

JOURNAL OF FLOW VISUALIZATION AND IMAGE PROCESSING

INDEX VOLUME 27, 2020

Page Range of Issues:

Issue 1: v-115; Issue 2: 117-231; Issue 3: 233-357; Issue 4: 359-451

Issue 1

**Special Issue: 7th International and 45th National
Fluid Mechanics and Fluid Power Conference**

Guest Editors: Atul Srivastava, Sridhar Balasubramanian, & K. Muralidhar

**Preface: 7th International and 45th National Fluid Mechanics
and Fluid Power Conference**

A. Srivastava, S. Balasubramanian, & K. Muralidhar

v

Effect of Single and Multiple Bubbles on a Thin Vortex Ring

S. Biswas & R.N. Govardhan

1

PIV Study of the Dynamics of a Forced Plume in a Stratified Ambient

H.N. Mirajkar, P. Mukherjee, & S. Balasubramanian

29

**Flow Past Stationary and Oscillating Airfoil at a Low Reynolds Number
Using Sharp Interface Immersed-Boundary Approach**

V. Ramanan & S.R. Chakravarthy

47

**Experimental Study of the Complex Vortical Flow Structures
over a Flying Wing Configuration**

V. Kumar, A.C. Mandal, & K. Poddar

71

**Real-Time Imaging and Visualization of Solutal Plume during Bottom-
Cooled Solidification**

I. Thakur, S. Karagadde, & A. Srivastava

89

Issue 2

**Special Issue: 7th International and 45th National
Fluid Mechanics and Fluid Power Conference**

Guest Editors: Atul Srivastava, Sridhar Balasubramanian, & K. Muralidhar

Vortex Formation in a Low Aspect Ratio Synthetic Jet

J. Gupta, S.S.G. Satish, & A.K. Saha

117

**Effects of Size and Position of Upstream Cylinder on Wake Transition in
Flow past Two In-Line Square Cylinders**

P. Kumar & S. Tiwari

143

**Study of Shock Wave-Boundary Layer Interaction Using High-Speed
Schlieren Imaging**

J.N. Murugan & R.N. Govardhan

185

**Phase Doppler Particle Analyzer (PDPA) Characterization and Modeling
of Sprays from Orthogonally Interacting Water and Air Jets**

A. Mallik, T.P. Sarma, A. Roy, M.V. Panchagnula, & S. Seshadri

199

Vortex Ring Below a Spreading Alcohol Film on Water

A. Pant & B.A. Puthenveettil

219

Issue 3

Special Issue: 7th International and 45th National Fluid Mechanics and Fluid Power Conference

Guest Editors: Atul Srivastava, Sridhar Balasubramanian, & K. Muralidhar

Wake Modification of a Forced Circular Cylinder with an Attached Filament	233
<i>P. Sunil, S. Kumar, & K. Poddar</i>	
Behavior of Wall Shear Stress Near Carotid Artery Bifurcation at Elevated Pulse Rates	249
<i>S. Uttam, P.M. Khan, M.I. Alam, & S. Roy</i>	
Wake Sensitivity of Flow Over a Square Cylinder with Respect to Length of An Attached Flexible Wake Splitter	269
<i>K.R. Sharma & S. Dutta</i>	
Investigation of LPG Sooting Diffusion Flame by Rainbow Schlieren Deflectometry	297
<i>G.M. Nayak, D. Sellan, R. Murugan, S. Balusamy, S. Banerjee, P.S. Kolhe</i>	
Wave Breaking and Swirls in a Circular Cylindrical Container during Lateral Sloshing	319
<i>D.K. Raja & S.P. Das</i>	
Nonintrusive Experimental Study of Natural Convection in an Open Square Cavity at Different Inclinations	333
<i>V. Kishor, R. Kumar, S. Singh, & A. Srivastava</i>	

Issue 4

Developing Particle Image Velocimetry Software Based on a Deep Neural Network	359
<i>W. Majewski, R. Wei, & V. Kumar</i>	
Multi-Scale Safety Protective Gear Detection under Power Construction Scene	377
<i>B. Yang, H. Xie, H. Li, N. Li, A. Liu, Z. Ren, K. Ye, R. Zhu, & X. Xiang</i>	
Interaction Characteristics of Multiple Sweeping Jet Actuators in Series	335
<i>A. Gururaj, R.A. Kulkarni, K. Poddar, S. Kumar</i>	
Characteristics of Solidification-Driven Double-Diffusive Layers in Mixtures	427
<i>V. Kumar, A. Srivastava, & S. Karagadde</i>	
Index, Volume 27, 2020	453

**JOURNAL OF FLOW VISUALIZATION
AND IMAGE PROCESSING**
AUTHOR INDEX VOLUME 27, 2020

Page Range of Issues:

Issue 1: v-115; Issue 2: 117-231; Issue 3: 233-357; Issue 4: 359-451

- | | | |
|--------------------------------|-----------------------------|------------------------------------|
| Alam, M.I., 249 | Kumar, V., 71, 359,
427 | Roy, A., 199
Roy, S., 249 |
| Balasubramanian, S.,
vi, 29 | Li, H., 377 | Saha, A.K., 117 |
| Balusamy, S., 297 | Li, N., 377 | Sarma, T.P., 199 |
| Banerjee, S., 297 | Liu, A., 377 | Satish, S.S.G.,
117 |
| Biswas, S., 1 | Majewski, W., 359 | Sellan, D., 297 |
| Das, S.P., 319 | Mallik, A., 199 | Seshadri, P.K., 47 |
| De, A., 47 | Mandal, A.C., 71 | Seshadri, S., 199 |
| Dutta, S., 269 | Mirajkar, H.N., 29 | Sharma, K.R., 269 |
| Govardhan, R.N., 1,
185 | Mukherjee, P., 29 | Singh, S., 333 |
| Gupta, J., 117 | Muralidhar, K., vi | Srivastava, A., v, 89,
333, 427 |
| Gururaj, A., 397 | Murugan, J.N., 185 | Sunil, P., 233 |
| Karagadde, S., 89,
427 | Murugan, R., 297 | Thakur, I., 89 |
| Khan, P.M., 249 | Nayak, G.M., 297 | Tiwari, S., 143 |
| Kishor, V., 333 | Panchagnula, M.V.,
199 | Uttam, S., 249 |
| Kolhe, P.S., 297 | Pant, A., 219 | Wei, R., 359 |
| Kulkarni, R.A., 397 | Poddar, K., 71, 233,
397 | Xiang, X., 377 |
| Kumar, P., 143 | Puthenveettil, B.A.,
219 | Xie, H., 377 |
| Kumar, R., 333 | Raja, D.K., 319 | Yang, B., 377 |
| Kumar, S., 233,
397 | Ren, Z., 377 | Ye, K., 377 |
| | | Zhu, R., 377 |

JOURNAL OF FLOW VISUALIZATION AND IMAGE PROCESSING

SUBJECT INDEX VOLUME 27, 2020

Page Range of Issues:

Issue 1: v-115; Issue 2: 117-231; Issue 3: 233-357; Issue 4: 359-451

- Brunt-Väisälä frequency, 29
bubble, 1
buoyancy frequency, 29
flow visualization, 117
hot film anemometry, 233
immersed-boundary method, 47
natural convection, 89
arterial flow, 249
bifurcation, 319
binary mode, 143
boundary layer, 185
bubble breakup, 1
bubble-swarm, 1
bubbly turbulent flow, 1
buoyancy-driven convection, 427
CFD, 249
chaotic wave, 319
Coanda effect, multiple jets, 397
CTA, 269
deep convolutional neural network, 377
deep neural networks, 359
delta wing, 71
double-diffusive layer, 427
drag reduction, 1
droplet diameter distribution, 199
droplet diameter-velocity correlation, 199
drops, 219
dynamic stall, 47
enstrophy, 1
estimation of fluid motion, 359
field extension, 47
filament, 233
flexible wake splitter, 269
flow separation, 185
flow visualization, 269
fluidic oscillators, 397
fluid-structure interaction, 269
flying wing configuration, 71
forced plume, 29
forward-facing step, 185
high-speed schlieren, 185
Hilbert spectra, 143
interferometry, 89
inline oscillation, 47
instability, 249
interaction height, 397
interferometry, 333, 427
jet in cross flow, 199
jet, 29
laminar unsteady diffusion flame, 297
laser induced fluorescence, 233
lateral sloshing, 319
leading edge vortex, 47, 71
marginal spectra and degree of stationarity, 143
measurements, 89
multi-scale object detection, 377
natural convection, 333
nonintrusive, 89
onset of planar vortex
open square cavity, 333
particle image velocimetry, 29, 117, 233, 359, 397, 427
PDPA, 199
pitching motion, 47
PIV, 219, 269
plume, 89
power construction, 377
proper orthogonal decomposition, 297
rainbow schlieren
deflectometry, 297
reattachment mode, 143
residual module, 377
reverse von Kármán vortex street, 233
rotationally oscillating cylinder, 233
sharp interface, 47
shedding, 143
shock oscillation, 185
shock wave boundary layer interaction, 185
single slender body, 143
small object detection, 377
smoke visualization, 333
solidification, 427
sooting LPG flame, 297
spreading, 219
square cylinder, 269
stenosis, 249
stratification, 29
surface tension, 219
swirl, 319
synthetic jet, 117
thrust, 233
trailing edge vortex, 47
turbulent kinetic energy, 29
unmanned air vehicle, 71
volume flux distribution, 199
von Kármán vortex street, 233
vortex breakdown, 71
vortex ring, 1, 117
vortices, 219
vorticity, 1
wall shear stress, 249
wave breaking, 319