

Complete Publications list

1. Dynamics of rigid particles in a confined flow of viscoelastic and strongly shear-thinning fluid at very small Reynolds numbers, S. Hazra, A. Nath, S. K. Mitra, and A. K. Sen, **Physics of Fluids**, 2021.
2. Combined acoustic relocation and acoustophoretic migration for particle transfer between co-flowing fluids in a microchannel, A. Nath, L. Malik, and A. K. Sen, **Physical Review Fluids**, 2021.
3. Direct and rapid measurement of hydrogen peroxide in human blood using a microfluidic device, Gaikwad, R., Thangaraj, P.R. & Sen, A.K., **Scientific Reports**, 11, 2960 (2021).
4. Effect of surface energy and roughness on cell adhesion and growth - facile surface modification for enhanced cell culture, B. Majhy, P. Priyadarshini and A. K. Sen, **RSC Advances**, 2021.
5. Coalescence of Droplets in a Microwell Driven by Surface Acoustic Waves, A. Sudeepthi, A. Nath, L. Yeo, and A. K. Sen, **Langmuir**, 37, 4, 1578–1587, 2021.
6. Attraction and Repulsion between Liquid Droplets over a Liquid-impregnated Surface, B. Majhy, S. K. Jain and A. K. Sen, **J. Phys. Chem. Lett.** 11, 23, 10001–10006, 2020.
7. Buckling and snapping of a thin polymeric membrane exposed to a solvent drop, R. A. Samy, N. S. Satpathi, and A. K. Sen, **EPL (Europhysics Letters)**, 132 44001, 2020.
8. Continuous electrical lysis of cancer cells in a microfluidic device with passivated interdigitated electrodes, K. Pandian, P. Ajanth, S. Z. Hoque, A. Sudeepthi, and A. K. Sen, **Biomicrofluidics**, 14, 064101 (2020).
9. Optomicrofluidic device for detection and isolation of drop encapsulated target cells in single-cell format, R. Gaikwad and A. K. Sen, **Analyst**, 146, 95, 2021.
10. Shape evolution of drops on surfaces of different wettability gradients, I. Chowdhury, P. S. Mahapatra, A. K. Sen, **Chemical Engineering Science**, 229, 116136, 2021.
11. Cross-stream migration of droplets in a confined shear-thinning viscoelastic flow: role of shear-thinning induced lift, S. Hazra, S. K. Mitra and A. K. Sen, **Physics of Fluids**, 32, 092007, 2020.
12. Microfluidics technology for label-free isolation of circulating tumor cells, P. Ajanth, A. Sudeepthi, A. K. Sen, **Journal of The Institution of Engineers (India): Series C**, 101,1051–1071, 2020.
13. Interparticle acoustic radiation force between a pair of spherical particles in a liquid exposed to a standing bulk acoustic wave, S. Z. Hoque and A. K. Sen, **Physics of Fluids**, 2020.
14. Trapping and coalescence of diamagnetic aqueous droplets using negative magnetophoresis, S. K. Jain, U. Banerjee, and A. K. Sen, 36, 21, 5960–5966, **Langmuir**, 2020.
15. Understanding of the role of dilution on evaporative deposition patterns of blood droplets over hydrophilic and hydrophobic substrates, R. Iqbal, A. Q. Shen and A. K. Sen, **J Colloid & Interface Science**, 2020.
16. Cassie-Wenzel wetting transition on nanostructured superhydrophobic surfaces induced by surface acoustic waves, A. Sudeepthi, L. Yeo and A. K. Sen, **Applied Physics Letters**, 2020
17. Evaporation-induced transport of a pure aqueous droplet by an aqueous mixture droplet, B. Majhy and A. K. Sen, **Physics of Fluids**, 2020.
18. Understanding wetting dynamics and stability of aqueous droplet over superhydrophilic spot surrounded by superhydrophobic surface, B. Majhy, V. P. Singh and A. K. Sen, **J Colloid and Interface Science**, 2020.
19. Cross-stream migration and coalescence of droplets in a microchannel co-flow using magnetophoresis, U. Banerjee, C. Mandal, S. Jain and A. K. Sen, **Physics of Fluids**, 2019.
20. Acoustic behavior of a dense suspension in an inhomogeneous flow in a microchannel, A. Nath and A. K. Sen, **Physical Review Applied**, 2019.
21. Lateral migration of viscoelastic droplets in a viscoelastic confined flow: role of discrete phaseviscoelasticity, S. Hazra, S. K. Mitra, and A. K. Sen, **Soft Matter**, 2019.
22. Experimental investigation of flame propagation in a meso-combustor, R. Dutta Roy, S. R. Chakravarthy, A. K. Sen, **J Power and Energy**, 2019.
23. Continuous droplet coalescence in a microchannel coflow using bulk acoustic wave, E. Hemachandran, T. Laurell, and A. K. Sen, **Physical Review Applied**, 2019.
24. Elastocapillarity-based transport of liquids in flexible confinements and over soft substrates, R. A. Samy, Pearlson P. A. Suthanthiraraj, D. George, R. Iqbal and A. K. Sen, **Microfluidics and Nanofluidics**, 2019.
25. Transport of a sessile aqueous droplet over spikes of oil based ferrofluid in presence of a magnetic field, C. Mandal, U. Banerjee, A. K. Sen, **Langmuir**, 2019.
26. Electronically-tuned Triarylmethine Scaffold for Fast and Continuous Monitoring of H₂S Levels in Biological Samples, K Ramshad, T. T. Divya, P. P. Archana, A. K. Sen, C. Lakshmi, K. M. Muraleedharan, **Analyst**, 2019.
27. Localized surface plasmon resonance (LSPR) biosensor based on thermally annealed silver nanostructures with on-chip blood-plasma separation for the detection of dengue non-structural protein NS1 antigen, Pearlson P. S., A. K. Sen, **Biosensors and Bioelectronics**, 2019.
28. Substrate stiffness affects particle distribution pattern in a drying suspension droplet, R. Iqbal, A. Matsumoto, A. Sudeepthi, A. Q. Shen, A. K. Sen, **Applied Physics Letters**, 2019. *Selected as featured and cover article.*

29. Droplet encapsulation of particles in different regimes and sorting of particle-encapsulating-droplets from empty droplets, K. S. Jayaprakash, A. K. Sen, **Biomicrofluidics**, 2019.
30. Aggregation of a dense suspension of particles in a microwell using surface acoustic wave microcentrifugation, A. Sudeepthi, A. K. Sen, L. Yeo, **Microfluidics and Nanofluidics**, 2019.
31. Self-Driven Droplet Transport: Effect of Wettability Gradient and Confinement, I. Chowdhury, P. S. Mahapatra, and A. K. Sen, **Physics of Fluids**, 2019.
32. Elastocapillary flow driven lab-on-a-membrane device based on differential wetting and sedimentation effect for blood plasma separation, A. Samy, A. K. Sen, **J Micromechanics and Microengineering**, 2019.
33. Relocation of coflowing immiscible liquids under acoustic field in a microchannel by E. Hemachandran, S. Karthick, T. Laurell and A. K. Sen, **EPL (Europhysics Letters)**, 2019.
34. Non-inertial lift induced migration for label-free sorting of cells in a co-flowing aqueous two-phase system, S. Hazra, K. S. Jayaprakash, K. Pandian, A. Raj, S. K. Mitra and A. K. Sen, **Analyst**, 2019.
35. Rapid measurement of hydrogen sulphide in human blood plasma using a microfluidic method, R. Karunya, K. S. Jayaprakash, R. Gaikwad, P. Sajeesh, K. Ramshad, K. M. Muraleedharan, M. Dixit, P. Thangaraj and A. K. Sen, **Scientific Reports**, 2019.
36. Facile fabrication and mechanistic understanding of a transparent reversible superhydrophobic - superhydrophilic surface, B. Majhy, R. Iqbal and A. K. Sen, **Scientific Reports**, 2018.
37. Evaporation and morphological patterns of bi-dispersed colloidal droplets on hydrophilic and hydrophobic surfaces, R. Iqbal, B. Majhy, A. Q. Shen and A. K. Sen, **Soft Matter**, 2018.
38. Pressure driven flow through PDMS based flexible microchannels and their applications in microfluidics, A. Raj, Pearson P. A. Suthanthiraraj, A. K. Sen, **Microfluidics and Nanofluidics**, 2018.
39. Acoustic impedance based label-free isolation of circulating tumour cells from blood using acoustophoresis, S. Karthick, P. N. Pradeep, P. Kanchana and A. K. Sen, **Lab on Chip**, 2018.
40. Dynamics of capillary flow in an open superoleophilic microchannel and its application to sensing of oil, B. Majhy, R. Iqbal, R. Gaikwad, A. K. Sen, **Microfluidics and Nanofluidics**, 2018.
41. Dynamics of aqueous ferrofluid droplets at coflowing liquid-liquid interface under a non-uniform magnetic field, U. Banerjee, A. Raj, A. K. Sen, **Applied Physics Letters**, 2018.
42. Self-transport and manipulation of aqueous droplets on oil-submerged diverging groove, S. Dhiman, K. S. Jayaprakash, R. Iqbal, A. K. Sen, **Langmuir**, 2018.
43. Improved understanding of acoustophoresis and development of an acoustofluidic device for blood plasma separation, S. Karthick, A. K. Sen, **Physical Review Applied**, 2018.
44. Entry and passage behavior of biological cells in a constricted compliant microchannel, A. Raj, A. K. Sen, **RSC Advances**, 8, 20884 - 20893, 2018
45. Shape evolution and splitting of ferrofluid droplets on a hydrophobic surface in presence of magnetic field, U. Banerjee, A. K. Sen, **Soft Matter**, 14, 2915-2922, 2018.
46. Continuous splitting of aqueous droplets at the interface of co-flowing immiscible oil streams in a microchannel, K. S. Jayaprakash, A. K. Sen, **Soft Matter**, 14, 725-733, 2018.
47. Droplet demulsification using ultra-low voltage based electro-coalescence, A. Srivastava, S. Karthick, K. S. Jayaprakash, A. K. Sen, **Langmuir**, 34 (4), 1520–1527, 2018.
48. Improved understanding of the acoustophoretic focusing of dense suspension in a microchannel, S. Karthick and A. K. Sen, **Physical Review E**, 96, 052606, 2017.
49. A combined experimental and theoretical approach towards mechano-phenotyping of biological cells using a constricted microchannel, A. Raj and A. K. Sen, **Lab on Chip**, 17 (21), 3704-3716, 2017.
50. Experimental investigation of flame propagation and stabilization in a meso-combustor with sudden expansion, R. Dutta Roy, S. R. Chakravarthy, A. K. Sen, **Experimental Thermal and Fluid Science**, 90, 299-309, 2017.
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54. Dynamics of a water droplet over a sessile oil droplet: compound droplets satisfying a Neumann condition, R. Iqbal, S. Dhiman, A. K. Sen, A. Shen, **Langmuir**, 33(23), 5713, 2017.
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4. M.S. Maria, T.S. Chandra and A.K. Sen, A Microfluidic device for cell concentration and blood cell- plasma separation, 42nd National conference on fluid mechanics and fluid power (FMFP), December 14-16, 2015), NIT Surathkal.
5. Rahul Dutta Roy, S.R. Chakravarthy, T. M. Muruganandam, Ashis Kumar Sen, Flame dynamics in a sudden expansion meso-scale combustor, 10th ASPACC – July 19-22, 2015 – Beijing
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