



## DAFTAR PUSTAKA

- Adiman, T. M. F. et al. (2020) ‘Mineral Struvite Dari Batuan Dolomit Dengan Reaktor Kolom Sekat’, *Jurnal Teknik Kimia*, 14(2), pp. 85–91. doi: 10.33005/jurnal\_tekkim.v14i2.2034.
- Aminah, S., Sudarno and Purwono (2017) ‘Pengolahan Sampah Organik Secara Biodrying Studi Kasus : Sayuran Kangkung’, *Jurnal Teknik Lingkungan*, 6(1), pp. 1–8.
- Ariyanto, E., Melani, A. and Anggraini, T. (2015) ‘Penyisihan PO<sub>4</sub> Dalamair Limbah Rumah Sakit Untuk’, *Jurnal.Ftumj*, (November 2015), pp. 1–8.
- Ariyanto, E., Katerina, L. and Dwiyani, D. S. (2019) ‘Pengaruh pH dan Rasio Reaktan PO<sub>4</sub> : Mg Terhadap Penurunan Kandungan PO<sub>4</sub> dalam Urine Melalui Proses Pembentukan Struvite Kristal’, (1), pp. 1–5.
- Basuki, K. H. (2021) ‘Aplikasi Logaritma dalam Penentuan Derajat Keasaman ( pH )’, (58), pp. 29–38.
- Capdevielle, A, Sýkorová, E, Biscans, B, Béline, F & Daumer, M L 2013, “*Optimization Of Struvite Precipitation In Synthetic Biologically Treated Swine Wastewater Determination Of The Optimal Process Parameters*”, *Journal of Hazardous Materials*, vol. 244 - 245, hh. 357 - 369.
- Cusick, D, R, dan Logan, B, E, 2012, “*Phosphate Recovery as Struvite Within A Single Chamber Microbial Electrolysis Cell*”, *Bioresource Technology* 107, 2012: 110-115.
- Edahwati, L., Sutiyono and Anggriawan, R. R. (2021) ‘Pembentukan Pupuk *Struvite* dari Limbah Cair Industri Tempe dengan Proses Aerasi’, *Jurnal Teknologi Lingkungan*, 22(2), pp. 215–221. doi: 10.29122/jtl.v22i2.4721.
- Fitriana, A. R. and Warmadewanthi, I. (2016) ‘Penurunan Kadar Amonium dan Fosfat pada Limbah Cair Industri Pupuk’, *Jurnal Teknik ITS*, 5(2). doi: 10.12962/j23373539.v5i2.16523.
- Gell, K. et al. (2011) ‘*Safety and Effectiveness of Struvite from Black Water and Urine as a Phosphorus Fertilizer*’, *Journal of Agricultural Science*, 3(3), pp. 67–80. doi: 10.5539/jas.v3n3p67.



Laporan Hasil Penelitian  
“Recovery Fosfat pada Hasil Ekstraksi Dolomit Sebagai Mineral  
*Struvite* Dengan Metode Aerasi”

---

- Hamzah, S. et al. (2020) ‘Kinetika Reaksi Pembentukan Pupuk *Struvite* Dari Limbah Cair Tempe Secara *Batch*’, (September), pp. 1–2.
- Hao, X. et al. (2013) ‘*Looking beyond struvite for P-recovery*’, *Environmental Science and Technology*, 47(10), pp. 4965–4966. doi: 10.1021/es401140s.
- Hartanto, E. S. (2009) ‘Penerapan SNI Produk Pupuk Fosfat Alam Untuk Pertanian Oleh Industri’, *Jurnal Standardisasi*, 11(1), pp. 57–62.
- Ikhlash, N. 2017. “Pengaruh pH, Rasio Molar, Jenis Presipitasi, dan Ion Pengganggu dalam Recovery Amonium dan Fosfat pada Limbah Cair PT Petrokimia Gresik dengan Metode Presipitasi *Struvite*”. Surabaya: Thesis Jurusan Teknik Lingkungan ITS.
- Kabdaşlı, I. and Tünay, O. (2018) ‘*Nutrient recovery by struvite precipitation, ion exchange and adsorption from source-separated human urine—a review*’, *Environmental Technology Reviews*, 7(1), pp. 106–138. doi: 10.1080/21622515.2018.1473504.
- Kasno, A., Rochayati, S. and Prasetyo, B. H. (2009) ‘Deposit, penyebaran dan karakteristik fosfat alam’, *Fosfat Alam*, 3, p. 21.
- Kataki, S dan Baruah D.C. 2018. “*Prospects and Issues of Phosphorus Recovery as Struvite from Waste Streams* “. Department of Energy, Tezpur University, India.
- Kataki, S., West, H., Clarke, M., dan Baruah, D.C. 2016. “*Phosphorus Recovery as Struvite: Recent Concerns for Use of Seed, Alternative Mg Source, Nitrogen Conservation And Fertilizer Potential*”. *Resources, Conservation and Recycling*, 107: 142-156.
- Kim, D. et al. (2016) ‘*Effects of pH, molar ratios and pre-treatment on phosphorus recovery through struvite crystallization from effluent of anaerobically digested swine wastewater*’, *Environmental Engineering Research*, 22(1), pp. 12–18. doi: 10.4491/eer.2016.037.
- Latief, A, S, M, Luluk, E, & Karina, Y, D, P, 2021. “Recovery Fosfat Pada Limbah Cair Industri Pupuk Sebagai Mineral *Struvite* Menggunakan Reaktor Sekat”,
-



Laporan Hasil Penelitian  
“Recovery Fosfat pada Hasil Ekstraksi Dolomit Sebagai Mineral  
Struvite Dengan Metode Aerasi”

---

- Lee, J. E., Rahman, M. M. and Ra, C. S. (2009) ‘Dose effects of Mg and PO<sub>4</sub> sources on the composting of swine manure’, *Journal of Hazardous Materials*, 169(1–3), pp. 801–807. doi: 10.1016/j.jhazmat.2009.04.026.
- Li, J dkk. 2019. “Factors Influencing the Removal of Phosphorus and the Purity of Recycling Struvite in Wastewater by the Electrochemical Sacrificial Magnesium Anode Method” *Science of Advanced Materials* .Vol. 11, pp. 128–134.
- Liu, Y. H., Kumar, S., Kwag, J. H., Kim, J. H., Kim, J. D., Ra, C. S. 2011. “Recycle of Electrolytically Dissolved Struvite as An Alternative to Enhance Phosphate and Nitrogen Recovery from Swine Wastewater”. *Journal of Hazardous Material* 195: 175-181.  
<https://doi.org/10.1016/j.jhazmat.2011.08.022>
- Liu, X. and Wang, J. (2019) ‘Impact of calcium on struvite crystallization in the wastewater and its competition with magnesium’, *Chemical Engineering Journal*. doi: 10.1016/j.cej.2019.122121.
- Muryanto, 2017, “On precipitation of struvite (MgNH<sub>4</sub>PO<sub>4</sub>·6H<sub>2</sub>O)”, *Journal of Science and Science Education*, Vol. 1 No. 2, hh. 22.
- Perwitasari, L. Edahwati, S. Sutiyono, S. Muryanto, J. Jamari & A. P. Bayuseno, 2017, “Phosphate Recovery Through Struvite-Family Crystals Precipitated In The Presence Of Citric Acid: Mineralogical Phase And Morphology Evaluation”, *ENVIRONMENTAL TECHNOLOGY journal*, hal. 6.
- Rahman, M. M., Liu, Y. H., Kwag, J. H., & Ra, C. S, 2011, “Recovery Of Struvite From Animal Wastewater And Its Nutrient Leaching Loss in Soil”, *Journal of Hazardous Materials*, 186(2–3), 2026–2030.
- Rahman, M. M., Salleh, M. A. M., Rashid, U. Ahsan, A., Hossain, M. M., dan Ra, C. S, 2014, “Production of Slow Release Crystal Fertilizer from Wastewaters Through Struvite Crystallization – A Review”, *Arabian Journal of Chemistry* 7: 139–155.
- Ronteltap, M., Maurer, M., dan Gujer, W. 2007. “Struvite Precipitation Thermodynamics in Source-Separated Urine”. *Water Research* 5: 977-984.
-



Laporan Hasil Penelitian  
“Recovery Fosfat pada Hasil Ekstraksi Dolomit Sebagai Mineral  
Struvite Dengan Metode Aerasi”

---

- Rosika, K., Dian, A. and Djoko, K. (2007) ‘Pengujian Kemampuan XRF untuk Analisis Komposisi Unsur Paduan Zr-Sn-Cr-Fe-Ni’, Prosiding Seminar Nasional Sains dan Teknologi Nuklir PTNBR – BATAN Bandung, 17 – 18 Juli 2007, pp. 17–18.
- Septiana, Septiani, H, Zahra, N, Sutiyono & Edahwati, L 2020, ‘Pengolahan Bittern sebagai Pembentuk Pupuk Struvite Menggunakan Reaktor Sekat Secara Sinambung’, Jurnal Metalurgi dan Material Indonesia (JMMI), vol. 3, no.1, hh. 1-7.
- Setiabudi, A, Rifan, H & Ahmad, M, ‘Karakterisasi Material; Prinsip dan Aplikasinya dalam Penelitian Kimia’, Bandung, Universitas Pendidikan Indonesia.
- Soemargono. 2001. “ Kineika Reaksi Karbonatasi Suspensi Serbuk Batuan Marmer Dalam Reaktor Kolom Gelembung Bersekat Miring “. Jurnal Teknik Kimia 5(2) : 84-89.
- Solihin, S, Arini, T & Febriana, E 2017, ‘Pengaruh Temperatur Nukleasi terhadap Geometri Produk Magnesium Karbonat dari Bahan Baku Dolomit Madura’, [effect of Temperature on The Geometric Product Nucleation Magnesium Carbonate of Raw Materials Dolomite Madura]’, *Metalurgi*. doi: 10.14203/metalurgi.v28i2.249.
- Sutiyono, S. et al. (2016) ‘*Synthesis and characterisation of struvite family crystals by an aqueous precipitation method*’, in MATEC Web of Conferences. doi: 10.1051/mateconf/20165801006.
- Suzuki, K., Tanaka, Y., Kuroda, K., Hanajima, D., Fukumoto, Y., Yasuda, T., dan Waki, M., 2007. “*Removal and Recovery of Phosphorous from Swine Wastewater By Demonstration Crystallization Reactor And Struvite Accumulation Device*”. *Bioresour. Technol.* 98: 1573– 1578.
- Wang, J. 2003. “*Physical and Chemical Factors in Struvite Precipitation in CAFO Wastewater*”
- Wang, F, et all. 2019. “*Phosphate Recovery from Swine Wastewater by a Struvite Precipitation Electrolyzer*” <https://doi.org/10.1038/s41598-019-45085-3>.
-



Laporan Hasil Penelitian  
“Recovery Fosfat pada Hasil Ekstraksi Dolomit Sebagai Mineral  
Struvite Dengan Metode Aerasi”

---

- Warmadewanthi, Rodlia A , Ikhlas N , Pandebesie E S, Bagastyo A Y , dan W Herumurti. 2019. *The Effect of Mixing Rate on Struvite Recovery from The Fertilizer Industry*. doi:10.1088/1755-1315/506/1/012013
- Yuniarti, D, Y, Ria, K &Suhadi, A, 2019, “Pengaruh Proses Aerasi Terhadap Pengolahan Limbah Cair Pabrik Kelapa Sawit Di PTPN VII Secara Aerobik”, *Jurnal Teknik Kimia*, Vol. 4, No. 2, hh. 7-10.
- Zhang, T dkk. 2017. “*Phosphorus Recovery by Struvite Crystallization from Livestock Wastewater and Reuse as Fertilizer: A Review*”<http://dx.doi.org/10.5772/65692>
- Zhang, X Hu, J. Spanjers, H. Jules, B. Lier, V. 2016. “*Struvite Crystallization Under a Marine / Brackish Aquaculture Condition*”. *Bioresource Technology* 218. Hal 1151–1156