

DAFTAR PUSTAKA

- Ahn, Y. H. (2006). *Sustainable nitrogen elimination biotechnologies: a review*. Process Biochemistry, 41(8), 1709-1721.
- Ali, M., Chai, L. Y., Tang, C. J., Zheng, P., Min, X. B., Yang, Z. H., Xiong, L., & Song, Y. X. (2013). *The Increasing Interest of Anammox Research in China: Bacteria, Process Development, and Application*. BioMed Research International, 2013. <https://doi.org/10.1155/2013/134914>
- Almi, A. (2019). *Penyisihan Nitrogen Dengan Proses Anammox Memanfaatkan Ampas Tebu Sebagai Media Lekat Pada Reaktor Up-Flow Anaerobic Sludge Blanket* (Doctoral dissertation, Universitas Andalas).
- Andújar, S., Hevia, E., Carretero, Y., Fenoy, C., Rowe, A., & López-Rodas, V. (1997). *Fluorescent lectins: the way forward in rapid algal identification*. Lagascalia, 19 (1-2), 479-484.
- Anisa, A., & Herumurti, W. (2017). *Pengolahan Limbah Domestik Menggunakan Moving Bed Biofilm Reactor (MBBR) dengan Proses Aerobik-Anoksik untuk Menurunkan Konsentrasi Senyawa Organik dan Nitrogen*. Jurnal Teknik ITS, 6(2), F361-F366.
- Aslam (2021) *Kinerja Bakteri Anammox Dari Talago Koto Baru Dalam Penyisihan Nitrogen Pada Suhu 35°C Menggunakan Reaktor Up-Flow Anaerobic Sludge Blanket (UASB)*. Diploma thesis, Universitas Andalas
- Barbazán, M., Mancassola, V., Arló, L., Borzacconi, L., & Passeggi, M. (2014). *Agronomic use of slurry from anaerobic digestion of agroindustrial residues: effects on crop and soil*. Journal of Sustainable Bioenergy Systems, 2014.
- Bernhard, A. (2010). *The Nitrogen Cycle: Processes, Players, and Human Impact*. Nature Education Knowledge, 2(2), 1–8.
- Bestari (2021) *Kinerja Bakteri Anammox Dari Talago Koto Baru Dalam Penyisihan Nitrogen Pada Suhu 30°C Menggunakan Reaktor Up-Flow Anaerobic Sludge Blanket (UASB)*
- Bitton, G. (2005). *Wastewater microbiology*. John Wiley & Sons.
- Cao, H., Hong, Y., & Gu, J. D. (2013). *Using the variation of anammox bacteria community structures as a bio-indicator for anthropogenic/terrestrial nitrogen inputs in the Pearl River Delta (PRD)*. Applied microbiology and biotechnology, 97, 9875-9883.

- Carlos-Hernandez, S., Beteau, J. F., & Sanchez, E. N. (2007). *Intelligent control strategy for an anaerobic fluidized bed reactor*. IFAC Proceedings Volumes, 40(4), 73-78.
- Casagrande, C. G., Kunz, A., De Prá, M. C., Bressan, C. R., & Soares, H. M. (2014). *High nitrogen removal rate using ANAMMOX process at short hydraulic retention time*. Water Science and Technology, 67(5), 968-975.
- Chairani, M., Elystia S., Sri Rezeki Muria, S.R. (2021). *Penyisihan Nitrogen Total Dalam Limbah Cair Hotel Dengan Sistem Moving Bed Biofilm Reactor Menggunakan Chlorella sp*. Jurnal Sains dan Teknologi. 10(1), 16-27.
- Chen, Z., Higgins, D., & Chen, Z. (2010). *Nitrogen doped carbon nanotubes and their impact on the oxygen reduction reaction in fuel cells*. Carbon, 48(11), 3057-3065.
- Cho, S., Kambey, C., & Nguyen, V. K. (2020). *Performance of anammox processes for wastewater treatment: A critical review on effects of operational conditions and environmental stresses*. Water (Switzerland), 12(1). <https://doi.org/10.3390/w1201002>
- Dapena-Mora, A., Campos, J. L., Mosquera-Corral, A., Jetten, M. S. M., & Méndez, R. (2004). *Stability of the ANAMMOX process in a gas-lift reactor and a SBR*. Journal of biotechnology, 110(2), 159-170.
- Dapena-Mora, A., Fernandez, I., Campos, J. L., Mosquera-Corral, A., Mendez, R., & Jetten, M. S. M. (2007). *Evaluation of activity and inhibition effects on Anammox process by batch tests based on the nitrogen gas production*. Enzyme and microbial technology, 40(4), 859-865.
- Djuwansah, M. R., Suriadarma, A., Suherman, D., Rusydi, A. F., & Nailly, W. (2009). *Pencemaran Air Permukaan dan Airtanah Dangkal di Hilir Kota Cianjur*. Jurnal Riset Geologi Dan Pertambangan. 2(2), 109-121.
- Dong, L. F., Sobey, M. N., Smith, C. J., Rusmana, I., Phillips, W., Stott, A., ... & Nedwell, D. B. (2004). *Dissimilatory reduction of nitrate to ammonium, not denitrification or anammox, dominates benthic nitrate reduction in tropical estuaries*. Limnology and Oceanography, 56(1), 279-291.
- Dong, X., & Tollner, E. W. (2003). *Evaluation of Anammox and denitrification during anaerobic digestion of poultry manure*. Bioresource Technology, 86(2), 139-145.
- Du, R., Peng, Y., Ji, J., Shi, L., Gao, R., & Li, X. (2019). *Partial denitrification providing nitrite: Opportunities of extending application for anammox*. Environment International, 131, 105001.

- Ermaliza, W. (2019). *Nitrogen Removal in the Anammox Biofilm Reactor using Palm Fiber as Carrier in Tropical Temperature Operation*. Jurnal Riset Teknologi Pencegahan Pencemaran Industri, 10(2), 7-15.
- Faldi, L., Silvia, S., & Zulkarnaini, Z. (2022). *Penyisihan Nitrogen dengan Proses Anammox Menggunakan Lumpur Muara Penjalinan Kota Padang sebagai Inokulum: Nitrogen Removal by Anammox Process Using Sludge from Muara Penjalinan of Padang City as Inoculum*. Jurnal Teknologi Lingkungan, 23(2), 143-150.
- Fernández, I., Dosta, J., Fajardo, C., Campos, J. L., Mosquera-Corral, A., & Méndez, R. (2012). *Short-and long-term effects of ammonium and nitrite on the Anammox process*. Journal of Environmental Management, 95, S170-S174.
- Firestone, M., Kavlock, R., Zenick, H., Kramer, M., & the US EPA Working Group on the Future of Toxicity Testing. (2010). *The US Environmental Protection Agency strategic plan for evaluating the toxicity of chemicals*. Journal of Toxicology and Environmental Health, Part B, 13(2-4), 139-162.
- Furukawa, H., & Gouaux, E. (2003). *Mechanisms of activation, inhibition and specificity: crystal structures of the NMDA receptor NR1 ligand-binding core*. The EMBO journal, 22(12), 2873-2885.
- Fux, C., & Siegrist, H. (2004). *Nitrogen removal from sludge digester liquids by nitrification/denitrification or partial nitritation/anammox: environmental and economical considerations*. Water Science and Technology, 50(10), 19-26.
- He, Q., Chen, D., Wei, L., Zou, Z., Zhou, J., & Zhang, H. (2015). *Microbial community in a hydrogenotrophic denitrification reactor based on pyrosequencing*. Applied microbiology and biotechnology, 99, 10829-10837.
- Herlambang, A., & Marsidi, R. (2003). *Proses Denitrifikasi dengan Sistem Biofilter Untuk Pengolahan Air Limbah*. Jurnal Teknologi Lingkungan. 4(1), 46–55.
- Hutagalung, H. P., & Rozak, A. (1997). *Penetuan Kadar Nitrat. Metode Analisis Air Laut, Sedimen, dan Biota*. Pusat Penelitian dan Pengembangan Oseanografi. LIPI. Jakarta.
- Isaka, K., Sumino, T., & Tsuneda, S. (2007). *High nitrogen removal performance at moderately low temperature utilizing anaerobic ammonium oxidation reactions*. Journal of bioscience and bioengineering, 103(5), 486-490.
- Jarusutthirak, C., Mattaraj, S., & Jiraratananon, R. (2007). *Influence of inorganic scalants and natural organic matter on nanofiltration membrane fouling*. Journal of membrane Science, 287(1), 138-145.

- Jenni, S., Vlaeminck, S. E., Morgenroth, E., & Udert, K. M. (2014). *Successful application of nitritation/anammox to wastewater with elevated organic carbon to ammonia ratios*. Water research, 49, 316-326.
- Jetten, M. S., Strous, M., van de Pas-Schoonen, K. T., Schalk, J., van Dongen, U. G., van de Graaf, A. A., Loosdrecht, M. C. M. Van. (1998). *FEMS Microbiology Reviews*. The anaerobic oxidation of ammonium, 22(5),421-437.
- Jin, R. C., Zheng, P., Hu, A. H., Mahmood, Q., Hu, B. L., & Jilani, G. (2008). *Performance comparison of two anammox reactors: SBR and UBF*. Chemical Engineering Journal, 138(1-3), 224-230.
- Jin, R., Yang, G., Yu, J., & Zheng, P. (2012). Retrieved from *The inhibition of the Anammox process*. Chemical Engineering Journal. <https://doi.org/10.1016/j.cej.2012.05.014>.
- Kartal, B., Kuypers, M. M., Lavik, G., Schalk, J., Op den Camp, H. J., Jetten, M. S., & Strous, M. (2007). *Anammox bacteria disguised as denitrifiers: nitrate reduction to dinitrogen gas via nitrite and ammonium*. Environmental microbiology, 9(3), 635-642.
- Karthikeyan, O.P. dan K. Joseph . (2009). *Centre for Environmental. "ANAMMOX" a novel process for nitrogen management in bioreactor landfills – a review*.
- Khramenkov, S. V., Kozlov, M. N., Kevbrina, M. V., Dorofeev, A. G., Kazakova, E. A., Grachev, V. A., ... & Nikolaev, Y. A. (2013). *A novel bacterium carrying out anaerobic ammonium oxidation in a reactor for biological treatment of the filtrate of wastewater fermented sludge*. Microbiology, 82, 628-636.
- Kimura, Y., Isaka, K., & Kazama, F. (2011). *Effects of inorganic carbon limitation on anaerobic ammonium oxidation (anammox) activity*. Bioresource technology, 102(6), 4390-4394.
- Kindaichi, T., Awata, T., Mugimoto, Y., Rathnayake, R. M. L. D., Kasahara, S., & Satoh, H. (2016). *Effects of organic matter in livestock manure digester liquid on microbial community structure and insitu activity of anammox granules*. Chemosphere, 159,300–307.
<https://doi.org/10.1016/j.chemosphere.2016.06.018>
- Kumar, R., Saifuddin, M., Dixit, A., & Das, T. (2016). *Anoxic-aerobic SBR system for nitrate, phosphate and COD removal from high-strength wastewater and diversity study of microbial communities*. Biochemical Engineering Journal, 105, 80-89.

- Laureni, M., Weissbrodt, D. G., Szivák, I., Robin, O., Nielsen, J. L., Morgenroth, E., & Joss, A. (2015). *Activity and growth of anammox biomass on aerobically pre-treated municipal wastewater*. Water research, 80, 325-336.
- Lavik, G., & Kuenen, J. G. (2003). *Anaerobic ammonium oxidation by anammox bacteria in the Black Sea*. March 2014. <https://doi.org/10.1038/nature01472>
- Lavik, G., Schmid, M., Jørgensen, B. B., Kuenen, J. G., ... & Jetten, M. S. (2003). *Anaerobic ammonium oxidation by anammox bacteria in the Black Sea*. Nature, 422(6932), 608-611.
- Leitão, R. C., Van Haandel, A. C., Zeeman, G., & Lettinga, G. (2006). *The effects of operational and environmental variations on anaerobic wastewater treatment systems: A review*. Bioresource technology, 97(9), 1105-1118.
- Lettinga, G., & Hulshoff Pol, L. W. (1991). *UASB-process design for various types of wastewaters*. Water science and technology, 24(8), 87-107.
- Lettinga, G., van Velsen, A.F.M., Hobma, S.W., de Zeeuw, W., Klapwijk, A.,. (1980). *Use of the upflow sludge blanket (USB) reactor concept for biological wastewater treatment, especially for anaerobic treatment*. Biotechnol Bioeng. 22, 699-734.
- Lin, X. & Wang, Y. (2017). *Microstructure of anammox granules and mechanisms endowing their intensity revealed by microscopic inspection and rheometry*. Water Research, 120, 22–31. <https://doi.org/10.1016/j.watres.2017.04.053>
- Lotti, T., Kleerebezem, R., Lubello, C., & van Loosdrecht, M. C. (2014). *Physiological and kinetic characterization of a suspended cell anammox culture*. Water research, 60, 1-14.
- Lulrahman, F., Silvia,S., Zulkarnaini . (2022). *Penyisihan Nitrogen dengan Proses Anammox Menggunakan Lumpur Muara Penjalinan Kota Padang sebagai Inokulum*. Jurnal Teknologi Lingkungan. Vol. 23 No. 2, 143-150.
- Ma, B., Peng, Y., Zhang, S., Wang, J., Gan, Y., Chang, J., Wang, S., Wang, S., Zhu, G. (2013). *Performance of anammox UASB reactor treating low strength wastewater under moderate and low temperatures*. Bioresource Technology. 129, 606-611.
- Manahan, S. E. (2005). *Environmental chemistry*. CRC press.
- Miao, Y., Zhang, J., Peng, Y., & Wang, S. (2019). *An improved start-up strategy for mainstream anammox process through inoculating ordinary nitrification sludge and a small amount of anammox sludge*. Journal of hazardous materials, 384, 121325.

- Mulder, A., Van de Graaf, A. A., Robertson, L. A., & Kuenen, J. G. (1995). *Anaerobic ammonium oxidation discovered in a denitrifying fluidized bed reactor*. FEMS microbiology ecology, 16(3), 177-183.
- Namre (2021) *Kinerja Bakteri Anammox Dari Talago Koto Baru Dalam Penyisihan Nitrogen Menggunakan Reaktor Up-Flow Anaerobic Sludge Blanket (UASB) Pada Suhu 20°C*. Masters thesis, Universitas Andalas.
- Ni, S. Q., Gao, B. Y., Wang, C. C., Lin, J. G., & Sung, S. (2011). *Fast start-up, performance and microbial community in a pilot-scale anammox reactor seeded with exotic mature granules*. Bioresource Technology, 102(3), 2448-2454.
- Ni, S. Q., Gao, B. Y., Wang, C. C., Lin, J. G., & Sung, S. (2011). *Fast start-up, performance and microbial community in a pilot-scale anammox reactor seeded with exotic mature granules*. Bioresource Technology, 102(3), 2448-2454.
- Oshiki, M., Shimokawa, M., Fujii, N., Satoh, H., & Okabe, S. (2011). *Physiological characteristics of the anaerobic ammonium-oxidizing bacterium 'Candidatus Brocadia sinica'*. Microbiology, 157(6), 1706-1713.
- Pérez, J., Reino, C., Suárez-Ojeda, M. E. & Carrera, J. (2018). *Stable long-term operation of an upflow anammox sludge bed reactor at mainstream conditions*. Water research, 128, 331-340.
- Pinar, G., & Ramos, J. L. (1997). *A strain of Arthrobacter that tolerates highconcentrations of nitrate*. Biodegradation, 8, 393-399.
- Prayitno, P. (2014). *Pengurangan nitrogen pada limbah cair terolah industri penyamakan kulit menggunakan sistem wetland buatan*. Majalah Kulit, Karet, Dan Plastik, 30(2), 79-86.
- Putra, R. P., & ZULKARNAINI, P. S. K. (2020). *Start-Up Proses Anammox Menggunakan Lumpur Telaga Koto Baru sebagai Inokulum Start-Up Anammox Process Using Sludge from Koto Baru Lake as Inoculum*. Jurnal Teknologi Lingkungan Vol, 21(2), 138-146.
- Qian, G., Wang, J., Kan, J., Zhang, X., Xia, Z., Zhang, X. & Sun, J. (2018). *Diversity and distribution of anammox bacteria in water column and sediments of the Eastern Indian Ocean*. International Biodeterioration & Biodegradation, 133, 52-62.
- Rizqon, A. (2022). *Kinerja Penyisihan Nitrogen Dengan Bakteri Candidatus Brocadia fulgida Menggunakan Membrane Bioreactor (MBR) Pada Hydraulic Retention Time (HRT) 12 Jam* (Doctoral dissertation, Universitas Andalas).

- Rusmana, I. (2003). *Physiology of nitrous oxide production in estuarine dissimilative nitrate reducing bacteria*.
- Schmid, M. C., Maas, B., Dapena, A., van de Pas-Schoonen, K., van de Vossenberg, J., Kartal, B., ... & Strous, M. (2005). *Biomarkers for in situ detection of anaerobic ammonium-oxidizing (anammox) bacteria*. Applied and environmental microbiology, 71(4), 1677-1684.
- Septiani, U., Arief, S., & Hamdi, H. (2011). *Sintesis, Karakterisasi, Dan Uji Aktifitas Fotokatalitik Nanopartikel Magnetik TiO₂-CoFe₂O₄*. Jurnal Riset Kimia, 4(2), 71-71.
- Simbolon, A. R. (2016). *Pencemaran Bahan Organik dan Eutrofikasi di Perairan Cituis, Pesisir Tangerang*. Jurnal Pro-Life, 3(2), 109-118.
- Sofia, C., Sofia, P., Ana, L., & Etelvina, F. (2012). *The influence of glutathione on the tolerance of Rhizobium leguminosarum to Cadmium*. (pp. 89-100). Springer Vienna.
- Strous, M., Kuenen, J. G., & Jetten, M. S. (1999). *Key physiology of anaerobic ammonium oxidation*. Applied and environmental microbiology, 65(7), 3248-3250.
- Tang, C. J., Zheng, P., Wang, C. H., Mahmood, Q., Zhang, J. Q., Chen, X. G., ... & Chen, J. W. (2011). *Performance of high-loaded ANAMMOX UASB reactors containing granular sludge*. Water Research, 45(1), 135-144.
- Van de Graaf, A. A., Mulder, A., de Bruijn, P. E. T. E. R., Jetten, M. S., Robertson, L. A., & Kuenen, J. G. (1995). *Anaerobic oxidation of ammonium is a biologically mediated process*. Applied and environmental microbiology, 61(4), 1246-1251.
- Van De Vossenberg, J., Ratray, J. E., Geerts, W., Kartal, B., Van Niftrik, L., Van Donselaar, E. G., ... & Jetten, M. S. (2008). *Enrichment and characterization of marine anammox bacteria associated with global nitrogen gas production*. Environmental microbiology, 10(11), 3120-3129.
- Van der Star, W. R., Abma, W. R., Blommers, D., Mulder, J. W., Tokutomi, T., Strous, M., ... & van Loosdrecht, M. C. (2007). *Startup of reactors for anoxic ammonium oxidation: experiences from the first full-scale anammox reactor in Rotterdam*. Water research, 41(18), 4149-4163.
- Van Dongen, U., Jetten, M. S. M., & Van Loosdrecht, M. C. M. (2001). *The SHARON-Anammox Process for Treatment of Ammonium Rich Wastewater*. Water Science and Technology, 44(1), 153–160. <https://doi.org/10.2166/wst.2001>.
- Van Loosdrecht, M. C. (2008). *The membrane bioreactor: a novel tool to grow*

- anammox bacteria as free cells.* Biotechnology and bioengineering, 101(2), 286-294.
- Viancelli, A., Kunz, A., Esteves, P. A., Bauermann, F. V., Furukawa, K., Fujii, T., ... & Vanotti, M. (2011). *Bacterial biodiversity from an anaerobic up flow bioreactor with ANAMMOX activity inoculated with swine sludge.* Brazilian Archives of Biology and Technology, 54, 1035-1041.
- WAGIMAN, W. (2007). *Identification of Potential Biogas Production from Tofu Wastewater with Upflow Anaerobic Sludge Blanket Reactor (UASB).* Asian Journal of Tropical Biotechnology, 4(2), 41-45.
- Wagiman. (2007). *Identifikasi Potensi Produksi Biogas dari Limbah Cair Tahu dengan Reaktor Upflow Anaerobic Sludge Blanket (UASB).* Bioteknologi, 4(2), 41–45.
- Waki, M., Tokutomi, T., Yokoyama, H., & Tanaka, Y. (2007). *Nitrogen removal from animal waste treatment water by anammox enrichment.* Bioresource technology, 98(14), 2775-2780.
- Wang, T., Zhang, H., Yang, F., Liu, S., Fu, Z., & Chen, H. (2009). *Start-up of the Anammox process from the conventional activated sludge in a membrane bioreactor.* Bioresource technology, 100(9), 2501-2506.
- Wantasen, S. (2012). *Sebaran spasial ekologi Nitrogen di danau Tondano provinsi Sulawesi Utara* (Doctoral dissertation, Universitas Gadjah Mada).
- Wijaya, I., Soedjono, E. S., & Fitriani, N. (2017, November). *Development of anaerobic ammonium oxidation (anammox) for biological nitrogen removal in domestic wastewater treatment (Case study: Surabaya City, Indonesia).* In AIP Conference Proceedings. 193(1).
- Zhang, L., & Okabe, S. (2017). *Rapid cultivation of free-living planktonic anammox cells.* Water Research, 127, 204-210.
- Zhang, Z. Z., Deng, R., Cheng, Y. F., Zhou, Y. H., Buayi, X., Zhang, X., ... & Jin, R. C. (2015). *Behavior and fate of copper ions in an anammox granular sludge reactor and strategies for remediation.* Journal of Hazardous Materials, 300, 838-846.
- Zhao, B. Y. (2008). Int. J. Hydrogen Energy. *Optimization of hydrogen production in a granule-based UASB reactor,* 33, 2454-2461.
- Zulfa, M. (2020). *Penyisihan Nitrogen Dengan Proses Anammox pada Reaktor UpFlow Anaerobic Sludge Blanket (UASB) Memanfaatkan Batu Apung Sebagai Media Lekat.* Universitas Andalas.

Zulkarnaini, Afrianita, R., & Putra, I. H. (2020). *Application of Anammox Process in Nitrogen Removal Using Up-Flow Anaerobic Sludge Blanket.* Jurnal Teknologi Lingkungan, 21(January), 031–039.

Zulkarnaini, Yujie, Q., Yamamoto-Ikemoto, R., & Matsuura, N. (2018). *One-Stage Nitritation/Anammox Process Using a Biofilm Reactor with Two-Inflow.* Journal of Water and Environment Technology, 16(2), 106–114. <https://doi.org/10.2965/jwet.17-050>

Zulkarnaini. (2020). *Penemuan dan Aplikasi Anammox* (First). Andalas University

Zulkarnaini. (2021). *Teknik Kultivasi dan Identifikasi Bakteri Anammox Teknik Kultivasi dan Identifikasi Bakteri Anammox.*

Zumft, W. G. (1997). *Cell biology and molecular basis of denitrification.* Microbiology and molecular biology reviews: MMBR, 61(4), 533–616. <https://doi.org/10.1128/MMBR.61.4.533-616.1997>

