

DAFTAR PUSTAKA

- ADIWIBOWO, P. H. (2012). Karakteristik Flow Patern Pada Aliran Dua Fase Gas-Cairan Melewati Pipa Vertikal. *Jurnal Teknik Industri*, 11(2), 117. <https://doi.org/10.22219/jtiumm.vol11.no2.117-122>
- Arabi, A., Salhi, Y., Bouderbail, A., Zenati, Y., & Legrand, J. (2021). *Onset of intermittent flow : Visualization of flow structures*. 27.
- Arijanto, *, Yohana, E., & Sinaga, F. T. H. (2015). Analisis Pengaruh Kekentalan Fluida Air Dan Minyak Kelapa Pada Performansi Pompa Sentrifugal. *Jurnal Teknik Mesin S-I*, 3(2), 212–219.
- Caridad, J., Asuaje, M., Kenyery, F., Tremante, A., & Aguilón, O. (2008). Characterization of a centrifugal pump impeller under two-phase flow conditions. *Journal of Petroleum Science and Engineering*, 63(1–4), 18–22. <https://doi.org/10.1016/j.petrol.2008.06.005>
- Catrawedarma, I. G. N. B., Deendarlianto, & Indarto. (2021). Statistical Characterization of Flow Structure of Air–water Two-phase Flow in Airlift Pump–Bubble Generator System. *International Journal of Multiphase Flow*, 138, 103596. <https://doi.org/10.1016/j.ijmultiphaseflow.2021.103596>
- Cengel, Y., & Cimbala, J. (2014). *Yunus Cengel, John Cimbala-Fluid Mechanics Fundamentals and Applications-McG*.
- Cubas, J. M. C., Stel, H., Ofuchi, E. M., Marcelino Neto, M. A., & Morales, R. E. M. (2020). Visualization of two-phase gas-liquid flow in a radial centrifugal pump with a vaned diffuser. *Journal of Petroleum Science and Engineering*, 187(August 2019), 106848. <https://doi.org/10.1016/j.petrol.2019.106848>
- Deendarlianto, Rahmandhika, A., Widyatama, A., Dinaryanto, O., Widyaparaga, A., & Indarto. (2019). Experimental study on the hydrodynamic behavior of gas-liquid air-water two-phase flow near the transition to slug flow in horizontal pipes. *International Journal of Heat and Mass Transfer*, 130, 187–203. <https://doi.org/10.1016/j.ijheatmasstransfer.2018.10.085>
- Elperin, T., & Klochko, M. (2002). Flow regime identification in a two-phase flow

- using wavelet transform. *Experiments in Fluids*, 32(6), 674–682.
<https://doi.org/10.1007/s00348-002-0415-x>
- Fabiana Meijon Fadul. (2019). 済無No Title No Title No Title.
- Faroqi, A., Hadisantoso, E. P., Halim, D. K., & WS, M. S. (2016). Perancangan alat pendeteksi kadar polusi udara menggunakan sensor gas MQ-7 dengan teknologi wirelles HC-05. *Jurnal ISTEK*, 10(2), 33–47.
<https://journal.uinsgd.ac.id/index.php/istek/article/view/1476>
- Fitria, S. F., Harahap, E., Badruzzaman, F., Fajar, Y., & Darmawan, D. (2018). Aplikasi Rata-Rata Data Tunggal. *Seminar Nasional Pendidikan Matematika Ahmad Dahlan*, 145–150.
- Gamboa, J., & Prado, M. (2011). Review on ESP surging correlations and models. *SPE Production and Operations Symposium, Proceedings, March*, 145–159.
<https://doi.org/10.2118/140937-ms>
- Gunawan, D., Hudaya, A. Z., Teknik, F., & Mada, U. G. (2015). *Tegangan Geser Antarmuka Pada Aliran Stratified Air*. 10(1), 32–40.
- Handayani, S. U. (2013). Karakteristik Pompa Sentrifugal Aliran Campur Dengan Variable Frequency Drive. *Rotasi*, 15(3), 30.
<https://doi.org/10.14710/rotasi.15.3.30-34>
- He, A., & Shao, C. (2021). Study on the induced noise of gas–liquid two-phase flow in a centrifugal pump. *Applied Acoustics*, 176, 107892.
<https://doi.org/10.1016/j.apacoust.2020.107892>
- He, D., Zhao, L., Chang, Z., Zhang, Z., Guo, P., & Bai, B. (2021a). On the performance of a centrifugal pump under bubble inflow: Effect of gas-liquid distribution in the impeller. *Journal of Petroleum Science and Engineering*, 203(August 2020), 108587. <https://doi.org/10.1016/j.petrol.2021.108587>
- He, D., Zhao, L., Chang, Z., Zhang, Z., Guo, P., & Bai, B. (2021b). On the performance of a centrifugal pump under bubble inflow: Effect of gas-liquid distribution in the impeller. *Journal of Petroleum Science and Engineering*, 203(February), 108587. <https://doi.org/10.1016/j.petrol.2021.108587>
- Hidayat, W., Biksono, D., & Zulpian, D. (2021). Pengujian Kinerja Pompa Sentrifugal Multistage Berkapasitas 118,5 KW pada PLTP Berdasarkan

- Standar ISO 9906. *Jurnal Rekayasa Hijau*, 5(2), 101–113.
<https://doi.org/10.26760/jrh.v5i2.101-113>
- Kong, R., & Kim, S. (2017). Characterization of horizontal air–water two-phase flow. *Nuclear Engineering and Design*, 312, 266–276.
<https://doi.org/10.1016/j.nucengdes.2016.06.016>
- Kurnia Muktabar, A., & Yohana, E. (2018). Kaji Eksperimental Pengaruh Aliran Dua Fase Crude Oil-Water dalam Pipa Horisontal Terhadap Performansi Pompa Sentrifugal dengan Variasi Impeller. *Jurnal Teknik Mesin S-1*, 2(2), 101–108.
- Liao, M., Si, Q., Fan, M., Wang, P., Liu, Z., Yuan, S., Cui, Q., & Bois, G. (2021). Experimental Study on Flow Behavior of Unshrouded Impeller Centrifugal Pumps under Inlet Air Entrainment Condition. *14th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics, ETC 2021*.
<https://doi.org/10.3390/ijtp6030031>
- Mahardhika, A., & Purqon, A. (2016). *PROSIDING SNIPS 2016 Aplikasi Fisika Statistik dalam Pengoptimalan Portofolio LQ45 pada Pasar Saham Indonesia dengan Metode Random Matrix Theory*. 60–63.
- Mandhane, J. M., Gregory, G. A., & Aziz, K. (1974). A flow pattern map for gas-liquid flow in horizontal pipes. *International Journal of Multiphase Flow*, 1(4). [https://doi.org/10.1016/0301-9322\(74\)90006-8](https://doi.org/10.1016/0301-9322(74)90006-8)
- Mansour, M., Kopparthy, S., & Thévenin, D. (2022). Investigations on the effect of rotational speed on the transport of air-water two-phase flows by centrifugal pumps. *International Journal of Heat and Fluid Flow*, 94(May 2021).
<https://doi.org/10.1016/j.ijheatfluidflow.2022.108939>
- Mansour, M., Wunderlich, B., & Thevenin, D. (2018). Experimental study of two-phase air/water flow in a centrifugal pump working with a closed or a semi-open impeller. *Proceedings of the ASME Turbo Expo*, 9, 1–13.
<https://doi.org/10.1115/GT2018-75380>
- Mansour, M., Wunderlich, B., & Thévenin, D. (2018). Effect of tip clearance gap and inducer on the transport of two-phase air-water flows by centrifugal pumps. *Experimental Thermal and Fluid Science*, 99(August), 487–509.

<https://doi.org/10.1016/j.expthermflusci.2018.08.018>

- Matsui, G. (1984). Identification of flow regimes in vertical gas-liquid two-phase flow using differential pressure fluctuations. *International Journal of Multiphase Flow*, 10(6), 711–719. [https://doi.org/10.1016/0301-9322\(84\)90007-7](https://doi.org/10.1016/0301-9322(84)90007-7)
- Mekanikal, J., Mesin, J. T., Teknik, F., & Tadulako, U. (2019). KARAKTERISTIK KAVITASI PADA POMPA SENTRIFUGAL Abdul Muis, Muchsin, Muhammad Hasan Basri. 10(2), 965–974.
- Monte Verde, W., Biazussi, J. L., Sassim, N. A., & Bannwart, A. C. (2017). Experimental study of gas-liquid two-phase flow patterns within centrifugal pumps impellers. *Experimental Thermal and Fluid Science*, 85, 37–51. <https://doi.org/10.1016/j.expthermflusci.2017.02.019>
- NEO, F. (2015). *Investigasi Eksperimental Tebal Film Dan Penurunan Tekanan Aliran Annular Pada Pipa Horisontal*. 1(Sens 1), 33–41. http://etd.repository.ugm.ac.id/home/detail_pencarian/88978
- Panasonic. (2020). *WATER PUMP CATALOG* (p. 16). https://www.google.com/url?sa=t&source=web&rct=j&url=https://www.trist-arindo.com/catalog/catalog-panasonic-pompa.pdf&ved=2ahUKEwj3sJTE8KP_AhWN4TgGHbhnC5EQFnoECBEQAQ&usg=AOvVaw05aHvglJluJ-KG-16DGwp
- Parinduri, I., & Nurhabibah Hutagalung, S. (2019). Perangkaian Gerbang Logika Dengan Menggunakan Matlab (Simulink). *JURTEKSI (Jurnal Teknologi Dan Sistem Informasi)*, 5(1), 63–70. <https://doi.org/10.33330/jurteksi.v5i1.300>
- Poullikkas, A. (2003). Effects of two-phase liquid-gas flow on the performance of nuclear reactor cooling pumps. *Progress in Nuclear Energy*, 42(1), 3–10. [https://doi.org/10.1016/S0149-1970\(03\)80002-1](https://doi.org/10.1016/S0149-1970(03)80002-1)
- Rianti, W., & Harahap, E. (2021). Pengolahan Data Hasil Penjualan Online Menggunakan Aplikasi Microsoft Excel Online Sales Result Data Processing Using Microsoft Excel Application. *Jurnal UNISBA*, 20(2), 69–76.
- Sachdeva, R. (1988). TWO-PHASE FLOW THROUGH ELECTRIC SUBMERSIBLE PUMPS. *Печицы*, 1(2), 12–17.

<https://www.scribd.com/document/509336669/1988-Sachdeva-Two-phase-Flow-Through-Electric-Submersible-Pumps>

Santoso, B., Indarto, I., Deendarlianto, D., & W., T. S. (2012). Fluktuasi Beda Tekanan Aliran Plug Gas – Likuid pada Pipa Horizontal. *Prosiding Industrial Research Workshop and National Seminar*, 3(1979), 10–16. <https://jurnal.polban.ac.id/ojs-3.1.2/proceeding/article/view/502>

Santoso, B., Teknik, F., Teknik, F., Elektro, J. T., Teknik, F., Mesin, J. T., & Teknik, F. (2012). *Fluktuasi Beda Tekanan Dari Pola Aliran Slug Air-Udara*. XIV(2), 1–6.

Shao, C., Bao, N., Wang, S., & Zhou, J. (2022). Study on the prediction method and the flow characteristics of gas-liquid two-phase flow patterns in the suction chamber. *International Journal of Numerical Methods for Heat and Fluid Flow*, 32(8), 2700–2718. <https://doi.org/10.1108/HFF-08-2021-0588>

Shao, C., Li, C., & Zhou, J. (2018). Experimental investigation of flow patterns and external performance of a centrifugal pump that transports gas-liquid two-phase mixtures. *International Journal of Heat and Fluid Flow*, 71(September 2017), 460–469. <https://doi.org/10.1016/j.ijheatfluidflow.2018.05.011>

Shao, C., Zhong, G., & Zhou, J. (2021). Study on gas–liquid two-phase flow in the suction chamber of a centrifugal pump and its dimensionless characteristics. *Nuclear Engineering and Design*, 380(August 2020), 111298. <https://doi.org/10.1016/j.nucengdes.2021.111298>

Si, Q., Bois, G., Jiang, Q., He, W., Ali, A., & Yuan, S. (2018). Investigation on the handling ability of centrifugal pumps under air-water two-phase inflow: Model and experimental validation. *Energies*, 11(11), 1–17. <https://doi.org/10.3390/en11113048>

Si, Q., Bois, G., Liao, M., Zhang, H., Cui, Q., & Yuan, S. (2019). A comparative study on centrifugal pump designs and two-phase flow characteristic under inlet gas entrainment conditions. *Energies*, 13(1). <https://doi.org/10.3390/en13010065>

Siregar, M. A., & Damanik, W. S. (2020). Pengaruh Variasi Sudut Keluar Impeler Terhadap Performance Pompa Sentrifugal. *Jurnal Rekayasa Material*,

Manufaktur Dan Energi, 3(2), 166–174.

<https://doi.org/10.30596/rmme.v3i2.5278>

Suharto. (2016). *POMPA SENTRIFUGAL Panduan Lengkap : Standarisasi, Teori, Pemilihan, Pembelian, Pengoperasian, Maintenance, dan Troubleshooting* (Indarto (ed.); I). Ray Press.

Sukamta, S., Asy Ari Dwiearto, H., & Sudarja, S. (2018). Perilaku Antarmuka Berdasarkan Data Beda Tekanan pada Peristiwa Kondensasi Aliran Uap Dengan Pendinginan dari Luar Searah pada Pipa Horisontal Berbasis Domain Waktu. *Semesta Teknika*, 21(1), 85–92. <https://doi.org/10.18196/st.211214>

Taitel, Y., Bornea, D., & Dukler, A. E. (1980). Modelling flow pattern transitions for steady upward gas-liquid flow in vertical tubes. *AIChE Journal*, 26(3). <https://doi.org/10.1002/aic.690260304>

Taitel, Y., & Dukler, A. E. (1976). A model for predicting flow regime transitions in horizontal and near horizontal gas-liquid flow. *AIChE Journal*, 22(1). <https://doi.org/10.1002/aic.690220105>

Talley, J. D., Worosz, T., Kim, S., & Buchanan, J. R. (2015). Characterization of horizontal air–water two-phase flow in a round pipe part I: Flow visualization. *International Journal of Multiphase Flow*, 76, 212–222. <https://doi.org/10.1016/j.ijmultiphaseflow.2015.06.011>

Thaker, J., & Banerjee, J. (2015). Characterization of two-phase slug flow sub-regimes using flow visualization. *Journal of Petroleum Science and Engineering*, 135, 561–576. <https://doi.org/10.1016/j.petrol.2015.10.018>

Thome, J. R. (2006). Engineering Data Book III. *Wolverine Tube, Inc.*, 1–34.

Turpin, J. L., Lea, J. F., & Bearden, J. L. (1986). *Gas-Liquid Flow Through Centrifugal Pumps - Correlation of Data*. (pp. 13–20).

Wahyudi, N., Soenoko, R., & Wahyudi, S. (2013). Pengaruh Variasi Diameter Injektor Konvergen Udara Terhadap Fenomena Flooding Dalam Aliran Dua Fase Gas-Cair Berlawanan Arah Pada Pipa Vertikal. *Jurnal Rekayasa Mesin*, 4(3), 204–211.

Wedianto, A., Sari, H. L., & H, Y. S. (2016). Analisa Perbandingan Metode Filter Gaussian, Mean Dan Median Terhadap Reduksi Noise. *Jurnal Media*

- Infotama*, 12(1), 21–30. <https://doi.org/10.37676/jmi.v12i1.269>
- Weisman, J., Duncan, D., Gibson, J., & Crawford, T. (1979). Effects of fluid properties and pipe diameter on two-phase flow patterns in horizontal lines. *International Journal of Multiphase Flow*, 5(6), 437–462. [https://doi.org/10.1016/0301-9322\(79\)90031-4](https://doi.org/10.1016/0301-9322(79)90031-4)
- Wijayanta, S., Deendarlianto, Indarto, Prasetyo, A., & Hudaya, A. Z. (2023). The effect of the liquid physical properties on the wave frequency and wave velocity of co-current gas-liquid stratified two-phase flow in a horizontal pipe. *International Journal of Multiphase Flow*, 158(2). <https://doi.org/10.1016/j.ijmultiphaseflow.2022.104300>
- Wijayanta, S., Indarto, Deendarlianto, Catrawedarma, I. G. N. B., & Hudaya, A. Z. (2022). Statistical characterization of the interfacial behavior of the sub-regimes in gas-liquid stratified two-phase flow in a horizontal pipe. *Flow Measurement and Instrumentation*, 83(2). <https://doi.org/10.1016/j.flowmeasinst.2021.102107>
- Zhao, L., Chang, Z., Zhang, Z., Huang, R., & He, D. (2021). Visualization of gas-liquid flow pattern in a centrifugal pump impeller and its influence on the pump performance. *Measurement: Sensors*, 13(November 2020), 100033. <https://doi.org/10.1016/j.measen.2020.100033>
- Zhou, D., & Sachdeva, R. (2010). Simple model of electric submersible pump in gassy well. *Journal of Petroleum Science and Engineering*, 70(3–4), 204–213. <https://doi.org/10.1016/j.petrol.2009.11.012>
- Zhu, J., Guo, X., Liang, F., & Zhang, H. Q. (2017a). Experimental study and mechanistic modeling of pressure surging in electrical submersible pump. *Journal of Natural Gas Science and Engineering*, 45, 625–636. <https://doi.org/10.1016/j.jngse.2017.06.027>
- Zhu, J., Guo, X., Liang, F., & Zhang, H. Q. (2017b). Experimental study and mechanistic modeling of pressure surging in electrical submersible pump. *Journal of Natural Gas Science and Engineering*, 45, 625–636. <https://doi.org/10.1016/j.jngse.2017.06.027>