 18, 186-202	2.1	12
82	Non-universal scaling transition of momentum cascade in wall turbulence. *Journal of Fluid Mechanics*, **2019**, 871,	3.7	12
81	Human equilibrative nucleoside transporter-1 knockdown tunes cellular mechanics through epithelial-mesenchymal transition in pancreatic cancer cells. *PLoS ONE*, **2014**, 9, e107973	3.7	12
80	Vacuolar H+-ATPase in the nuclear membranes regulates nucleo-cytosolic proton gradients. *American Journal of Physiology - Cell Physiology*, **2016**, 311, C547-C558	5.4	12
79	Higher Glucose Enhances Breast Cancer Cell Aggressiveness. *Nutrition and Cancer*, **2020**, 72, 734-746	2.8	12
78	Supersonic turbulent boundary layer drag control using spanwise wall oscillation. *Journal of Fluid Mechanics*, **2019**, 880, 388-429	3.7	11
77	Vortex dynamics of turbulence–coherent structure interaction. *Theoretical and Computational Fluid Dynamics*, **2010**, 24, 265-282	2.3	11
76	Genesis of Longitudinal Vortices in Near-Wall Turbulence. *Meccanica*, **1998**, 33, 489-501	2.1	11
75	Instabilities of conical flows causing steady bifurcations. *Journal of Fluid Mechanics*, **1998**, 366, 33-85	3.7	11
74	Measurements of spatiotemporal dynamics in a forced plane mixing layer. *Journal of Fluid Mechanics*, **1996**, 320, 71	3.7	11
73	Flat plate drag reduction using plasma-generated streamwise vortices. *Journal of Fluid Mechanics*, **2021**, 918,	3.7	11
72	Toward vortex identification based on local pressure-minimum criterion in compressible and variable density flows. *Journal of Fluid Mechanics*, **2018**, 850, 5-17	3.7	11
71	Predictions of canonical wall-bounded turbulent flows via a modified k–equation. *Journal of Turbulence*, **2017**, 18, 1-35	2.1	10
70	Passage times and friction due to flow of confined cancer cells, drops, and deformable particles in a microfluidic channel. *Convergent Science Physical Oncology*, **2017**, 3, 024001		10

69	Core dynamics of a strained vortex: instability and transition. *Journal of Fluid Mechanics*, **2001**, 447, 247-285	3.7	10
68	A predictive model for Covid-19 spread - with application to eight US states and how to end the pandemic. *Epidemiology and Infection*, **2020**, 148, e249	4.3	9
67	Quantification of turbulent mixing in colliding gravity currents. *Journal of Fluid Mechanics*, **2018**, 851, 125-147	3.7	9
66	Analysis of Reynolds number scaling for viscous vortex reconnection. *Physics of Fluids*, **2012**, 24, 105102	4.4	9
65	Influence of initial conditions on compressible vorticity dynamics. *Theoretical and Computational Fluid Dynamics*, **1993**, 5, 309-334	2.3	9
64	Coherent Structures in Turbulent Shear Flows. *Applied Mechanics Reviews*, **1990**, 43, S203-S209	8.6	9
63	Inverse scattering theory: Inverse scattering series method for one dimensional non-compact support potential. *Journal of Mathematical Physics*, **2014**, 55, 123512	1.2	8
62	Nonlinear transient growth in a vortex column. *Journal of Fluid Mechanics*, **2011**, 682, 304-331	3.7	8
61	Separation scaling for viscous vortex reconnection. *Journal of Fluid Mechanics*, **2020**, 900,	3.7	8
60	Compressibility effects on the structural evolution of transitional high-speed planar wakes. *Journal of Fluid Mechanics*, **2016**, 796, 5-39	3.7	8
59	Vorticity dynamics in a spatially developing liquid jet inside a co-flowing gas. *Journal of Fluid Mechanics*, **2019**, 877, 429-470	3.7	7
58	Length-scale cascade and spread rate of atomizing planar liquid jets. *International Journal of Multiphase Flow*, **2019**, 113, 117-141	3.6	7
57	One dimensional acoustic direct nonlinear inversion using the Volterra inverse scattering series. *Inverse Problems*, **2014**, 30, 075006	2.3	7
56	The vortex liquid piston engine and some other vortex technologies. *Sadhana - Academy Proceedings in Engineering Sciences*, **1997**, 22, 323-367	1	7
55	Tumor-Associated Macrophages as Multifaceted Regulators of Breast Tumor Growth. *International Journal of Molecular Sciences*, **2021**, 22,	6.3	7
54	Prediction of compressible turbulent boundary layer via a symmetry-based length model. *Journal of Fluid Mechanics*, **2018**, 857, 449-468	3.7	7
53	Bulk flow scaling for turbulent channel and pipe flows. *Europhysics Letters*, **2016**, 115, 34001	1.6	6
52	Inverse acoustic scattering series using the Volterra renormalization of the Lippmann-Schwinger equation **2013**,		6

51	Model for propagation speed in turbulent channel flows. *Physical Review E*, **2012**, 86, 046307	2.4	6
50	Education of coherent structures in a numerically simulated plane wake. *Flow, Turbulence and Combustion*, **1994**, 53, 227-236		6
49	Loss of homogeneity in a suspension by kinematic action. *Nature*, **1992**, 357, 141-142	50.4	6
48	Aeroacoustic noise generation due to vortex reconnection. *Physical Review Fluids*, **2020**, 5,	2.8	6
47	Three-dimensional liquid sheet breakup: vorticity dynamics **2016**,		5
46	Optimal transient growth on a vortex ring and its transition via cascade of ringlets. *Journal of Fluid Mechanics*, **2017**, 832, 269-286	3.7	5
45	Low-frequency reflection-data augmentation by an inpainting method: 1D acoustic media. *Geophysics*, **2015**, 80, R139-R153	3.1	5
44	Multi-dimensional Inverse acoustic scattering series using the Volterra renormalization of the Lippmann-Schwinger equation **2014**,		5
43	Formation of near-wall streamwise vortices by streak instability **1998**,		5
42	Understanding Turbulence Via Vortex Dynamics **1992**, 157-178		5
41	VD mitigates breast cancer aggressiveness by targeting V-H-ATPase. *Journal of Nutritional Biochemistry*, **2019**, 70, 185-193	6.3	4
40	Anomalous dissipation and kinetic-energy distribution in pipes at very high Reynolds numbers. *Physical Review E*, **2016**, 93, 011102	2.4	4
39	Self-limiting and regenerative dynamics of perturbation growth on a vortex column. *Journal of Fluid Mechanics*, **2013**, 718, 39-88	3.7	4
38	Incorporating boundary constraints to predict mean velocities in turbulent channel flow. *Science China: Physics, Mechanics and Astronomy*, **2012**, 55, 1691-1695	3.6	4
37	Velocity-Vorticity Correlation Structure in Turbulent Channel Flow **2011**,		4
36	Instantaneous Directivity in Jet Noise by Multipole Decomposition. *Journal of Vibration and Acoustics, Transactions of the ASME*, **1995**, 117, 172-179	1.6	4
35	Similarity transformation for equilibrium boundary layers, including effects of blowing and suction. *Physical Review Fluids*, **2017**, 2,	2.8	4
34	Turbulence statistics and coherent structures in compressible channel flow. *Physical Review Fluids*, **2020**, 5,	2.8	4

33	VD and LXR agonist (T0901317) combination demonstrated greater potency in inhibiting cholesterol accumulation and inducing apoptosis via ABCA1-CHOP-BCL-2 cascade in MCF-7 breast cancer cells. *Molecular Biology Reports*, **2020**, 47, 7771-7782	2.8	4
32	Forward Scattering and Volterra Renormalization for Acoustic Wavefield Propagation in Vertically Varying Media. *Communications in Computational Physics*, **2016**, 20, 353-373	2.4	4
31	Theoretical framework for energy flux analysis of channels under drag control. *Physical Review Fluids*, **2021**, 6,	2.8	4
30	Enhanced blebbing as a marker for metastatic prostate cancer. *Biomicrofluidics*, **2019**, 13, 034110	3.2	3
29	Temperature-Invariant Scaling for Compressible Turbulent Boundary Layers with Wall Heat Transfer. *Heat Transfer Engineering*, **2018**, 39, 923-932	1.7	3
28	External turbulence-induced axial flow and instability in a vortex. *Journal of Fluid Mechanics*, **2016**, 793, 353-379	3.7	3
27	The logarithmic and power law behaviors of the accelerating, turbulent thermal boundary layer. *Physics of Fluids*, **2017**, 29, 020718	4.4	2
26	Shear Stress Increases V-H -ATPase and Acidic Vesicle Number Density, and p-mTORC2 Activation in Prostate Cancer Cells. *Cellular and Molecular Bioengineering*, **2020**, 13, 591-604	3.9	2
25	Role of Bioroughness, Bioirrigation, and Turbulence on Oxygen Dynamics at the Sediment-Water Interface. *Water Resources Research*, **2019**, 55, 8061-8075	5.4	2
24	Generation of collimated jets by a point source of heat and gravity. *Journal of Fluid Mechanics*, **2001**, 449, 39-59	3.7	2
23	Numerical study of near-wall coherent structures and their control in turbulent boundary layers **1998**, 103-116		2
22	New studies in vortex dynamics: Incompressible and compressible vortex reconnection, core dynamics, and coupling between large and small scales. *Sadhana - Academy Proceedings in Engineering Sciences*, **1993**, 18, 477-529	1	2
21	Scattering theory and Volterra renormalization for wave modeling in heterogeneous acoustic media **2015**,		2
20	Magnesium Chloride is an Effective Therapeutic Agent for Prostate Cancer. *Functional Foods in Health and Disease*, **2018**, 8, 62	2.5	2
19	Nonlinear Instability of Free Shear Layers: Subharmonic Resonance and Three-Dimensional Vortex Dynamics **1994**, 251-280		2
18	New Aspects of Vortex Dynamics Relevant to Coherent Structures in Turbulent Flows **1996**, 61-143		2
17	Dynamics of a trefoil knotted vortex. *Journal of Fluid Mechanics*, **2021**, 923,	3.7	2
16	Polarized vortex reconnection. *Journal of Fluid Mechanics*, **2021**, 922,	3.7	2

15	Vorticity transports in turbulent channels under large-scale control via spanwise wall jet forcing. *Physics of Fluids*, **2021**, 33, 095112	4.4	2
14	The Complementary Roles of Experiments and Simulation in Coherent Structure Studies **1991**, 195-228		2
13	An hermite distributed approximation functional fitting method to augment reflection data down to zero frequency **2014**,		1
12	Vortex Reconnection and Turbulence Cascade. *Annual Review of Fluid Mechanics*, **2022**, 54,	22	1
11	Phase aligned ensemble averaging for environmental flow studies. *Environmental Fluid Mechanics*, **2020**, 20, 1357-1377	2.2	1
10	New scaling laws predicting turbulent particle pair diffusion, overcoming the limitations of the prevalent Richardson–Obukhov theory. *Physics of Fluids*, **2021**, 33, 035135	4.4	1
9	Composite active drag control in turbulent channel flows. *Physical Review Fluids*, **2021**, 6,	2.8	1
8	Simulations of Compressible Channel Flow with Pulsed-DC Plasma Actuation for Drag Reduction **2019**,		1
7	Parthenolide reverses the epithelial to mesenchymal transition process in breast cancer by targeting TGFbeta1: In vitro and in silico studies.. *Life Sciences*, **2022**, 120610	6.8	0
6	Field measurements in the wake of a model wind turbine. *Journal of Physics: Conference Series*, **2014**, 524, 012175	0.3	
5	Micropumps Actuated by Smart Materials **2004**, 664		
4	Model Coherent Structure Dynamics: Vortex Reconnection, Core Dynamics and Interaction with Turbulence **1993**, 239-264		
3	Dynamics of Slender Vortices Near the Wall in a Turbulent Boundary Layer. *Fluid Mechanics and Its Applications*, **1998**, 155-172	0.2	
2	Dynamics and Control of Near-Wall Coherent Structures. *Fluid Mechanics and Its Applications*, **1999**, 5-14	0.2	
1	Vortex dynamics of turbulence–coherent structure interaction. *IUTAM Symposium on Cellular, Molecular and Tissue Mechanics*, **2010**, 281-298	0.3	