



DAFTAR PUSTAKA

- Ali, S., Habchi, C., Menanteau, S., Lemenand, T., & Harion, J. L. (2017). Three-dimensional numerical study of heat transfer and mixing enhancement in a circular pipe using self-sustained oscillating flexible vorticity generators. *Chemical Engineering Science*, 162, 152–174.
<https://doi.org/10.1016/j.ces.2016.12.039>
- Ali, S., Menanteau, S., Habchi, C., Lemenand, T., & Harion, J. L. (2016). Heat transfer and mixing enhancement by using multiple freely oscillating flexible vortex generators. *Applied Thermal Engineering*, 105, 276–289.
<https://doi.org/10.1016/j.aplthermaleng.2016.04.130>
- Cai, G., Xue, L., Zhang, H., & Lin, J. (2017). A review on micromixers. *Micromachines*, 8(9). <https://doi.org/10.3390/mi8090274>
- Cengel, Y. A., & Cimbala, J. M. (2014). Fluid Mechanics; Fundamental and Application. In *Angewandte Chemie International Edition*, 6(11), 951–952. (Nomor Mi).
- Chen, X., Li, T., Zeng, H., Hu, Z., & Fu, B. (2016). Numerical and experimental investigation on micromixers with serpentine microchannels. *International Journal of Heat and Mass Transfer*, 98, 131–140.
<https://doi.org/10.1016/j.ijheatmasstransfer.2016.03.041>
- Criddle, W. J., Koziel, J. A., Van Leeuwen, J. H., & Jenks, W. S. (2019). Ethanol. *Encyclopedia of Analytical Science*, 3, 39–46. <https://doi.org/10.1016/B978-0-12-409547-2.14560-3>
- Dadvand, A., Hosseini, S., Aghebatandish, S., & Khoo, B. C. (2019). Enhancement of heat and mass transfer in a microchannel via passive oscillation of a flexible vortex generator. *Chemical Engineering Science*, 207, 556–580. <https://doi.org/10.1016/j.ces.2019.06.045>
- Dong, Q., Yu, C., Li, L., Nie, L., Li, D., & Zang, H. (2019). Near-infrared spectroscopic study of molecular interaction in ethanol-water mixtures.



Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy,
222, 117183. <https://doi.org/10.1016/j.saa.2019.117183>

Engler, M., Kockmann, N., Kiefer, T., & Woias, P. (2004). Numerical and experimental investigations on liquid mixing in static micromixers. *Chemical Engineering Journal*, 101(1–3), 315–322.
<https://doi.org/10.1016/j.cej.2003.10.017>

Fallah, D. A., Rezazadeh, S., Raad, M., & Jalili, H. (2022). Numerical investigation of heat transfer and mixing process phenomena inside a channel containing a triangular bluff body and elastic micro-beam: gap spacing and geometric characteristic effects. *Microfluidics and Nanofluidics*, 26(3).
<https://doi.org/10.1007/s10404-022-02527-1>

Gonzalez, R., & Woods, R. (2019). Digital Image Fundamentals. In *A Guide for Machine Vision in Quality Control*. <https://doi.org/10.1201/9781003002826-2>

Hossain, S., & Kim, K. Y. (2014). Mixing analysis of passive micromixer with unbalanced three-split rhombic sub-channels. *Micromachines*, 5(4), 913–928.
<https://doi.org/10.3390/mi5040913>

Hossain, S., Lee, I., Kim, S. M., & Kim, K. Y. (2017). A micromixer with two-layer serpentine crossing channels having excellent mixing performance at low Reynolds numbers. *Chemical Engineering Journal*, 327, 268–277.
<https://doi.org/10.1016/j.cej.2017.06.106>

Hosseini, S., Aghebatandish, S., Dadvand, A., & Khoo, B. C. (2021). An immersed boundary-lattice Boltzmann method with multi relaxation time for solving flow-induced vibrations of an elastic vortex generator and its effect on heat transfer and mixing. *Chemical Engineering Journal*, 405.
<https://doi.org/10.1016/j.cej.2020.126652>

Hsieh, S. S., Lin, J. W., & Chen, J. H. (2013). Mixing efficiency of Y-type micromixers with different angles. *International Journal of Heat and Fluid*



Flow, 44, 130–139. <https://doi.org/10.1016/j.ijheatfluidflow.2013.05.011>

Lambert, R. A., & Rangel, R. H. (2010). The role of elastic flap deformation on fluid mixing in a microchannel. *Physics of Fluids*, 22(5), 52003.
<https://doi.org/10.1063/1.3410268>

Lee, C. (2016). *OPTIMUM DESIGN OF A Y-CHANNEL MICROMIXER FOR ENHANCED MIXING ACCORDING TO THE CONFIGURATION OF OBSTACLES*. 19(1), 1–22.

Liao, W., & Jing, D. (2023). Experimental study on fluid mixing and pressure drop of mini-mixer with flexible vortex generator. *International Communications in Heat and Mass Transfer*, 142.
<https://doi.org/10.1016/j.icheatmasstransfer.2023.106615>

Lobasov, A. S., Shebeleva, A. A., & Minakov, A. V. (2019). The study of ethanol and water mixing modes in the t-shaped micromixers. *Journal of Siberian Federal University - Mathematics and Physics*, 12(2), 202–212.
<https://doi.org/10.17516/1997-1397-2019-12-2-202-212>

Munson, B., Young, D., & Okiishi, T. (2002). *Fundamental of Fluid Mechanics Fourth Edition*.

Orsi, G., Roudgar, M., Brunazzi, E., Galletti, C., & Mauri, R. (2013). Water-ethanol mixing in T-shaped microdevices. *Chemical Engineering Science*, 95, 174–183. <https://doi.org/10.1016/j.ces.2013.03.015>

Razavi Bazaz, S., Sayyah, A., Hazeri, A. H., Salomon, R., Abouei Mehrizi, A., & Ebrahimi Warkiani, M. (2024). Micromixer research trend of active and passive designs. *Chemical Engineering Science*, 293(March), 120028.
<https://doi.org/10.1016/j.ces.2024.120028>

Rudyak, V., & Minakov, A. (2014). *Modeling and Optimization of Y-Type Micromixers*. 1, 886–912. <https://doi.org/10.3390/mi5040886>

Schikarski, T., Peukert, W., & Avila, M. (2017). Direct numerical simulation of



water–ethanol flows in a T-mixer. *Chemical Engineering Journal*, 324, 168–181. <https://doi.org/10.1016/j.cej.2017.04.119>

Tabeling, P. (2023). Introduction to Microfluidics. In *Introduction to Microfluidics*. <https://doi.org/10.1093/oso/9780192845306.001.0001>

Thorat, A. A., & Dalvi, S. V. (2012). Liquid antisolvent precipitation and stabilization of nanoparticles of poorly water soluble drugs in aqueous suspensions: Recent developments and future perspective. *Chemical Engineering Journal*, 181–182, 1–34.
<https://doi.org/10.1016/j.cej.2011.12.044>

Valdés, J. P., Kahouadji, L., & Matar, O. K. (2022). Current advances in liquid–liquid mixing in static mixers: A review. *Chemical Engineering Research and Design*, 177, 694–731. <https://doi.org/10.1016/j.cherd.2021.11.016>

Wang, X., Liu, Z., Wang, B., Cai, Y., & Song, Q. (2023). An overview on state-of-art of micromixer designs, characteristics and applications. *Analytica Chimica Acta*, 1279(July), 341685.
<https://doi.org/10.1016/j.aca.2023.341685>

Yang, A. S., Chuang, F. C., Chen, C. K., Lee, M. H., Chen, S. W., Su, T. L., & Yang, Y. C. (2015). A high-performance micromixer using three-dimensional Tesla structures for bio-applications. *Chemical Engineering Journal*, 263, 444–451. <https://doi.org/10.1016/j.cej.2014.11.034>