

## List of publication of Dr. Deepak Kumar Mandal

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### Publications in International Journals:

35. Somen Kumar Dutta, Deepak Kumar Mandal\*; [An emulsion drop's impact on an inclined mesh: How far is the penetration possible?](#) **Physics of Fluids** 37 (2025) 011706 <https://doi.org/10.1063/5.0248645> **Editor's pick.**
34. Aadil Kureshee, S. Narayanan\*, Deepak Kumar Mandal\*; [Acoustic-induced flow on the evaporation dynamics of twin drops;](#) **International Journal of Multiphase Flow** 183 (2025) 105070 (1-10) <https://doi.org/10.1016/j.ijmultiphaseflow.2024.105070>
33. Aadil Kureshee, S. Narayanan, Deepak Kumar Mandal\*; [How does the placement of an acoustic source influence a drop's evaporation?](#) **Journal of Flow Visualization and Image Processing** (2024) **Accepted.**
32. Aadil Kureshee, N. K. Jha, Vikram Singh, R. N. Hota, S. Narayanan\*, Deepak Kumar Mandal \*; [Effect of single and multiple acoustic frequencies on the atomization of a spray;](#) **Physics of Fluids** 36 (2024) 122102 <https://doi.org/10.1063/5.0243668>
31. Somen Kumar Dutta, Deepak Kumar Mandal\*; [How does an emulsion drop's viscosity influence its impact on various meshes?](#) **Physics of Fluids** 36 (2024) 062109 (1-13) <https://doi.org/10.1063/5.0208029>
30. Kartika Chandra Tripathy, Md. Sirajullah, Deepak Kumar Mandal\*, Ajay Bhandari\*; [Delineating the effects of morphological changes on retinal hemodynamics in diabetic human retinas: An invitro investigation;](#) **Physics of Fluids** 36 (2024) 011912 <https://doi.org/10.1063/5.0176806> **Featured Article.**
29. Aadil Kureshee, Deepak Kumar Mandal\*, S. Narayanan\*; [Twin bi-component drops' evaporation in an acoustic field: The amplitude influence;](#) **Physics of Fluids** 35 (2023) 112112 <https://doi.org/10.1063/5.0173579>
28. Suraj Prasad, Subhramanian Narayanan, Deepak Kumar Mandal\*; [Bi-component drop's evaporation: Effect of acoustics and hot surrounding;](#) **Heat Transfer Engineering** (2023) **Accepted.** <https://doi.org/10.1080/01457632.2024.2325276>
27. Biplab Kumar Roy, Deepak Kumar Mandal, Amitava Mandal\*; [Investigation of droplet impact dynamics on textured cylindrical hydrophobic surfaces;](#) **Colloids and Surfaces A: Physicochemical and Engineering Aspects** 680 (2023) 132674 <https://doi.org/10.1016/j.colsurfa.2023.132674>
26. Aadil Kureshee, S. Narayanan\*, Deepak Kumar Mandal\*; [Evaporation of twin drops: Effect of acoustics and spacing;](#) **Physics of Fluids** 35 (2023) 032103 (1-11) <https://doi.org/10.1063/5.0137944>
25. Deepak Kumar, Mangal Singh Sisodiya, Deepak Kumar Mandal, Vivek Bajpai\*; [Maglev micro-EDM: Feasibility and performance on Inconel 625;](#) **CIRP Journal of Manufacturing Science and Technology** 40 (2023) 155–166 <https://doi.org/10.1016/j.cirpj.2022.11.012>
24. Vikas Kumar, Deepak Kumar Mandal\*; [Impact of Jatropa – diesel blend drops on a heated surface;](#) **Heat Transfer Engineering** 44 (2023) 1286–1301 <https://doi.org/10.1080/01457632.2022.2127050>
23. Lukesh Kumar Mahato, Deepak Kumar Mandal\*; [A sessile drop facing a shear flow: Surrounding flow dynamics during the deformation of the drop;](#) **International Journal of Multiphase Flow** 147 (2022) 103911 (1-15) <https://doi.org/10.1016/j.ijmultiphaseflow.2021.103911>

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22. Amrit Kumar, Deepak Kumar Mandal\*; [Impact of compound drops on a plane solid: Role of the core diameter](https://doi.org/10.1615/AtomizSpr.2021038825); **Atomization and Sprays** 32 (2) (2022) 1–18 <https://doi.org/10.1615/AtomizSpr.2021038825>
21. Amrit Kumar, Deepak Kumar Mandal\*; [Impact of emulsion drops on a plane solid: Effect of composition and wall temperature](https://doi.org/10.1007/s00231-021-03129-3); **Heat and Mass Transfer** 58 (2022) 505–529 <https://doi.org/10.1007/s00231-021-03129-3>
20. Vikas Kumar, Amrit Kumar, Deepak Kumar Mandal\*; [Receding dynamics of Jatrophha straight vegetable oil drops impacting a heated surface](https://doi.org/10.1080/01457632.2021.1919974); **Heat Transfer Engineering** 43 (2022) 958–973 <https://doi.org/10.1080/01457632.2021.1919974>
19. Lukesh Kumar Mahato, Deepak Kumar Mandal\*; [Role of resisting shear on the shedding drops](https://doi.org/10.1016/j.colcom.2021.100388); **Colloid and Interface Science Communications** 41 (2021) 100388 (1-8) <https://doi.org/10.1016/j.colcom.2021.100388>
18. Ramesh Kumar Singh, Lukesh Kumar Mahato, Deepak Kumar Mandal\*; [Airflow assisted impact of drops of various viscosities: The role of viscous dissipation, normal imposed pressure, and shear flow of air](https://doi.org/10.1021/acs.langmuir.1c01367); **Langmuir** 37 (2021) 9504–9517. <https://doi.org/10.1021/acs.langmuir.1c01367>
17. Amrit Kumar, Deepak Kumar Mandal\*; [Residence time of emulsion drops on an inclined surface above Leidenfrost temperature](https://doi.org/10.1615/AtomizSpr.2020035029); **Atomization and Sprays** 31 (1) (2021) 1–10 <https://doi.org/10.1615/AtomizSpr.2020035029>
16. Vartika Singh, Suraj Prasad, Ankit Das, S. Narayanan, Deepak Kumar Mandal\*; [Effect of spacing on evaporation and internal circulation of two identical drops](https://iopscience.iop.org/article/10.1209/0295-5075/131/44001); **Europhysics Letters** 131 (2020) 44001 (1-7) <https://iopscience.iop.org/article/10.1209/0295-5075/131/44001>
15. Lukesh Kumar Mahato, Deepak Kumar Mandal\*; [Pressure distribution and eddies at the periphery of a drop about to shed due to water shear-flow](https://doi.org/10.1063/5.0002921); **Physics of Fluids** 32 (2020) 052102 (1-13) <https://doi.org/10.1063/5.0002921>
14. Suraj Prasad, Deepak Kumar Mandal\*, S. Narayanan\*; [On the suppression of oscillatory circulation inside an evaporating bi-component drop through acoustic streaming](https://doi.org/10.1016/j.ijmultiphaseflow.2020.103314); **International Journal of Multiphase Flow** 129 (2020) 103314 (1-14) <https://doi.org/10.1016/j.ijmultiphaseflow.2020.103314>
13. Amit Kumar, Amitava Mandal\*, Amit Rai Dixit, Deepak Kumar Mandal; [Quantitative analysis of bubble and spark gap at different dielectric conditions of EDM process](https://doi.org/10.1007/s00170-020-05189-x); **The International Journal of Advanced Manufacturing Technology** 107 (2020) 3065–3075 <https://doi.org/10.1007/s00170-020-05189-x>
12. Ramesh Kumar Singh, Deepak Kumar Mandal\*; [Air assisted impact of drops: The effect of surface wettability](https://doi.org/10.1016/j.ijmultiphaseflow.2020.103241); **International Journal of Multiphase Flow** 126 (2020) 103241 (1-10) <https://doi.org/10.1016/j.ijmultiphaseflow.2020.103241>
11. Amrit Kumar, Deepak Kumar Mandal\*; [Influence of the surface temperature on the spreading and receding dynamics of an impacting biodiesel drop](https://doi.org/10.1007/s00231-019-02717-8); **Heat and Mass Transfer** 56 (2020) 445–457 <https://doi.org/10.1007/s00231-019-02717-8>
10. Amrit Kumar, Deepak Kumar Mandal\*; [Impact of emulsion drops on a solid surface: The effect of viscosity](https://doi.org/10.1063/1.5119017); **Physics of Fluids** 31 (2019) 102106 (1-18) <https://doi.org/10.1063/1.5119017>
9. Ramesh Kumar Singh, Deepak Kumar Mandal\*; [Air-assisted impact of water drops on a surface](https://doi.org/10.1007/s00707-019-02438-3); **Acta Mechanica** 230 (2019) 3171–3182 <https://doi.org/10.1007/s00707-019-02438-3>

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8. Suraj Prasad, S. Narayanan\*, Deepak Kumar Mandal\*; [Acoustic induced flow around an evaporating drop and its influence on internal circulation](#); **International Journal of Multiphase Flow** 116 (2019) 91-99  
<https://doi.org/10.1016/j.ijmultiphaseflow.2019.04.012>
7. Amrit Kumar, Deepak Kumar Mandal\*; [Oscillatory circulation inside evaporating methanol-water drops](#); **International Journal of Multiphase Flow** 102 (2018) 130–137 <https://doi.org/10.1016/j.ijmultiphaseflow.2018.02.006>
6. Amrit Kumar, Suraj Prasad, Priya Pal, S. Narayanan, Deepak Kumar Mandal\*; [Circulation inside a methanol – water drop evaporating in a heated atmosphere](#); **Colloid and Interface Science Communications** 24 (2018) 82–86  
<https://doi.org/10.1016/j.colcom.2018.04.003>
5. Deepak Kumar Mandal, Antonio Criscione, C. Tropea, A. Amirfazli\*; [Shedding of water drops from a surface under icing conditions](#); **Langmuir** 31 (2015) 9340–9347 <http://dx.doi.org/10.1021/acs.langmuir.5b02131>
4. I. V. Roisman\*, Antonio Criscione, C. Tropea, Deepak Kumar Mandal, A. Amirfazli; [Dislodging a sessile drop by a high-Reynolds-number shear flow at subfreezing temperatures](#); **Physical Review E** 92 (2015) 023007  
<http://dx.doi.org/10.1103/PhysRevE.92.023007>
3. Deepak Kumar Mandal, Shamit Bakshi\*; [Internal circulation in a single droplet evaporating in a closed chamber](#); **International Journal of Multiphase Flow** 42 (2012) 42-51 <http://dx.doi.org/10.1016/j.ijmultiphaseflow.2012.01.008>
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<http://dx.doi.org/10.1016/j.jcis.2012.04.046>
1. Mopuru Deepa Raj, Deepak Kumar Mandal, S. Navaneethakrishnan, Shamit Bakshi\*; [Measurement of the surface concentration \(liquid\) of an evaporating multicomponent droplet using pendant droplet method](#); **Experiments in Fluids** 48 (2010) 715-719 DOI: 10.1007/s00348-009-0805-4

### Publications in International Conferences:

#### • 2024

20. Rohit Kumar Verma, Deepak Kumar Mandal\*; [Circulation inside evaporating emulsion drops](#); **The 5<sup>th</sup> International Conference on Energy and Power (ICEP2024)**, December 4-6, 2024, Bali, Indonesia.
19. Ankit Kumar, Amrit Kumar, Deepak Kumar Mandal\*; [Impact of a kerosene drop on a glass surface](#); **Proceedings of the 2<sup>nd</sup> International Conference on Fluid, Thermal and Energy Systems**, June 6-8, 2024, NIT Calicut, Kerala, India.

#### • 2023

18. Aadil Kureshee, S. Narayanan, Deepak Kumar Mandal\*; [How does the placement of an acoustic source influence a drop's evaporation?](#) **Proceedings of the 10<sup>th</sup> International and 50<sup>th</sup> National Conference on Fluid Mechanics and Fluid Power (FMFP)**, (FMFP2023–MTF–455) Dec 20-22, 2023, IIT Jodhpur, India.

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17. N. K. Jha, Rahul Kumar Singh, R. N. Hota, D. K. Mandal, S. Narayanan; [Acoustic Characteristics of Premixed Flames in a Combustor](#); **50<sup>th</sup> National symposium on acoustics (NSA-2023)** Veer Surendra Sai University of Technology, (AE-1 Aero Acoustics) Feb 24-26, 2023, Sambalpur, **Odisha, India**.
- **2022**
16. Amrit Kumar, Deepak Kumar Mandal, Kwing-So Choi; [Spreading dynamics of a water drop on a micro-textured surface](#); **European Drag Reduction and Flow Control Meeting – EDRFCM 2022**, Sept. 6–9, 2022, Paris, **France**.
- **2021**
15. Amrit Kumar, Deepak Kumar Mandal\*; [Impact Dynamics of a Compound Drop on a Plane Solid: Effect of the Core Drop Viscosity](#); **Proceedings of the 48th National Conference on Fluid Mechanics and Fluid Power (FMFP)**, Dec 27-29, 2021, BITS Pilani, Pilani Campus, **India**. **(Best paper of the session and best paper of the day)**.
- **2020**
14. Lukesh Kumar Mahato, Mayaram Sahu, Animesh G. Kujur, Deepak Kumar Mandal\*; [The role of wettability on the shedding of drops](#); **DFD20 Meeting of The American Physical Society**, Nov 22-24, 2020, *Virtual*, Chicago, **USA**.
- **2019**
13. Suraj Prasad, Deepak Kumar Mandal\*, S. Narayanan; [The effect of composition on the oscillatory internal circulation of an evaporating bi-component drop](#); **IHMTC-2019: 25<sup>th</sup> National and 3<sup>rd</sup> International ISHMT-ASTFE Heat and Mass Transfer Conference**, December 28-31, 2019; Indian Institute of Technology Roorkee, **India**.
12. Deepak Kumar Mandal\*; [Shedding of salt water drops under icing conditions](#); **Central European Symposium on Thermophysics 2019**, October 16-18, **2019**; July 2019, AIP Conference Proceedings 2133(1):020025; Banska Bystrica, **Slovakia**. (<https://doi.org/10.1063/1.5120155>)
- **2018**
11. Suraj Prasad, Amrit Kumar, S. Narayanan, Deepak Kumar Mandal\*; [The effect of the size on the oscillatory internal circulation for an evaporating methanol-water drop](#); **Thermophysics 2018**, Nov 7-9, **2018**; AIP Conference Proceedings 1988, 020030-1–020030-6; Smolenice, **Slovakia**. (<https://doi.org/10.1063/1.5047624>)
10. Rahul Goswami, Lukesh Kumar Mahato, Deepak Kumar Mandal\*; [Effect of the resting time on drop shedding due to water shear flow](#); **International Conference on Recent Innovations & Developments in Mechanical Engineering (IC-RIDME 2018)**; Nov 08 - 10, 2018; National Institute of Technology Meghalaya; **India**.
9. Vikas Kumar, Ramesh Kumar Singh, Deepak Kumar Mandal\*; [Impact of palm oil methyl ester drops on a surface](#); **International Conference on Recent Innovations & Developments in Mechanical Engineering (IC-RIDME 2018)**; Nov 08 - 10, 2018; National Institute of Technology Meghalaya; **India**.

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8. Amrit Kumar, Abhishek Singh, Deepak Kumar Mandal\*; [Successive impact of two drops on surfaces with various wettabilities](#); **International Conference on Recent Innovations & Developments in Mechanical Engineering (IC-RIDME 2018)**; Nov 08 - 10, 2018; National Institute of Technology Meghalaya; **India**.
7. Ramesh Kumar Singh, Vikas Kumar, Deepak Kumar Mandal\*; [Impact of water drops on a PMMA surface](#); **7<sup>th</sup> International and 45<sup>th</sup> National Fluid Mechanics and Fluid Power (FMFP) conference 2018**; Dec 10 – 12, 2018; Indian Institute of Technology Bombay, **India**.
- **2017**
6. Lukesh Kumar Mahato, Rahul Goswami, Deepak Kumar Mandal\*; [Shedding of oil drops from a glass surface due to water cross flow](#); **International Conference on Advances in Thermal Systems, Materials and Design Engineering (ATSMDE-2017)**, Dec 21-22, 2017; Mumbai, **India**.
- **2013**
5. Deepak Kumar Mandal, Antonio Criscione, A. Amirfazli; [Water drop shedding under icing conditions from surfaces with different wettabilities](#); **DFD13 Meeting of The American Physical Society**, Nov 24-26, 2013, Pittsburgh, **USA**.
- **2011**
4. Deepak Kumar Mandal, Shamit Bakshi; [Measurement of surface concentration of an evaporating multicomponent droplet under different ambient conditions](#); **24<sup>th</sup> European Conference – Liquid Atomization and Spray Systems – Estoril 2011 (iLASS – 2011)**, Sept 05-07, 2011, Estoril, **Portugal**.
- **2009**
3. P. Nikhilbabu, Deepak Kumar Mandal, Shamit Bakshi; [Computational simulation of single droplet evaporation using volume of fluid method](#); **International workshop on bubble and drop interfaces**; Sept 23-25, 2009, Thessaloniki, **Greece**.
2. Deepak Kumar Mandal, Bishwajyoti Dutta Majumdar, Rahul Banerjee; [Emission reduction of an existing diesel engine using hydrogen gas](#); **International Conference on Energy Engineering – ICEE 2009**; Jan 07-09, 2009, Pondicherry Engineering College, **India**.
- **2007**
1. Deepak Kumar Mandal, Probir Kumar Bose, Ranajit Kumar Chakrabarty, Bishwajyoti Dutta Majumdar, Rahul Banerjee; [Development of hydrogen – diesel dual fuelled engine from an existing agricultural 4 – Stroke diesel engine using timed manifold induction technique](#); **International Conference & XX National Conference on IC Engines and Combustion – ICONICE 2007**; Dec 05-07, 2007, JNTU, Hyderabad, **India**.

## Book chapters

## List of publication of Dr. Deepak Kumar Mandal

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3. Rahul Goswami, Lukesh Kumar Mahato and Deepak Kumar Mandal; “[The effect of resting time on the shedding of a drop](#)” **Advances in Mechanical Engineering, Lecture Notes in Mechanical Engineering**, Springer Nature Singapore Pte Ltd. 2020; B. B. Biswal et al. (eds.), [https://doi.org/10.1007/978-981-15-0124-1\\_1](https://doi.org/10.1007/978-981-15-0124-1_1).
2. Vikas Kumar, Ramesh Kumar Singh and Deepak Kumar Mandal; “[Impact of palm oil methyl ester drops on a surface](#)” **Advances in Mechanical Engineering, Lecture Notes in Mechanical Engineering**, Springer Nature Singapore Pte Ltd. 2020; B. B. Biswal et al. (eds.), [https://doi.org/10.1007/978-981-15-0124-1\\_2](https://doi.org/10.1007/978-981-15-0124-1_2).
1. Amrit Kumar, Abhishek Singh and Deepak Kumar Mandal; “[Successive impact of two drops on surfaces with various wettability](#)” **Advances in Mechanical Engineering, Lecture Notes in Mechanical Engineering**, Springer Nature Singapore Pte Ltd. 2020; B. B. Biswal et al. (eds.), [https://doi.org/10.1007/978-981-15-0124-1\\_3](https://doi.org/10.1007/978-981-15-0124-1_3).

## Patents filed / granted

1. Adil Kureshee, Deepak Kumar Mandal, R. N. Hota, S. Narayanan. [A system for enhancing evaporation rate of single and multi-component twin drops by acoustic streaming](#). Indian Patent Application No. 202331084799, Dated 12<sup>th</sup> Dec 2023. Applied.
2. Nandan Kumar Jha, Vikram, Adil Kureshee, Deepak Kumar Mandal, R. N. Hota, S. Narayanan. [Acoustic driven twin jet injector system for the control of sprays/thermoacoustic oscillations in a combustor](#). Indian Patent Application No. 202331082467, Dated 04<sup>th</sup> Dec 2023. Applied.
3. Suraj Prasad, Deepak Kumar Mandal, S. Narayanan. [System and method for enhancing evaporation rate of multi component drops by acoustic streaming](#). Indian Patent Application No. 202231030421, Dated 27<sup>th</sup> May 2022. Filed.