

REFERENCE LIST

- [1] M. Hemmat Esfe, S. Saedodin, O. Mahian, and S. Wongwises, 'Thermal conductivity of Al₂O₃/water nanofluids: Measurement, correlation, sensitivity analysis, and comparisons with literature reports', *J Therm Anal Calorim*, vol. 117, no. 2, pp. 675–681, Aug. 2014, doi: 10.1007/s10973-014-3771-x.
- [2] K. V. Sharma, P. K. Sarma, W. H. Azmi, R. Mamat, and K. Kadirgama, 'Correlations to predict friction and forced convection heat transfer coefficients of water based nanofluids for turbulent flow in a tube', p. 25, 2012.
- [3] D. Juncker, A. R. Wheeler, and D. Sinton, 'Lab on a chip Canada – rapid diffusion over large length scales', *Lab Chip*, vol. 13, no. 13, p. 2438, 2013, doi: 10.1039/c3lc90052e.
- [4] A. Olanrewaju, M. Beaugrand, M. Yafia, and D. Juncker, 'Capillary microfluidics in microchannels: From microfluidic networks to capillary circuits', *Lab on a Chip*, vol. 18, no. 16, pp. 2323–2347, 2018, doi: 10.1039/c8lc00458g.
- [5] P. M. T. Bandara, 'Heat Transfer Enhancement in Microchannels With Liquid-Liquid Slug Flow', Dissertation, RMIT University, 2015.
- [6] D. B. Tuckerman and R. F. W. Pease, 'High-Performance Heat Sinking for VLSI', no. 5, pp. 126–129, 1981.
- [7] A. Asthana, I. Zinovik, C. Weinmueller, and D. Poulikakos, 'International Journal of Heat and Mass Transfer Significant Nusselt number increase in microchannels with a segmented flow of two immiscible liquids: An experimental study', *International Journal of Heat and Mass Transfer*, vol. 54, no. 7–8, pp. 1456–1464, 2011, doi: 10.1016/j.ijheatmasstransfer.2010.11.048.
- [8] C. Y. Zhao and T. J. Lu, 'Analysis of microchannel heat sinks for electronics cooling', *International Journal of Heat and Mass Transfer*, vol. 45, no. 24, pp. 4857–4869, Nov. 2002, doi: 10.1016/S0017-9310(02)00180-1.
- [9] N. Ramesh Korasikha, T. Karthikeya Sharma, G. Amba Prasad Rao, and K. Madhu Murthy, 'Recent Advancements in Thermal Performance Enhancement

- in Microchannel Heatsinks for Electronic Cooling Application', in *Heat Transfer - Design, Experimentation and Applications*, M. Araiz Vega, Ed. IntechOpen, 2021. doi: 10.5772/intechopen.97087.
- [10] R. van Erp, R. Soleimanzadeh, L. Nela, G. Kampitsis, and E. Matioli, 'Co-designing electronics with microfluidics for more sustainable cooling', *Nature*, vol. 585, no. 7824, pp. 211–216, Sep. 2020, doi: 10.1038/s41586-020-2666-1.
- [11] L. D. Stevanovic, R. A. Beaupre, A. V. Gowda, A. G. Pautsch, and S. A. Solovitz, 'Integral micro-channel liquid cooling for power electronics', in *2010 Twenty-Fifth Annual IEEE Applied Power Electronics Conference and Exposition (APEC)*, Palm Springs, CA, USA, Feb. 2010, pp. 1591–1597. doi: 10.1109/APEC.2010.5433444.
- [12] A. Bar-Cohen, M. Arik, and M. Ohadi, 'Direct liquid cooling of high flux micro and nano electronic components', *Proceedings of the IEEE*, vol. 94, no. 8, pp. 1549–1570, 2006, doi: 10.1109/JPROC.2006.879791.
- [13] J. Albadr, S. Tayal, and M. Alasadi, 'Case Studies in Thermal Engineering Heat transfer through heat exchanger using Al₂O₃ nanofluid', *Case Studies in Thermal Engineering*, vol. 1, no. 1, pp. 38–44, 2013, doi: 10.1016/j.csite.2013.08.004.
- [14] L. Liu, V. Stetsyuk, K. J. Kubiak, Y. F. Yap, and J. C. Chai, 'Nanoparticles for convective heat transfer enhancement : heat transfer coefficient and the effects of particle size and zeta potential', *Chemical Engineering Communications*, vol. 0, no. 0, pp. 1–11, 2018, doi: 10.1080/00986445.2018.1525364.
- [15] X.-Q. Wang and A. S. Mujumdar, 'A review on nanofluids - part I: theoretical and numerical investigations', *Braz. J. Chem. Eng.*, vol. 25, no. 4, pp. 613–630, Dec. 2008, doi: 10.1590/S0104-66322008000400001.
- [16] X. B. Nie, S. Y. Chen, W. N. E, and M. O. Robbins, 'A continuum and molecular dynamics hybrid method for micro- and nano-fluid flow', *J. Fluid Mech.*, vol. 500, pp. 55–64, Jan. 2004, doi: 10.1017/S0022112003007225.
- [17] A. Mohebbi, 'Prediction of specific heat and thermal conductivity of nanofluids by a combined equilibrium and non-equilibrium molecular dynamics

- simulation', *Journal of Molecular Liquids*, vol. 175, pp. 51–58, Nov. 2012, doi: 10.1016/j.molliq.2012.08.010.
- [18] D. Xu, Y. Hu, and D. Li, 'A lattice Boltzmann investigation of two-phase natural convection of Cu-water nanofluid in a square cavity', *Case Studies in Thermal Engineering*, vol. 13, p. 100358, Mar. 2019, doi: 10.1016/j.csite.2018.11.009.
- [19] S. Chen and G. D. Doolen, 'Lattice Boltzmann method for fluid flows', *Annual Review of Fluid Mechanics*, vol. 30, no. 1, pp. 329–364, 1998.
- [20] Y. Xuan and Z. Yao, 'Lattice Boltzmann model for nanofluids', *Heat Mass Transfer*, Jul. 2004, doi: 10.1007/s00231-004-0539-z.
- [21] S. Witharana, C. Hodges, D. Xu, X. Lai, and Y. Ding, 'Aggregation and settling in aqueous polydisperse alumina nanoparticle suspensions', *J Nanopart Res*, vol. 14, no. 5, p. 851, May 2012, doi: 10.1007/s11051-012-0851-3.
- [22] S. T. W. Nam-Trung Nguyen, *Fundamentals and Applications of Microfluidics*.
- [23] L. Brigo, 'Water slippage over micro and nano structured surfaces', p. 147.
- [24] N.-T. Nguyen, S. T. Wereley, and A. House, *Fundamentals and Applications of Microfluidics - Second Edition*. 2002.
- [25] W. Yu and H. Xie, 'A Review on Nanofluids: Preparation , Stability Mechanisms , and Applications', vol. 2012, 2012, doi: 10.1155/2012/435873.
- [26] S. K. Das, S. U. S. Choi, and H. E. Patel, 'Heat transfer in nanofluids - A review', *Heat Transfer Engineering*, vol. 27, no. 10, pp. 3–19, 2006, doi: 10.1080/01457630600904593.
- [27] R. Davarnejad, S. Barati, and M. Kooshki, 'CFD simulation of the effect of particle size on the nanofluids convective heat transfer in the developed region in a circular tube', pp. 1–6, 2013.
- [28] Z. Jia-Fei, 'Dependence of Nanofluid Viscosity on Particle Size and pH Value Dependence of Nanofluid Viscosity on Particle Size and pH Value', vol. 066202, pp. 10–13.

- [29] Cengel Dr., Yunus A. and Afshin J. Ghajar, *Heat and Mass Transfer: Fundamentals and Applications*, 5th ed. McGraw-Hill Education, 2014. [Online]. Available: <https://www.amazon.com/Heat-Mass-Transfer-Fundamentals-Applications/dp/0073398187>
- [30] T. Bandara, N. T. Nguyen, and G. Rosengarten, 'Slug flow heat transfer without phase change in microchannels: A review', *Chemical Engineering Science*, vol. 126, pp. 283–295, 2015, doi: 10.1016/j.ces.2014.12.007.
- [31] A. K. Coker, 'Physical Properties of Liquids and Gases', *Ludwig's Applied Process Design for Chemical and Petrochemical Plants*, pp. 103–132, 2007, doi: 10.1016/b978-075067766-0/50010-5.
- [32] B. E. Rapp, 'Fluids: Prandtl Numbers', in *Microfluidics: Modelling, Mechanics and Mathematics*, 2017, pp. 243–263. doi: 10.1016/B978-1-4557-3141-1.50009-5.
- [33] G. Hetsroni, A. Mosyak, E. Pogrebnyak, and L. P. Yarin, 'Heat transfer in micro-channels: Comparison of experiments with theory and numerical results', *International Journal of Heat and Mass Transfer*, vol. 48, no. 25–26, pp. 5580–5601, 2005, doi: 10.1016/j.ijheatmasstransfer.2005.05.041.
- [34] M. A. Ebadian and C. X. Lin, 'A Review of High-Heat-Flux Heat Removal Technologies', *Journal of Heat Transfer*, vol. 133, no. 11, p. 110801, 2011, doi: 10.1115/1.4004340.
- [35] Peter A. Kew, 'Correlation For the prediction of boiling heat transfer in small-diameter channels', *Applied Thermal Engineering*, vol. 17, no. 8–10, pp. 705–715, Oct. 1997.
- [36] A. J. Karabelas, 'Scale formation in tubular heat exchangers—research priorities', *International Journal of Thermal Sciences*, vol. 41, no. 7, pp. 682–692, Jun. 2002, doi: 10.1016/S1290-0729(02)01363-7.
- [37] G. L. Morini, 'Scaling Effects for Liquid Flows in Microchannels', *Heat Transfer Engineering*, vol. 27, no. 4, pp. 64–73, May 2006, doi: 10.1080/01457630500523865.

- [38] Y. A. Çengel and M. A. Boles, *Thermodynamics An Engineering Approach*, 6th Edition. McGraw-Hill Education.
- [39] T. Al-Shemmeri, *Engineering Thermodynamics*, vol. 181. 1958. doi: 10.1038/1811028b0.
- [40] G. P. Celata, M. Cumo, V. Marconi, S. J. McPhail, and G. Zummo, 'Microtube liquid single-phase heat transfer in laminar flow', *International Journal of Heat and Mass Transfer*, vol. 49, no. 19–20, pp. 3538–3546, Sep. 2006, doi: 10.1016/j.ijheatmasstransfer.2006.03.004.
- [41] P. Rosa, T. G. Karayiannis, and M. W. Collins, 'Single-phase heat transfer in microchannels: The importance of scaling effects', *Applied Thermal Engineering*, vol. 29, no. 17–18, pp. 3447–3468, 2009, doi: 10.1016/j.applthermaleng.2009.05.015.
- [42] Y. Zhai, G. Xia, Z. Li, and H. Wang, 'Experimental investigation and empirical correlations of single and laminar convective heat transfer in microchannel heat sinks', *Experimental Thermal and Fluid Science*, vol. 83, pp. 207–214, May 2017, doi: 10.1016/j.expthermflusci.2017.01.005.
- [43] J. Bowers *et al.*, 'Flow and heat transfer behaviour of nanofluids in microchannels', *Progress in Natural Science: Materials International*, vol. 28, no. 2, pp. 225–234, Apr. 2018, doi: 10.1016/j.pnsc.2018.03.005.
- [44] J.-Y. Jung, H.-S. Oh, and H.-Y. Kwak, 'Forced convective heat transfer of nanofluids in microchannels', *International Journal of Heat and Mass Transfer*, vol. 52, no. 1–2, pp. 466–472, Jan. 2009, doi: 10.1016/j.ijheatmasstransfer.2008.03.033.
- [45] E. Manay and B. Sahin, 'Heat Transfer and Pressure Drop of Nanofluids in a Microchannel Heat Sink', *Heat Transfer Engineering*, vol. 38, no. 5, pp. 510–522, Mar. 2017, doi: 10.1080/10407782.2016.1195162.
- [46] S. Tahir and M. Mital, 'Numerical investigation of laminar nanofluid developing flow and heat transfer in a circular channel', *Applied Thermal Engineering*, vol. 39, pp. 8–14, Jun. 2012, doi: 10.1016/j.applthermaleng.2012.01.035.

- [47] Md. J. A. Khan, Md. R. Hasan, and Md. A. H. Mamun, 'Flow Behavior and Temperature Distribution in Micro-Channels for Constant Wall Heat Flux', *Procedia Engineering*, vol. 56, pp. 350–356, 2013, doi: 10.1016/j.proeng.2013.03.130.
- [48] M. Renksizbulut, H. Niazmand, and G. Tercan, 'Slip-flow and heat transfer in rectangular microchannels with constant wall temperature', *International Journal of Thermal Sciences*, vol. 45, no. 9, pp. 870–881, Sep. 2006, doi: 10.1016/j.ijthermalsci.2005.12.008.
- [49] S. Chen and Z. Tian, 'Simulation of thermal micro-flow using lattice Boltzmann method with Langmuir slip model', *International Journal of Heat and Fluid Flow*, vol. 31, no. 2, pp. 227–235, Apr. 2010, doi: 10.1016/j.ijheatfluidflow.2009.12.006.
- [50] L. S. Tong and Y. S. Tang, *Boiling heat transfer and two-phase flow*, 2nd ed. Washington, D.C: Taylor & Francis, 1997.
- [51] A. J. Ghajar and C. C. Tang, 'Importance of Non-Boiling Two-Phase Flow Heat Transfer in Pipes for Industrial Applications', *Heat Transfer Engineering*, vol. 31, no. 9, pp. 711–732, Aug. 2010, doi: 10.1080/01457630903500833.
- [52] A. J. Ghajar, 'Non-boiling heat transfer in gas-liquid flow in pipes: a tutorial', *J. Braz. Soc. Mech. Sci. & Eng.*, vol. 27, no. 1, pp. 46–73, Mar. 2005, doi: 10.1590/S1678-58782005000100004.
- [53] N. Janes, Y. S. Muzychka, B. Guy, E. J. Walsh, and P. Walsh, 'Heat transfer in gas-liquid and liquid-liquid two phase plug flow systems', in *2010 12th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems*, Las Vegas, NV, USA, Jun. 2010, pp. 1–11. doi: 10.1109/ITHERM.2010.5501409.
- [54] Y. S. Lim, S. C. M. Yu, and N. T. Nguyen, 'Flow visualization and heat transfer characteristics of gas-liquid two-phase flow in microtube under constant heat flux at wall', *International Journal of Heat and Mass Transfer*, vol. 56, no. 1–2, pp. 350–359, Jan. 2013, doi: 10.1016/j.ijheatmasstransfer.2012.08.063.

- [55] A. Ładosz and P. Rudolf von Rohr, 'Pressure drop of two-phase liquid-liquid slug flow in square microchannels', *Chemical Engineering Science*, vol. 191, pp. 398–409, Dec. 2018, doi: 10.1016/j.ces.2018.06.057.
- [56] R. W. Lockhart and R. C. Martinelli, 'Proposed correlation of data for isothermal two-phase, two-component flow in pipes', *Chemical Engineering Progress*, vol. 45, no. 1, pp. 39–48, 1949.
- [57] Y. Taitel and A. E. Dukler, 'A theoretical approach to the Lockhart-Martinelli correlation for stratified flow', *International Journal of Multiphase Flow*, vol. 2, no. 5–6, pp. 591–595, Apr. 1976, doi: 10.1016/0301-9322(76)90019-7.
- [58] E. Walsh, Y. Muzychka, P. Walsh, V. Egan, and J. Punch, 'Pressure drop in two phase slug/bubble flows in mini scale capillaries', *International Journal of Multiphase Flow*, vol. 35, no. 10, pp. 879–884, Oct. 2009, doi: 10.1016/j.ijmultiphaseflow.2009.06.007.
- [59] J. Jovanović, W. Zhou, E. V. Rebrov, T. A. Nijhuis, V. Hessel, and J. C. Schouten, 'Liquid-liquid slug flow: Hydrodynamics and pressure drop', *Chemical Engineering Science*, vol. 66, no. 1, pp. 42–54, Jan. 2011, doi: 10.1016/j.ces.2010.09.040.
- [60] M. N. Kashid, Y. M. Harshe, and D. W. Agar, 'Liquid-Liquid Slug Flow in a Capillary: An Alternative to Suspended Drop or Film Contactors', *Ind. Eng. Chem. Res.*, vol. 46, no. 25, pp. 8420–8430, Dec. 2007, doi: 10.1021/ie070077x.
- [61] A. Salim, M. Fourar, J. Pironon, and J. Sausse, 'Oil-water two-phase flow in microchannels: Flow patterns and pressure drop measurements', *Can. J. Chem. Eng.*, vol. 86, no. 6, pp. 978–988, Dec. 2008, doi: 10.1002/cjce.20108.
- [62] Q. He, Y. Hasegawa, and N. Kasagi, 'Heat transfer modelling of gas-liquid slug flow without phase change in a micro tube', *International Journal of Heat and Fluid Flow*, vol. 31, no. 1, pp. 126–136, Feb. 2010, doi: 10.1016/j.ijheatfluidflow.2009.11.004.
- [63] P. Urbant, A. Leshansky, and Y. Halupovich, 'On the forced convective heat transport in a droplet-laden flow in microchannels', *Microfluid Nanofluid*, vol. 4, no. 6, pp. 533–542, Jun. 2008, doi: 10.1007/s10404-007-0211-2.

- [64] A. Mohammed Adham, N. Mohd-Ghazali, and R. Ahmad, 'Thermal and hydrodynamic analysis of microchannel heat sinks: A review', *Renewable and Sustainable Energy Reviews*, vol. 21, pp. 614–622, May 2013, doi: 10.1016/j.rser.2013.01.022.
- [65] L. Cheng and G. Xia, 'Two Phase Flow and Thermal Physics of Nanofluids: Understanding the Fundamentals, Mechanisms and Challenges', presented at the The 3rd World Congress on Momentum, Heat and Mass Transfer, Apr. 2018. doi: 10.11159/icmfht18.2.
- [66] A. Sabaghan, M. Edalatpour, M. C. Moghadam, E. Roohi, and H. Niazmand, 'Nanofluid flow and heat transfer in a microchannel with longitudinal vortex generators: Two-phase numerical simulation', *Applied Thermal Engineering*, vol. 100, pp. 179–189, May 2016, doi: 10.1016/j.applthermaleng.2016.02.020.
- [67] M. S. Kamel, F. Lezsovits, and A. K. Hussein, 'Experimental studies of flow boiling heat transfer by using nanofluids: A critical recent review', *J Therm Anal Calorim*, May 2019, doi: 10.1007/s10973-019-08333-2.
- [68] X. Fang, Y. Chen, H. Zhang, W. Chen, A. Dong, and R. Wang, 'Heat transfer and critical heat flux of nanofluid boiling: A comprehensive review', *Renewable and Sustainable Energy Reviews*, vol. 62, pp. 924–940, Sep. 2016, doi: 10.1016/j.rser.2016.05.047.
- [69] C. W. Hirt and B. D. Nichols, 'Volume of fluid (VOF) method for the dynamics of free boundaries', *Journal of Computational Physics*, vol. 39, no. 1, pp. 201–225, Jan. 1981, doi: 10.1016/0021-9991(81)90145-5.
- [70] S. Osher and J. A. Sethian, 'Fronts propagating with curvature-dependent speed: Algorithms based on Hamilton-Jacobi formulations', *Journal of Computational Physics*, vol. 79, no. 1, pp. 12–49, Nov. 1988, doi: 10.1016/0021-9991(88)90002-2.
- [71] A. Bertei, A. Lamorgese, R. Mauri, and B. Tellini, 'Phase Field Modeling of Phase Separation and Dendrite Growth', p. 1.
- [72] A. Bamshad, A. Nikfarjam, M. H. Sabour, and H. Raji, 'Theoretical and Numerical Investigation of Liquid-Gas Interface Location of Capillary Driven



- Flow During the Time Throughout Circular Microchannels', in *2017 5th RSI International Conference on Robotics and Mechatronics (ICRoM)*, Tehran, Oct. 2017, pp. 432–438. doi: 10.1109/ICRoM.2017.8466144.
- [73] S. Zhou, X. Zhuang, and T. Rabczuk, 'A phase-field modeling approach of fracture propagation in poroelastic media', *Engineering Geology*, vol. 240, pp. 189–203, Jun. 2018, doi: 10.1016/j.enggeo.2018.04.008.
- [74] ANSYS, Inc, 'ANSYS FLUENT 12.0/12.1 Documentation'. ANSYS, Inc. [Online]. Available: <https://www.afs.enea.it/project/neptunius/docs/fluent/>
- [75] A. Bar-Cohen, M. Arik, and M. Ohadi, 'Direct liquid cooling of high flux micro and nano electronic components', *Proceedings of the IEEE*, vol. 94, no. 8, pp. 1549–1570, 2006, doi: 10.1109/JPROC.2006.879791.
- [76] K. A. Triplett, S. M. Ghiaasiaan, S. I. Abdel-Khalik, and D. L. Sadowski, 'Gas liquid two-phase Flow in microchannels Part I: two-phase Flow patterns', *International Journal of Multiphase Flow*, p. 18, 1999.
- [77] R. Gupta, D. F. Fletcher, and B. S. Haynes, 'CFD modelling of flow and heat transfer in the Taylor flow regime', *Chemical Engineering Science*, vol. 65, no. 6, pp. 2094–2107, Mar. 2010, doi: 10.1016/j.ces.2009.12.008.
- [78] H. Ganapathy, E. Al-Hajri, and M. M. Ohadi, 'Phase Field Method for Simulation of Multiphase Flow', in *Volume 6: Fluids and Thermal Systems; Advances for Process Industries, Parts A and B*, Denver, Colorado, USA, Jan. 2011, pp. 1309–1319. doi: 10.1115/IMECE2011-66279.
- [79] B. Wang, B. Ke, B. Chen, R. Li, and R. Tian, 'A technical review of research progress on thin liquid film thickness measurement', *Exp. Comput. Multiph. Flow*, vol. 2, no. 4, pp. 199–211, Dec. 2020, doi: 10.1007/s42757-019-0051-9.
- [80] P. Aussillous and D. Quéré, 'Quick deposition of a fluid on the wall of a tube', *Phys. Fluids*, vol. 12, no. 10, p. 2367, 2000, doi: 10.1063/1.1289396.
- [81] Y. Han and N. Shikazono, 'Measurement of liquid film thickness in micro square channel', *International Journal of Multiphase Flow*, vol. 35, no. 10, pp. 896–903, Oct. 2009, doi: 10.1016/j.ijmultiphaseflow.2009.06.006.

- [82] J. Göhl, A. Mark, S. Sasic, and F. Edelvik, 'An immersed boundary based dynamic contact angle framework for handling complex surfaces of mixed wettabilities', *International Journal of Multiphase Flow*, vol. 109, pp. 164–177, Dec. 2018, doi: 10.1016/j.ijmultiphaseflow.2018.08.001.
- [83] J. J. Licari and D. W. Swanson, 'Functions and theory of adhesives', in *Adhesives Technology for Electronic Applications*, Elsevier, 2011, pp. 35–74. doi: 10.1016/B978-1-4377-7889-2.10002-6.
- [84] I. Mudawar and T. M. Anderson, 'Parametric Investigation Into the Effects of Pressure, Subcooling, Surface Augmentation and Choice of Coolant on Pool Boiling in the Design of Cooling Systems for High-Power-Density Electronic Chips', *Journal of Electronic Packaging*, vol. 112, no. 4, pp. 375–382, Dec. 1990, doi: 10.1115/1.2904392.
- [85] S. U. S. Choi, 'Nanofluids: From Vision to Reality Through Research', *Journal of Heat Transfer*, vol. 131, no. 3, p. 033106, Mar. 2009, doi: 10.1115/1.3056479.
- [86] M. Nazifard, M. Nematollahi, K. Jafarpur, and K. Y. Suh, 'Numerical Simulation of Water-Based Alumina Nanofluid in Subchannel Geometry', *Science and Technology of Nuclear Installations*, vol. 2012, pp. 1–12, 2012, doi: 10.1155/2012/928406.
- [87] M. R. Safaei *et al.*, 'Mathematical Modeling for Nanofluids Simulation: A Review of the Latest Works', in *Modeling and Simulation in Engineering Sciences*, N. S. Akbar and O. A. Beg, Eds. InTech, 2016. doi: 10.5772/64154.
- [88] Y. Karimi, A. R. Solaimany Nazar, and M. Motevasel, 'CFD simulation of nanofluid heat transfer considering the aggregation of nanoparticles in population balance model', *J Therm Anal Calorim*, vol. 143, no. 1, pp. 671–684, Jan. 2021, doi: 10.1007/s10973-019-09218-0.
- [89] H. M. El-Batsh, M. A. Doheim, and A. F. Hassan, 'On the application of mixture model for two-phase flow induced corrosion in a complex pipeline configuration', *Applied Mathematical Modelling*, vol. 36, no. 11, pp. 5686–5699, Nov. 2012, doi: 10.1016/j.apm.2012.01.017.

- [90] T. Ambreen, A. Saleem, and C. W. Park, 'Homogeneous and Multiphase Analysis of Nanofluids Containing Nonspherical MWCNT and GNP Nanoparticles Considering the Influence of Interfacial Layering', *Nanomaterials*, vol. 11, no. 2, p. 277, Jan. 2021, doi: 10.3390/nano11020277.
- [91] D. Araújo dos Santos, S. Baluni, and A. Bück, 'Eulerian Multiphase Simulation of the Particle Dynamics in a Fluidized Bed Opposed Gas Jet Mill', *Processes*, vol. 8, no. 12, p. 1621, Dec. 2020, doi: 10.3390/pr8121621.
- [92] M. Azarpira, A. Zarrati, and P. Farrokhzad, 'Comparison between the Lagrangian and Eulerian Approach in Simulation of Free Surface Air-Core Vortices', *Water*, vol. 13, no. 5, p. 726, Mar. 2021, doi: 10.3390/w13050726.
- [93] H. Enwald and E. Peirano, 'Eulerian two-phase flow theory applied to fluidization', p. 46.
- [94] T. Maric and T. U. Darmstadt, 'Lagrangian / Eulerian numerical methods for fluid interface advection on unstructured meshes', p. 238.
- [95] C. Pena-Monferrer, J. L. Munoz-Cobo, G. Monros-Andreu, R. Martinez-Cuenca, and S. Chiva, 'An Eulerian-Lagrangian open source solver for bubbly flow in vertical pipes', p. 8.
- [96] M. Mahdavi, M. Sharifpur, and J. P. Meyer, 'CFD modelling of heat transfer and pressure drops for nanofluids through vertical tubes in laminar flow by Lagrangian and Eulerian approaches', *International Journal of Heat and Mass Transfer*, vol. 88, pp. 803–813, Sep. 2015, doi: 10.1016/j.ijheatmasstransfer.2015.04.112.
- [97] Z. Zhang and Q. Chen, 'Comparison of the Eulerian and Lagrangian methods for predicting particle transport in enclosed spaces', *Atmospheric Environment*, vol. 41, no. 25, pp. 5236–5248, Aug. 2007, doi: 10.1016/j.atmosenv.2006.05.086.
- [98] R. S. Vajjha and D. K. Das, 'Experimental determination of thermal conductivity of three nanofluids and development of new correlations', *International Journal of Heat and Mass Transfer*, vol. 52, no. 21–22, pp. 4675–4682, Oct. 2009, doi: 10.1016/j.ijheatmasstransfer.2009.06.027.

- [99] Y. Geng, A. A. A. Al-Rashed, B. Mahmoudi, A. S. Alsagri, A. Shahsavari, and P. Talebizadehsardari, 'Characterization of the nanoparticles, the stability analysis and the evaluation of a new hybrid nano-oil thermal conductivity', *J Therm Anal Calorim*, vol. 139, no. 2, pp. 1553–1564, Jan. 2020, doi: 10.1007/s10973-019-08434-y.
- [100] H. Gu, M. H. G. Duits, and F. Mugele, 'Droplets Formation and Merging in Two-Phase Flow Microfluidics', *IJMS*, vol. 12, no. 4, pp. 2572–2597, Apr. 2011, doi: 10.3390/ijms12042572.
- [101] H. Liu, C. O. Vandu, and R. Krishna, 'Hydrodynamics of Taylor Flow in Vertical Capillaries: Flow Regimes, Bubble Rise Velocity, Liquid Slug Length, and Pressure Drop', *Ind. Eng. Chem. Res.*, vol. 44, no. 14, pp. 4884–4897, Jul. 2005, doi: 10.1021/ie049307n.
- [102] D. Kim, 'Improved convective heat transfer correlations for two-phase two-component pipe flow', *KSME International Journal*, vol. 16, no. 3, pp. 403–422, Mar. 2002, doi: 10.1007/BF03185238.
- [103] S. C. M. Yu, C. P. Tso, and R. Liew, 'Analysis of thin film thickness determination in two-phase flow using a multifiber optical sensor', p. 9.
- [104] Y. A. Al-Aufi, B. N. Hewakandamby, G. Dimitrakakis, M. Holmes, A. Hasan, and N. J. Watson, 'Thin film thickness measurements in two phase annular flows using ultrasonic pulse echo techniques', *Flow Measurement and Instrumentation*, vol. 66, pp. 67–78, Apr. 2019, doi: 10.1016/j.flowmeasinst.2019.02.008.
- [105] W. H. Azmi, K. V. Sharma, P. K. Sarma, R. Mamat, S. Anuar, and L. Syam Sundar, 'Numerical validation of experimental heat transfer coefficient with SiO₂ nanofluid flowing in a tube with twisted tape inserts', *Applied Thermal Engineering*, vol. 73, no. 1, pp. 296–306, Dec. 2014, doi: 10.1016/j.applthermaleng.2014.07.060.
- [106] R. Ramirez-Tijerina, C. Rivera-Solorio, J. Singh, and K. Nigam, 'Numerical Study of Heat Transfer Enhancement for Laminar Nanofluids Flow', *Applied Sciences*, vol. 8, no. 12, p. 2661, Dec. 2018, doi: 10.3390/app8122661.

- [107] M. Jama *et al.*, 'Critical Review on Nanofluids: Preparation, Characterization, and Applications', *Journal of Nanomaterials*, vol. 2016, pp. 1–22, 2016, doi: 10.1155/2016/6717624.
- [108] W. Yu and H. Xie, 'A Review on Nanofluids: Preparation, Stability Mechanisms, and Applications', *Journal of Nanomaterials*, vol. 2012, pp. 1–17, 2012, doi: 10.1155/2012/435873.
- [109] T. Bandara, M. Chandrashekar, and G. Rosengarten, 'CFD Modelling of Liquid-Liquid Slug Flow Heat Transfer in Microchannels', *The 28th International Symposium on Transport Phenomena University of Peradeniya*, p. 8, Sep. 2017.
- [110] Sh. M. Vanaki, P. Ganesan, and H. A. Mohammed, 'Numerical study of convective heat transfer of nanofluids: A review', *Renewable and Sustainable Energy Reviews*, vol. 54, pp. 1212–1239, Feb. 2016, doi: 10.1016/j.rser.2015.10.042.

