

DAFTAR PUSTAKA

- Abdelgaied, M, Saber, MA, Bassuoni, MM & Khaira, A.M. 2023, 'Solid *desiccant* air conditioning system using *desiccant dehumidifiers* with cooling technique and thermal recovery unit: Experimental investigation and performance analysis', *Journal of Cleaner Production*, vol. 421, pp.138387. DOI:10.1016/j.jclepro.2023.138387.
- Ai, ZT, Mak, CM 2013, 'Pressure Losses across Multiple Fittings in Ventilation Ducts', *Research Article*, DOI:http://dx.doi.org/10.1155/2013/195763
- Al-Obaidi, ASM, Peterson, S & Hui, KJLN 2022, '*Desiccant*-based air *dehumidifier* and cooling system', *Journal of Physics: Conference Series*, vol. 2222, no. 1, pp. 012012, DOI:10.1088/1742-6596/2222/1/012012.
- Alam, Z & Hussain, T 2022, 'Experimental analysis and performance evaluation of solid *desiccant dehumidifier* using *silica gel*', *International Journal of Analytical, Experimental and Finite Element Analysis*, vol. 9, no. 1, pp. 1–8, DOI:10.26706/ijaefea.1.9.20211202.
- Alvindocs 2025, 'Rumus Debit Aliran Air dan Cara Menghitungnya dengan Flowmeter', *Alvindocs*, Available at : <https://www.alvindocs.com/blog/rumus-debit-aliran-air>, diakses pada 26 Juni 2026.
- Asa, FN, Yunianto, B & Muchammad 2024, 'Dehumidifikasi udara tertutup menggunakan *desiccant silica gel*', *Jurnal Teknik Mesin S-1*, vol. 12, no. 1, pp. 19–24.
- Behede, B, Chakrabarti, S & Wankhede, U 2024, 'Development of rotary *dehumidifier* with silica-gel-based composite *desiccant*', *Thermal Science*, vol. 28, no. 5, pp. 4223-4233, DOI:10.2298/TSCI231016174B.
- Chaudhary, GQ, Ali, M, Ashiq, M, Ali, HM, Amber, KP 2019, 'Experimental and model based performance investigation of a solid *desiccant wheel dehumidifier* in subtropical climate', *Thermal Science*, vol. 23, no. 2B, pp. 975-988, DOI: <https://doi.org/10.2298/TSCI170127165C>
- Cuce, PM, Yilmaz, YN & Cuce, E 2025, 'A comprehensive review on rotary *desiccant*

- wheel systems: The future of smart building climate control', *Journal of Thermal Analysis and Calorimetry*, vol. 150, pp. 9827–9850, DOI:10.1007/s10973-025-14362-x.
- Dalian Haixin Chemical Co., Ltd., 2024, 'Fine-pored *Silica gel*(A Type *Silica gel*)' Available at : https://www.hxmol.com/product/fine-pored-silica-gel-a-type-silica-gel?gad_source=1&gad_campaignid=21129160470&gbraid=0AAAAApurPyYBYZId_h9VmAILCAMHoswXX&gclid=Cj0KCQjwi8nRBhDhARIsAHZf_pbcQvt_huc0OW4hROTgdZywKKmyeoDsCa6ZnedrkCfyK4kW3cJGRXkaAv_4EALw_wcB, diakses pada 19 Juni 2026
- Engineering Tool Box (n.d.), 'Air Duct Friction Loss : Pressure Drop', *The Engineering Toolbox*, Available at : https://www.engineeringtoolbox.com/duct-friction-pressure-loss-d_444.html#gsc.tab=0 , diakses pada 26 Juni 2026.
- Engineering Tool Box (n.d.), 'Angular Motion - Power and Torque', *The Engineering Toolbox*, Available at : https://www.engineeringtoolbox.com/angular-velocity-acceleration-power-torque-d_1397.html, diakses pada 26 Juni 2026.
- Engineering Tool Box (n.d.), 'Fan – Efficiency and Power Consumption', *The Engineering Toolbox*, Available at : https://www.engineeringtoolbox.com/fans-efficiency-power-consumption-d_197.html#gsc.tab=0 , diakses pada 26 Juni 2026.
- Fu, HX & Liu, XH 2017, 'Review of the impact of liquid *desiccant* dehumidification on indoor air quality', *Building and Environment*, vol. 116, pp. 158-172, DOI:10.1016/j.buildenv.2017.02.014.
- Gorai, VK, Singh, SK & Jani, DB 2024, 'A comprehensive review on solid *desiccant*-assisted novel dehumidification and its advanced regeneration methods', *Journal of Thermal Analysis and Calorimetry*, vol. 149, no. 17, pp. 8979-9000, DOI:10.1007/s10973-024-13479-9.
- Hanif, S, Adiputra, S, Yaningsih, I, Budiana, EP 2023, 'Adsorption Characteristics of *Silica gel*-Water Pairs in Personal Protection Equipment', *Mekanika: Majalah Ilmiah Mekanika*, vol. 22, pp. 50-58, DOI: <https://dx.doi.org/10.20961/mechanika.v22i2.71250>

- Hraiech, I, Zallama, B, Belkhiria, S, Zili-Ghedira, L, Maatki, C, Hassen, W, Hadrich, B & Kolsi, L 2025, 'Experimental characterization of *silica gel* adsorption and desorption isotherms under varying temperature and relative humidity in a fixed bed reactor', *Scientific Reports*, vol. 15, pp. 29041, DOI:10.1038/s41598-025-14677-7.
- Innovative Air Technologies 2024, *Desiccant dehumidification with Innovative Air Technologies* [video], YouTube, diakses pada 20 Januari 2026, (<https://youtu.be/y9BW7N8nBTc>).
- Iqbal, W, Mahmood, M, Iqbal, S, Ali, M, Iqbal, MH, Hussien, AG & Kamel, S 2023, 'Techno-economic and emission analysis of solar assisted *desiccant* dehumidification: An experimental and numerical study', *Energy Reports*, vol. 10, pp. 2640–2654. DOI:10.1016/j.egyr.2023.08.077.
- Jani, DB 2020, 'Application of liquid *desiccant* cooling technology in built environment: a review', *International Journal of Modern Studies in Mechanical Engineering (IJMSME)*, vol. 6, no. 1, pp. 9–18, DOI:10.20431/2454-9711.061002.
- Kamsah, N, Mohamed Kamar, H, Wan Khairuzzaman, MI, Alhamid, MI & Zawawi, FM 2016, 'Performance assessment of a solid *desiccant* air *dehumidifier*', *Jurnal Teknologi (Sciences & Engineering)*, vol. 78, no. 8–4, pp. 57–64.
- Khan, K, Moses, SC, Kumar, A & Soni, S 2017, 'Design a seed metering wheel for sowing corn (*Zea mays*) seeds', *Plant Archives*, vol. 17, no. 2, pp. 1651–1657
- Kosasih, EA, Zikri, A, Dzaky, MI 2022, 'Water vapor desorption from *silica gel* in a combined drying and double-condenser compression refrigeration system, *Heliyon*, vol. 8, DOI: <https://doi.org/10.1016/j.heliyon.2022.e09757>
- Kurniawan, Y, Ruslani & Anggriawan, FA 2017, 'Analisa kinerja sistem heating *dehumidifier* menggunakan AC split untuk pengeringan ikan', *Jurnal Teknologi Terapan*, vol. 3, no. 1, pp. 41–47.
- LibreTexts, n.d, '10.1: Angular Acceleration', *LibreTexts Physics*, Available at : [https://phys.libretexts.org/Bookshelves/College_Physics/College_Physics_1e_\(OpenStax\)/10%3A_Rotational_Motion_and_Angular_Momentum/10.01%3A_Angular_Acceleration](https://phys.libretexts.org/Bookshelves/College_Physics/College_Physics_1e_(OpenStax)/10%3A_Rotational_Motion_and_Angular_Momentum/10.01%3A_Angular_Acceleration), diakses pada 26 Juni 2026.
- Li, Z & Tao, R 2023, 'Performance enhancement of *desiccant wheels* by

- adsorption/desorption in stages with type-S isotherm *desiccants*' *Journal of Applied Thermal Engineering*, vol. 224, p. 120068. DOI: <https://doi.org/10.1016/j.applthermaleng.2023.120068>
- Liu, L, Wu, R, Huang, H, Li, J, Bai, Y, He, Z, Deng, L, Wang, Z, Kubota, M & Kobayashi, N 2024, 'Theoretical study on the dehumidification behaviors of dual-*desiccants* coated cross-flow heat exchanger with staged adsorption-desorption process', *Energy*, vol. 297, pp. 131050, DOI:10.1016/j.energy.2024.131050.
- Mathwords, n.d. 'RPM — Definition, Formula & Examples', *Mathwords*, Available at : <https://www.mathwords.com/r/rpm.htm>, diakses pada 26 Juni 2026
- Mehare, HB, Hussain, T, Zia, MA, Saleem, S 2025, 'Performance evaluation of a rotary *dehumidifier* with molecular sieve *desiccant* using coupled regeneration mode: Experimental investigation', *Energy and Built Environment*, vol. 6, pp. 219-229, DOI: <https://doi.org/10.1016/j.enbenv.2023.10.008>
- Mohammed, R.H., Mesalhy, O., Abdelkareem, M., Hou, S., Su, M. & Chow, L.C., 2018. Physical properties and adsorption kinetics of silica-gel/water for adsorption chillers. *Applied Thermal Engineering*, vol. 137, pp.368–376, DOI: <https://doi.org/10.1016/j.applthermaleng.2018.03.088>
- Moran, M.J., Shapiro, H.N., Boettner, D.D. and Bailey, M.B., 2006. *Fundamentals of Engineering Thermodynamics*. 5th ed. Hoboken, NJ: John Wiley & Sons.
- Neutrium (n.d), 'Hydraulic Diameter', *Neutrium*. Available at : <https://neutrium.net/articles/fluid-flow/hydraulic-diameter/>, diakses pada 26 Juni 2026.
- Norazam, AS, Kamar, HM, Kamsah, N, Alhamid, MI 2019, 'simulation of adsorption process in a rotary solid *desiccant wheel*', *International Journal of Technology*, vol. 10, pp. 1120-1130, DOI: <https://dx.doi.org/10.14716/ijtech.v10i6.3590>
- Nuryanto, H n.d, 'Rumus Volume Balok dan Contoh-Contoh Soalnya', *Gramedia Blog*, Available at : <https://www.gramedia.com/literasi/rumus-volume-balok/>, diakses pada 26 Juni 2026.
- Open-Meteo, 2025. *Historical Weather API*. Available at : <https://open-meteo.com/en/docs/historical-weather-api>, diakses pada 25 Juni 2026
- OpenStax, n.d, '10.1 Rotational Variables', *LibreTexts Physics*, Available at :

<https://openstax.org/books/university-physics-volume-1/pages/10-1-rotational-variables> , diakses pada 26 Juni 2026.

Pamungkas, AD & Sasongko, SB 2023, 'Performansi *dehumidifier* pada variasi suhu ruangan dengan waktu pengujian yang berbeda', in Proceedings of the Seminar Nasional Teknologi Industri Berkelanjutan III (SENASTITAN III), Institut Teknologi Adhi Tama Surabaya, Surabaya.

PT. Damases Sejahtera, n.d., *Silica gel white*, PT. Damases Sejahtera, diakses pada 18 Juni 2026, (<https://damases.com/product/silica-gel-white/>)

Quipper 2019, 'Lihat Benda Berputar, Ingat Momen Inersia', Quipper Blog. Available at : <https://www.quipper.com/id/blog/mapel/fisika/lihat-benda-beputar-ingat-momen-inersia/>, diakses pada 14 Juli 2026.

Rambhad, KS, Walke, PV, Kalbande, VP, Kumbhalkar, MA, Khond, VW, Nandanwar, Y, Mohan, M & Jibhakate, R 2023, 'Experimental investigation of *desiccant* dehumidification with four different combinations of *silica gel desiccant wheel* on indoor air quality', *SN Applied Sciences*, vol. 5, no. 11, DOI:10.1007/s42452-023-05505-6.

Risno, SJ 2023, 'Rumus volume tabung lengkap dengan pengertian, ciri, dan jenisnya', Brilio.net, Available at: <https://www.brilio.net/ragam/rumus-volume-tabung-lengkap-dengan-pengertian-ciri-dan-jenisnya-230829d/jenis-jenis-rumus-volume-tabung-230829c.html>, Diakses pada 26 Juni 2026.

Saputra, DA, Osaka, Y, Tsujiguchi, T, Haruki, M, Kumita, M & Kodama, A 2020, 'Experimental investigation of *desiccant wheel* dehumidification control method for changes in regeneration heat *input*', *Energy*, vol. 205, pp. 118109, DOI:10.1016/j.energy.2020.118109.

Sari, LH, Zahriah & Zuhriana 2021, Pengaruh karakter arsitektur tropis pada desain rumah Belanda, Syiah Kuala University, Banda Aceh.

Su, M, Han, X, Dai, Y, Wang, J, Liu, J & Yan, J 2024, 'Investigation on recirculated regenerative solid *desiccant*-assisted dehumidification system: Impact of system configurations and *desiccant* materials', *Energy*, vol. 286, pp. 129629, DOI:10.1016/j.energy.2023.129629.

Surbakti, JS, Yunianto, B & Muchammad 2024, 'Dehumidifikasi udara tertutup menggunakan *desiccant* karbon aktif', *Jurnal Teknik Mesin S-I*, vol. 12, no. 1,

pp. 91–98.

Tsubaki n.d., *technical data Synchronous Belts and Belt Sprockets Selection*, Tsubaki, diakses pada 19 Februari 2026, (https://en.tt-net.tsubakimoto.co.jp/tecs/engd/tbl/engd_tbl_sen_kou.asp?utm_source=chatgpt.com).

Vision Air Quality (n.d), ‘Methods of Operation’, Available : <https://www.visionaq.com/methods-of-operation/>, diakses pada 1 Agustus 2026.

Wikipedia (n.d), ‘Darcy friction factor formulae’, *Wikipedia*. Available at : https://en.wikipedia.org/wiki/Darcy_friction_factor_formulae , diakses pada 26 Juni 2026.

Yadav, A, Yadav, L 2014, ‘Comparative performance of *desiccant wheel* with effective and ordinary regeneration sector using mathematical model’, *Heat Mass Transfer*, vol. 50, pp. 1465-1478, DOI: 10.1007/s00231-014-1349-6

Yang, G, Yu, W, Chen, W & Jiao, S 2025, ‘Experimental investigation of rotating *wheel* speed and regeneration temperature effects on marine dual-stage *desiccant* dehumidification fresh-air pre-treatment system performance’, *Processes*, vol. 13, no. 3, DOI:10.3390/pr13030669.

Yang, J & Kim, YI 2025, ‘Experimental analysis of energy savings in a combined rotary *desiccant dehumidifier* with a purge section’, *Sustainability*, vol. 17, no. 9, DOI:10.3390/su17094126.

Ybyraiymkul, D, Chen, Q, Burhan, M, Akhtar, FH, AlRowais, R, Shahzad, MW, Ja, MK & Ng, KC 2023, ‘Innovative solid *desiccant* dehumidification using distributed microwaves’, *Scientific Reports*, vol. 13, no. 1, pp. 1-12, DOI:10.1038/s41598-023-34542-9.

Yeboah, SK, Darkwa, J 2021, ‘Experimental Data on Water Vapour Adsorption on *Silica gel* in Fully Packed and Z-Annulus Packed Beds’, *Journal Pre-proof*, DOI: <https://doi.org/10.1016/j.dib.2021.106736>

YouTube (Holden and Associates 2024) Holden and Associates 2024, *Desiccant Dehumidification with Innovative Air Technologies*, YouTube, 18 October, diakses pada Desember 28 2025, (<https://youtu.be/y9BW7N8nBTc?si=5xCsbzVHtWsFB036>).

Yu, H, Seo, SW, Miksik, F, Thu, K, Miyazaki, T, Ng, KC 2022, 'Effects of temperature and *Humidity ratio* on the performance of *desiccant* dehumidification system under low-temperature regeneration', *Journal of Thermal Analysis and Calorimetry*, DOI: <https://doi.org/10.1007/s10973-022-11368-7>