

LIST OF PUBLICATIONS OF DR. JITENDRA KUMAR

PUBLICATIONS IN REFEREED JOURNALS

1. De, T.; Chakraborty, J.; Kumar, J.; Tripathi, A.; Sen, M.; Ketterhagen, W.: A particle location based multi-level coarse-graining technique for Discrete Element Method (DEM) simulation. Accepted for publication in Powder Technology.
2. Kumbhakar, M.; MOHAN, S.; Ghoshal, K.; Kumar, J.; Singh, V.P.: Semi-analytical solution for non-equilibrium suspended sediment transport in open channels with concentration-dependent settling velocity. *Journal of Hydrologic Engineering* 27 (2022).
3. Roy, N.; Dürr R.; Bück, A.; Kumar, J.; Sundar S.: Numerical methods for particle agglomeration and breakage in lid-driven cavity flows at low Reynolds numbers. *Mathematics and Computers in Simulation* 192 (2022), 33-49.
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5. Das, A.; Kumar, J.: Population balance modeling of volume and time dependent spray fluidized bed aggregation kernel using Monte Carlo simulation results. *Applied Mathematical Modelling* 92 (2021), 748-769.
6. Debnath, S.; Ghoshal, K.; Kumar, J.: Unsteady two-dimensional suspended sediment transport in open channel flow subject to deposition and re-entrainment. *Journal of Engineering Mathematics* 126:6 (2021).
7. Das, A.; Kumar, J.; Dosta M.; Heinrich, S.: On the approximate solution and modelling of the kernel of nonlinear breakage population balance equation. *SIAM Journal on Scientific Computing* 42 (2020), B1570–B1598.
8. Das, A.; Dutta S.; Sen M.; Saxena A.; Kumar J.; Giri L.; Murhammer D.W.; Chakraborty J.: A detailed model and Monte Carlo simulation for predicting DIP genome length distribution in Baculovirus infection of insect cells. *Biotechnology and Bioengineering* 118 (2020), 238-252.
9. Ghosh, D.; Saha, J.; Kumar, J.: Existence and uniqueness of steady-state solution to a singular coagulation-fragmentation equation. *Journal of Computational and Applied Mathematics* 380 (2020), 112992.
10. Kaur, G.; Singh, R.; Singh, M.; Kumar, J.; Matsoukas, T.: Reply to Comment on "Analytical approach for solving population balances: a homotopy perturbation method" J. Phys. A 52 (2019) 385201. *Journal of Physics A: Mathematical and Theoretical* 53 (2020), 388002.
11. Das, A.; Bhoi, S.; Sarkar, D.; Kumar, J.: Sonofragmentation of rectangular plate-like crystals: Bivariate population balance modeling and experimental validation. *Crystal Growth & Design* 20 (2020), 5424-5434
12. Das, A.; Bueck, A.; Kumar, J.: Selection function in breakage processes: PBM and Monte Carlo modeling. *Advanced Powder Technology* 31 (2020), 1457-1469.
13. Ghosh, D.; Kumar, J.: Uniqueness of solutions to the coagulation-fragmentation equation with singular kernel. *Japan Journal of Industrial and Applied Mathematics* 37 (2020), 487–505.

14. Mohan, S.; Kumbhakar, M.; Ghoshal, K.; Kumar, J.: Semi-analytical solution for one-dimensional unsteady sediment transport model in open channel with concentration-dependent settling velocity. *Physica Scripta* 95 (2020), 055204.
15. Das, N.; Saha, J., Kumar, J.: An application of semigroup theory to the pure fragmentation equation. *The Journal of Analysis* 28, 95–106 (2020),
16. Skorych, V.; Das, N.; Dosta, M.; Kumar, J.; Heinrich, S.: Application of transformation matrices to the solution of population balance equations. *Processes* 7 (2019), 535.
17. Kaur, G.; Singh, R.; Singh, M.; Kumar, J.; Matsoukas, T.: Analytical approach for solving population balance: a homotopy perturbation method. *Journal of Physics A: Mathematical and Theoretical* 52 (2019), 385201.
18. Mohan, S.; Kumbhakar, M.; Ghoshal, K.; Kumar, J.: Semi-analytical solution for simultaneous distribution of fluid velocity and sediment concentration in open channel flow. *Journal of Engineering Mechanics* 145 (2019), 04019090.
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20. Kaur, G.; Singh, M.; Matsoukas, T.; Kumar, J.; De Beer, T.; Nopens, I.: Two-compartment modeling and dynamics of top-sprayed fluidized bed granulator. *Applied Mathematical Modelling* 68 (2019), 267-280.
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29. Kaur, G.; Kumar, J.; Heinrich, S.: A weighted finite volume scheme for multivariate aggregation population balance equation. *Computers & Chemical Engineering* 101 (2017), 1- 10.

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BOOK CONTRIBUTIONS

1. Bhattacharyya, S.; Kumar, J.; Ghoshal, K. (Eds.): *Mathematical Modelling and Computational Tools*. Springer Proceedings in Mathematics & Statistics, Volume 320, 2020, ISBN 978-981-15-3614-4.

2. Ghosh, D.; Kumar, J.: *Uniqueness and Asymptotic Behavior of the Solutions to a Singular Coagulation-Fragmentation Equation*. In: Mathematical Modeling and Computational Tools (Eds.: Bhattacharyya, S., Kumar, J., Ghoshal, K.), Springer Proceedings in Mathematics & Statistics, Volume 320, 2020, ISBN 978-981-15-3614-4
3. Mohan, S.; Debnath, S.; Ghoshal, K.; Kumar, J.: *Distribution of Two-Dimensional Unsteady Sediment Concentration in an Open Channel Flow*. In: Mathematical Modeling and Computational Tools (Eds.: Bhattacharyya, S., Kumar, J., Ghoshal, K.), Springer Proceedings in Mathematics & Statistics 320, 2020, ISBN 978-981-15-3614-4
4. Ghosh, D.; Kumar, J.: *Existence of equilibrium solution of the coagulation-fragmentation equation with linear fragmentation kernel*. In: Mathematics and Computing (Eds.: Ghosh, D., Giri, D., Mohapatra, R.N., Sakurai, K., Savas, E., Som, T.), Springer Proceedings in Mathematics & Statistics 253, 2018, ISBN 978-981-13-2094-1
5. Kumar, J.; Peglow, M.; Heinrich, S.; Warnecke, G.; Tsotsas, E.; Hounslow, M.J. (Eds.: Tsotsas, E.; Mujumdar, A.S.). *Chapter: Numerical methods for solving population balances, Modern Drying Technology*, volume 1: Computational tools at different scales, WILEY-VCH, 2011, pages 57, ISBN 978-3-527-31556-7.
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CONFERENCE PUBLICATIONS

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CONFERENCE/WORKSHOP PROCEEDINGS

1. Kaur, G.; Singh, M.; Matsoukas, T.; Kumar, J.; Beer, T.D.; Nopens, I.: *Modeling and simulation of spray fluidized bed granulator*. Proceedings of the 6th International Conference on Population Balance Modelling, 7-9th May 2018, Ghent, Belgium.
2. Saha, J.; Kumar, J.; Bück, A.; Tsotsas, E.: *Finite volume approximations of population balance equations*. Proceedings of the 7th International Granulation Conference, July 1-3, 2015, Sheffield/UK.
3. Hussain, M.; Kumar, J.; Tsotsas, E.: *A new approach in population balance modeling of spray fluidized bed agglomeration*. Proceedings of the 7th World Congress on Particle Technology, 19–22nd May 2014, Beijing, China.
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8. Narni, N.R.; Warnecke, G.; Kumar, J.; Peglow, M.; Heinrich, S.: *Population balance modelling using discrete particle method*. Workshop: Micro-macro interactions in structured media and particle systems, November 24-25, 2006, Helmstedt. Proceedings DFG-Graduiertenkolleg 828, Otto-von-Guericke University Magdeburg, Germany, 2006, 5 pages.
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11. Kumar, J.; Peglow, M.; Warnecke, G.; Heinrich, S.; Tsotsas, E.; Moerl, L.: *Numerical solutions of a two-dimensional population balance equation for aggregation*. Proceedings of the 5th World Congress on Particle Technology, Orlando/Florida, USA, April 23-27, 2006, 10 pages, Particle Design: Formation and Processing, Session 155 - Modelling of Particle Formation Processes - I.

12. Peglow, M.; Kumar, J.; Heinrich, S.; Tsotsas, E.; Warnecke, G.; Moerl, L.: *A novel multi-dimensional population balance modelling incorporating particle size enlargement and drying behaviour for fluidized bed spray granulation*. Proceedings of the 5th World Congress on Particle Technology, Orlando/Florida, USA, April 23-27, 2006, 10 pages, WCPT5 Tutorials, Session 70: Poster Session.

13. Kumar, J.; Peglow, M.; Warnecke, G.; Heinrich, S.; Moerl, L.: *A two-dimensional population balance modelling for drying and agglomeration*. Proceedings of the Asia Pacific Drying Conference, Kolkata, India, December 13-15, 2005, 10 pages.

14. Peglow, M.; Kumar, J.; Moerl, L.: *Investigation of coalescence kinetics of microcrystalline cellulose in fluidized bed spray agglomeration- experimental studies and modelling approach*. Proceedings of the 14th International Drying Symposium (IDS 2004), Sao Paulo, Brazil, August 22-25, 2004, vol. A, pp. 485 - 492, ISBN 85-904573-1-1.

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