

Journal Publications (2019)

1. Kumar, D., Sikroria, T., & Kushari, A., "A twin-fluid injector for FCC feed injection", *International Journal of Petrochemical Science & Engineering*, 4(3), 2019 (DOI:10.15406/ipcse.2019.04.00110)
2. Sikroria, T., & Kushari, A., "Experimental Analysis and Phenomenological Model for Liquid Jet Breakup in Swirling Flow of Air", *Journal of Engineering for Gas Turbines and Power*, 141(9), 2019 (DOI:10.1115/1.4044060)
3. Sundararaj, R. H., Kumar, R. D., Raut, A. K., Sekar, T. C., Pandey, V., Kushari, A., & Puri, S. K., "Combustion and emission characteristics from biojet fuel blends in a gas turbine combustor", *Energy*, 182, 2019 (DOI:10.1016/j.energy.2019.06.060)
4. Raj, N., Banavar, R. N., Abhishek, Kothari, M., "Attitude Control of a Novel Tailsitter: Swiveling Biplane-Quadrotor", *Journal of Guidance Control and Dynamics*, early edition Dec 2019. (doi.: 10.2514/1.G004697)
5. Bhargavapuri, M. T., Sahoo, S. R., Kothari, M., Abhishek, "Robust Nonlinear Control of a Variable-Pitch Quadrotor with the Flip Maneuver", *Control Engineering Practice*, vol. 87, pp. 26-42, 2019. (doi.: 10.1016/j.conengprac.2019.03.012)
6. Setu, S., Abhishek, and Venkatesan, C., "Time-domain System Identification of Small Helicopters Using Nonlinear Acceleration and Jerk Prediction Model", *Journal of Aircraft*, vol. 56, No. 3, 2019. (doi: 10.2514/1.C035273)
7. Liu, C., Singh, A. V., Saggese, C., Tang, Q., Chen, D., Wan, K., Vinciguerra, M., Commodo, M., Falco, G. D., Minutolo, P., D'Anna, A., & Wang, H., "Flame-formed carbon nanoparticles exhibit quantum dot behaviors", *Proceedings of the National Academy of Sciences*, 116(26), 2019 (DOI:10.1073/pnas.1900205116)
8. Crane, J., Shi, X., Singh, A. V., Tao, Y., & Wang, H., "Isolating the effect of induction length on detonation structure: Hydrogen–oxygen detonation promoted by ozone", *Combustion and Flame*, 200, 2019 (DOI:10.1016/j.combustflame.2018.11.008)
9. Saggese, C., Singh, A. V., Xue, X., Chu, C., Kholghy, M. R., Zhang, T., Camachoa, J., Giaccaid, J., Millerd, J. H., Thomson, M. J., Sung, C., & Wang, H., "The distillation curve and sooting propensity of a typical jet fuel", *Fuel*, 235, 2019 (DOI:10.1016/j.fuel.2018.07.099)
10. Seshadri, P. K., & De, A., "A robust sharp interface based immersed boundary framework for moving body problems with applications to laminar incompressible flows", *Computers & Mathematics with Applications*, 2019 (DOI: 10.1016/j.camwa.2019.11.020)
11. Arya, N., & De, A., "Effect of grid sensitivity on the performance of wall adapting SGS models for LES of swirling and separating–reattaching flows", *Computers & Mathematics with Applications*, 78(6), 2019 (DOI:10.1016/j.camwa.2019.03.038)
12. Bhatia, B., & De, A., "Numerical study of trailing and leading vortex dynamics in a forced jet with coflow", *Computers & Fluids*, 181, 2019 (DOI:10.1016/j.compfluid.2019.02.001)
13. Mishra, A., Kumar, G., & De, A., "Prediction of separation induced transition on thick airfoil using non-linear URANS based turbulence model", *Journal of Mechanical Science and Technology*, 33(5), 2019 (DOI:10.1007/s12206-019-0419-6)

14. Bhatia, B., & De, A., "Flash boiling in sprays: recent developments and modeling", *Journal of the Indian Institute of Science*, 99(1), 2019 (DOI:10.1007/s41745-019-0104-x)
15. Soni, R. K., Arya, N., & De, A., "Modal decomposition of turbulent supersonic cavity", *Shock Waves*, 29(1), 2019 (DOI:10.1007/s00193-018-0836-y)
16. Kumar, S. & Samanta, A., "Global thermoacoustic oscillations in a thermally driven pulse tube", *Theoretical and Computational Fluid Dynamics*, 33 (5), 433–461, 2019.
17. Perumal, A.K., Manideep, A., Rathakrishnan, E., "Impact of Tab Location Relative to the Nozzle Exit on the Shock Structure of a Supersonic Jet", *Physics of Fluids*, vol. 31, No. 7, 076104, 2019.
18. Perumal, A.K., Kumar A.S.M., Mitra, S., Rathakrishnan, E., "Empirical Scaling Analysis of Supersonic Jet Control using Steady Fluidic Injection", *Physics of Fluids*, vol. 31, No. 5, 056107, 2019.
19. Parikh, D., Tewari, A., "Optimal Landing Strategy on a Uniformly Rotating Homogeneous Rectangular Parallelepiped", *Journal of the Astronautical Sciences*, pp. 1-30, (IF: 2.775), Springer, 2020. (DOI: 10.1007/s40295-020-00243-y).
20. Koley, S., Mohite, P. M., & Upadhyay, C. S., "A micromechanical study and uncertainty quantification for effective properties of unidirectional fibre reinforced composites", *Composite Structures*, 225, 2019 (DOI:10.1016/j.compstruct.2019.111141)
21. Koley, S., Mohite, P. M., & Upadhyay, C. S., "Boundary layer effect at the edge of fibrous composites using homogenization theory", *Composites Part B: Engineering*, 173, 2019 (DOI:10.1016/j.compositesb.2019.05.026)
22. Dutta, R.K., Shaيدا, M.K., Singla, K., Das, D., "Highly efficient adsorptive removal of uranyl ions by a novel graphene oxide reduced by adenosine 5'-monophosphate (RGO-AMP)", *Journal of Materials Chemistry A*, vol. 7, Issue 7, pp. 664-678, Royal Society of Chemistry, 2019.
23. Bharadwaj, K.K., Das, D., "Puffing in planar buoyant plumes: BiGlobal instability analysis and experiments", *Journal of Fluid Mechanics*, vol. 863, pp. 817-849, Cambridge University Press, 2019.
24. Chandra, B., Mangal, R., Das, D., Shankar, V., "Instability driven by shear thinning and elasticity in the flow of concentrated polymer solutions through microtubes", *Journal of Physical Review Fluids*, vol. 4, Issue 8, American Physical Society, 2019.
25. Chandra, B., Shankar, V., Das, D., "Onset of transition in the flow of polymer solutions through deformable tubes", *Journal of Physical of Fluids*, vol. 31, Issue 11, AIP Publishing LLC, 2019.
26. Nayak, A., Das, D., "A pseudospectral approach applicable for time integration of linearized N-S operator that removes pole singularity and physically spurious eigenmodes", *International Journal for Numerical Methods in Fluids*, vol. 91, Issue 10, pp. 473-486, 2019.
27. Giri, D. K., Sinha, M., "Robust backstepping magnetic attitude control of satellite subject to unsymmetrical mass properties", *Journal of Spacecraft and Rockets*, vol. 56, Issue 1, pp. 298-305, (IF: 1.36), AIAA, 2019.
28. Hastings, D., Tour, P. A. L., Giri, D. K., "Architectural Concept of Disaggregation of Space Systems: Application to Weather Satellites", *Journal of Spacecraft and Rockets*, (IF: 1.36), AIAA, 2019.
29. Giri, D. K., Sinha, M., "Fast terminal sliding-mode fault-tolerant attitude control of magnetically actuated satellite", *Journal of Spacecraft and Rockets*, vol. 56, Issue 5, pp. 1636-1645, (IF: 1.36), AIAA, 2019.

30. Chung, W., Giri, D. K., Son, H., "Finite-time control of multirotor UAVs under disturbances", *Journal of IEEE Access*, vol. 7, pp. 173549-173558, (IF: 3.745), IEEE, 2019.
31. Hariharan, V., & Mishra, D. P., "Static flame stability of circumferentially arranged fuel port inverse jet non-premixed flame burner", *Combustion Science and Technology*, 2019 (DOI:10.1080/00102202.2019.1611567)
32. Bharat, N. T., & Mishra, D. P., "Effect of disorderness in two-dimensional discrete adiabatic combustion waves in a heterogeneous solid medium under stable regime", *Physical Review E*, 99(6), 2019 (DOI:10.1103/PhysRevE.99.062114)
33. Mahesh, S., & Mishra, D. P., "Effect of air jet momentum on the topological features of turbulent CNG inverse jet flame", *Fuel*, 241, 2019 (DOI:10.1016/j.fuel.2018.12.089)
34. Khare, V., Srivastava, S., Kamle, S., & Kamath, G. M., "Effect of Filler Functionalization on the Thermo-Mechanical behavior of Polypropylene Nanocomposites", *Procedia Structural Integrity*, 14, 2019 (DOI:10.1016/j.prostr.2019.05.028)
35. Kumar, D., Kamle, S., Mohite, P. M., & Kamath, G. M., "A novel real-time DIC-FPGA-based measurement method for dynamic testing of light and flexible structures", *Measurement Science and Technology*, 30(4), 2019 (DOI:10.1088/1361-6501/ab01a7)
36. Zhang, J. M., Kamath, G. M., & David, N. T., "Valid post-clustering differential analysis for single-cell RNA-Seq.", *Cell Systems*, 9(4), 2019 (DOI:10.1016/j.cels.2019.07.012)
37. Sen, A., Sahoo, S.R., Kothari, M., "Circumnavigation on Multiple Circles around a Non-stationary Target with Desired Angular Spacing", *IEEE Transactions on Cybernetics*, vol. 51, Issue 1, pp. 222-232, (IF:10.387), IEEE, 2019.
38. Bhargavapuri, M.T., Shastry, A.K., Sinha, H., Sahoo, S.R., Kothari, M., "Vision-based Autonomous Tracking and Landing of a Fully-actuated Rotorcraft", *Control Engineering Practice*, vol. 89, pp. 113-129, (IF: 2.616), Elsevier, 2019.
39. Patrikar, J., Ramana, M.V., Pattanaik, A., Parwana, H., Kothari, M., "Nested Saturation based Guidance Law for Unmanned Aerial vehicles", *Journal of Dynamic Systems, Measurement and Control*, vol. 141, Issue 7, (IF: 1.521), ASME, 2019.
40. Khan, A., Panthi, R., Kumar, R., Ibrahim, M.S., "Experimental investigation of the effect of extended cowl on the flow field of planar plug nozzles", *Aerospace Science and Technology*, vol. 88, p 208-221, 2019. (doi: 10.1016/j.ast.2019.03.011)
41. Navrose, Mittal, S., "Intermittency in free vibration of a cylinder beyond the laminar regime", *Journal of Fluid Mechanics*, 870, R2, 2019. (<http://dx.doi.org/10.1017/jfm.2019.310>)
42. Navrose, Brion, V., Jacquin, L., "Transient growth in the near wake region of flow past a finite span wing", *Journal of Fluid Mechanics*, 866, 399-430, 2019. (<http://dx.doi.org/10.1017/jfm.2019.110>)
43. Mangalgiri, P.D., "Corrosion issues in Structural Health Monitoring of Aircraft", *ISSS J of Micro and Smart Systems*, V 8, pp 49-78, 2019.
44. Kumar, D., Mohite, P. M., & Kamle, S., "Dragonfly inspired nanocomposite flapping wing for micro air vehicles", *Journal of Bionic Engineering*, 16(5), 2019 (DOI:10.1007/s42235-019-0104-6)
45. Mohan, P. K., Kumar, A., & Mohite, P. M., "Development of in-house unidirectional carbon/epoxy prepregs and its characterization for aerospace applications", *Procedia Structural Integrity*, 14, 2019 (DOI:10.1016/j.prostr.2019.05.023)

46. Khechai, A., & Mohite, P. M., "Optimum design of perforated symmetric laminates using evolutionary algorithm", *Journal of Composite Materials*, 53(23), 2019 (DOI:10.1177/0021998318815324)
47. Shrivastava, S., Mohite, P. M., & Limaye, M. D., "Optimal design of fighter aircraft wing panels laminates under multi-load case environment by ply-drop and ply-migrations", *Composite Structures*, 207, 2019 (DOI:10.1016/j.compstruct.2018.09.004)
48. Sarkar, P., & Chakraborty, P., "An asynchronous integration method for accelerated finite element analysis", *Finite Elements in Analysis and Design*, 163, 2019 (DOI:10.1016/j.finel.2019.06.002)
49. Hou, J., Deng, B., Zhu, H., Lan, Y., Shi, Y., De, S., Liu, L., Chakraborty, P., Gao, F., & Peng, Q., "Magic auxeticity angle of graphene", *Carbon*, 149, 2019 (DOI: 10.1016/j.carbon.2019.04.057)
50. Chakraborty, P., & Jiang, W., "Crystal plasticity-based creep model for solution-strengthened nickel-based alloys", *International Journal of Materials and Structural Integrity*, 13(1-3), 2019 (DOI:10.1504/IJMSI.2019.100389)
51. Singh, S. S., Chakraborty, P., & Kitey, R., "Deformation characteristics of glass-filled epoxy composite under compression: Role of filler shape and volume fraction", *Polymer Composites*, 40(12), 2019 (DOI:10.1002/pc.25341)
52. Singh, S.S., Venkitanarayanan, P., Kitey, R., "Dynamic compression behavior of glass filled epoxy composites: Influence of filler shape and exposure to high temperature", *Composites-Part B*, 164, 103-115, 2019.
53. Singh, S.S., Chakraborty, P., Kitey, R., "Deformation characteristics of glass-filled epoxy composite under compression: Role of filler shape and volume fraction", *Polymer Composites*, 40(12), 4726-4741, 2019.
54. Singh, S.S., Chakraborty, P., Kitey, R., "Quasi-static compression behavior of glass filled epoxy composites", *Procedia Structural Integrity*, 14, 915-921, 2019.
55. Chawla, K., Ray-chaudhury, S., Kitey, R., "Interlaminar fracture toughness of short fiber reinforced GFRP laminates", *Procedia Structural Integrity*, 14, 571-576, 2019.
56. Singh, M.K., Kitey, R., "Filler size effect on fracture behavior of milled-fiber composites", *Procedia Structural Integrity*, 14, 475-481, 2019.
57. Singh, S.S., Kitey, R., Venkitanarayanan P., "Filler shape and volume fraction effect on dynamic compression behavior of glass filler reinforced epoxy composites", *International Journal of Materials and Structural Integrity*, 13, 81-92, 2019.
58. "Effect of post cure temperature cycle on dynamic compression behavior of glass filled epoxy composites", Singh, S.S., Kitey, R., Venkitanarayanan, P., *Mechanics of Advanced Materials and Structures*, 26(1), 100-105, 2019.
59. Ranjan, R., Unnikrishnan, S., Gaitonde, D., "A Robust Approach for Stability Analysis of Complex Flows Using High-order Navier-Stokes Solvers", *Journal of Computational Physics*, 403, pp.109076, 2019. (DOI: 10.1016/j.jcp.2019.109076)
60. Patel, K.S., Maruthi, N.H., Ranjan, R., Deshpande, S.M., Narasimha, R., "A critical comparison of DNS versus model results on an HPT turbine blade", *Journal of Aerospace Sciences and Technologies, Aeronautical Society of India*, 71, pp. 219–224, 2019.

61. Kammara K.K., Kumar, R., Singh A.K., Chinnappan, A.K., "Systematic Direct Simulation Monte Carlo Approach to Characterize the Effects of Surface Roughness on Accommodation Coefficients", *Physical Review Fluids*, 4, 123401, 2019.
62. Sharma, B., Kumar, R., "Estimation of Bulk Viscosity of Dilute Gases using a Nonequilibrium Molecular Dynamics Approach", *Physical Review E*, 100, 013309, 2019.
63. Peddakotla, S.A., Kammara, K.K., Kumar, R., "Molecular Dynamics Simulation of Particle Trajectory for the Evaluation of Surface Accommodation Coefficients", *Microfluidics and Nanofluidics*, 23, 79, 2019.
64. Chikkam, N.G., Kumar, S., "Flow past a rotating hydrophobic/non-hydrophobic circular cylinder in a flowing soap film", *Physical Review Fluids*, 4, 114802, 2019.
65. Garai, P., Verma, S., Kumar, S., "Visualization of Shocks in Granular Media", *Journal of Visualization* 22:729-739, 2019.
66. Sahu, T. R., Furquan, M., Mittal, S., "Numerical study of flow-induced vibration of a circular cylinder with attached flexible splitter plate at low Re", *Journal of Fluid Mechanics*, vol. 880, pp. 551-593, 2019.
67. Pandi, S. S. J., Mittal, S., "Wake transitions and laminar separation bubble in the flow past an Eppler 61 airfoil", vol. 31, Issue 11, AIP Publishing LLC, 2019.
68. Sahu, T. R., Furquan, M., Jaiswal, Y., Mittal, S., "Flow-induced vibration of a circular cylinder with rigid splitter plate", *Journal of Fluids and Structures*, vol. 89, pp. 244-256, Academic Press, 2019.
69. Mittal, S., "Intermittency in free vibration of a cylinder beyond the laminar regime", *Journal of Fluid Mechanics*, vol. 870, 2019.
70. Chopra, G., Mittal, S., "Drag coefficient and formation length at the onset of vortex shedding", *Physics of Fluids*, vol. 31, Issue 1, AIP Publishing LLC, 2019.
71. Shah, K., Shakya, S., Mittal, S., "Aerodynamic forces on projectiles used in various sports", *Physics of Fluids*, vol. 31, Issue 1, AIP Publishing LLC, 2019.
72. Singh, G., Mariappan, S., "Experimental investigation on the route to vortex-acoustic lock-in phenomenon in bluff body stabilized combustors", *Combustion Science and Technology*, 1-30 2019. (doi:10.1080/00102202.2019.1700961)
73. Britto, A., Mariappan, S., "Lock-in phenomenon of vortex shedding in oscillatory flows: an analytical investigation pertaining to combustors", *Journal of Fluid Mechanics*, 872:115–146, 2019. (doi:10.1017/jfm.2016.458)
74. Seo, G., Kim, Y., Saderla, S., "Kalman-filter based online system identification of fixed-wing aircraft in upset condition", *Journal of Aerospace Science and Technology*, vol. 86, pp. 307-317, 2019.
75. Saderla, S., Dhayalan, R., Singh, K., Ghosh A. K., "Longitudinal and lateral aerodynamic characterisation of reflex wing Unmanned Aerial Vehicle from flight tests using Maximum Likelihood, Least Square and Neural Gauss Newton methods", *Journal of the Aeronautical Journal*, vol. 123, Issue 1269, pp. 1807-1839, 2019.
76. Mukhopadhyay T., Adhikari S., Alu A., "Theoretical limits for negative elastic moduli in subacoustic lattice materials", *Physical Review B*, 99 094108, 2019.
77. Mukhopadhyay T., Adhikari S., Batou A., "Frequency domain homogenization for the viscoelastic properties of spatially correlated quasi-periodic lattices", *International Journal of Mechanical Sciences*, 150 784 - 806, 2019.

78. Naskar S., Mukhopadhyay T., Sriramula S., "Spatially varying fuzzy multi-scale uncertainty propagation in unidirectional fibre reinforced composites", *Composite Structures*, 209 940-967, 2019.
79. Kumar R. R., Mukhopadhyay T., Naskar S., Pandey K. M., Dey S., "Stochastic low-velocity impact analysis of sandwich plates including the effects of obliqueness and twist", *Thin-Walled Structures*, 145 106411, 2019.
80. Mukhopadhyay T., Adhikari S., Alu A., "Probing the frequency-dependent elastic moduli of lattice materials", *Acta Materialia*, 165 654-665, 2019.
81. Karsh P. K., Mukhopadhyay T., Chakraborty S., Naskar S., Dey S., "A hybrid stochastic sensitivity analysis for low-frequency vibration and low-velocity impact of functionally graded plates", *Composites Part B: Engineering*, 176 107221, 2019.
82. Kumar R. R., Mukhopadhyay T., Pandey K. M., Dey S., "Stochastic buckling analysis of sandwich plates: The importance of higher order modes", *International Journal of Mechanical Sciences*, 152 630-643, 2019.
83. Dey S., Mukhopadhyay T., Naskar S., Dey T. K., Chalak H. D., Adhikari S., "Probabilistic characterization for dynamics and stability of laminated soft core sandwich plates", *Journal of Sandwich Structures & Materials*, 21(1) 366 - 397, 2019.
84. Karsh P. K., Mukhopadhyay T., Dey S., "Stochastic low-velocity impact on functionally graded plates: Probabilistic and non-probabilistic uncertainty quantification", *Composites Part B: Engineering*, 159 461- 480, 2019.
85. Sharma, P., Jain, N., Arghode, V. K., "Investigation of a Low Emission Liquid Fuelled Reverse Crossflow Combustor", *ASME Journal of Energy Resources Technology*, vol. 141, p 102202-1-9, 2019.
86. Chinnappan, A., Kumar, R., Arghode, V. K., Myong, R. S., "Transport Dynamics of an Ellipsoidal Particle in Free Molecular Gas Flow Regime", *Physics of Fluids*, vol. 31, p 037104-1-15, 2019.
87. Gupta, S. K., Arghode, V. K., "Investigation of a Reverse-Cross Flow Combustor with varying Fuel Injection Momentum", *Thermal Science and Engineering Process*, vol. 10, p 232-244, 2019.