

DAFTAR PUSTAKA

- Agarry, S. E., and Solomon, B.O., 2008, *Kinetics Of Batch Microbial Degradation Of Phenols By Indigenous Pseudomonas Fluorescence*, J. Environ. Sci. Tech. 5 (2): 223-232.
- Aksu, Z., and Bülbül, G., 1999, *Determination of the effective diffusion coefficient of phenol in Ca-alginate-immobilized P. putida beads*. Enzyme and Microbial Technology, 25(3-5): 344–348.
- Antrim, R.L., Colilla, W., and Schnyder, B.J, 1979, *Glucose Isomerase Production of High-Fructose Syrups*, Clinton Corn Processing Company, Clinton, Iowa
- Arica ,M.Y., Bayramolu, M., Yilmaz, G., Bekta, M., and Genc, G., 2004, *Biosorption of Hg²⁺, Cd²⁺, and Zn²⁺ by Ca-Alginate and Immobilized Wood-Rotting Fungus Funalia Trogli*, J. Hazard. Mater 109: 191-199.
- Avnir, D.B., S, Lev O., and Ottolenghi, M., 1994, *Enzymes and Other Protein Entrapped in Sol-Gel material*. Chem Mater 6(10): 1605 – 1614
- Bandyopadhyay, K., Das, D., and Maiti, B.R., 1998, *Kinetics of phenol degradation using Pseudomonas putida MTCC 1194*, Bioprocess Engineering 18(5): 373–377.
- Bandhyopadhyay, K., Das, D., Bhattacharyya, P., and Maiti, B. R., 2001, *Reaction engineering studies on biodegradation of phenol by Pseudomonas putida MTCC 1194 immobilized on calcium alginate*, Biochemical Engineering Journal 8(3): 179–186.
- Bandhyopadhyay, K., Das, D., and Maiti, B. R., 1999, *Solid matrix characterization of immobilized Pseudomonas putida MTCC 1194 used for phenol degradation*, Applied Microbiology and Biotechnology 51(6): 891–895.
- Banerjee, I., Modak, J. M., Bandopadhyay, K., Das, D., and Maiti, B. R., 2001, *Mathematical model for evaluation of mass transfer limitations in phenol biodegradation by immobilized Pseudomonas putida*, Journal of Biotechnology 87(3): 211–223.
- Baron, W. R., 1996, *Gel Entrapment And Micro-encapsulation: Methods, Applications and Engineering Principles*, Reviews in Chemical Engineering 12:5-205

- Bashan, L.E., and Bashan, Y., 2010, *Immobilized Microalgae for Removing Pollutants: Review of Practical Aspects*, *Bioresour Technol* 101: 1611-1627.
- Blanch, H.W., 1996, *Biochemical Engineering*, Marce Decker.inc, 162-275.
- Callone, E., Campostrini, R., Carturan, G., and Guzzon, R., 2008, *Immobilization Of Yeast And Bacteria Cells In Alginate Microbeads Coated With Silica Membranes: Procedures , Physico-Chemical Features And Bioactivity*, *Journal of Biotechnology* 18(40): 4839–4848.
- Caplecha, Steven P., 1989, *Modeling And Operation Of Ethanol Fermentations Using Saccharomyces Cerevisiae Immobilized With Calcium Alginate*, University of Nebaska, Lincoln, Nebrasaka.
- Cassidy, M.B., Lee, H., and Trevors, J.T., 1996, *Enviromental Applications of Immobilized Microbila Cells*, a review *J.Ind.Microbiol* 16: 79-101.
- Castro, V.L. S.S.d, Jonsson, C.M., Silva, C.M.M., Maia, A.H.N.M.,2010, *Assessing the safety of Pseudomonas putida introduction in the environment: An overview of ecotoxicological tests*, *Regulatory Toxicology and Pharmacology* 56: 300–305.
- Chan, E.S., Lee, B.B., Ravindra, P., and Poncelet, D, 2009, *Prediction Models For Shape And Size Of Ca-Alginate Macrobeads Produced Through Extrusion–Dripping Method*, *Journal of Colloid and Interface Science* 338: 63-72
- Chung, T. P., Tseng, H. Y., and Juang, R. S., 2003, *Mass Transfer Effect And Intermediate Detection For Phenol Degradation In Immobilized Pseudomonas Putida Systems*, *Process Biochemistry* 38(10): 1497–1507.
- Colin, A. M., 2012, *Nanotechnology Cookbook Practical, Reliable and Jargon-free Experimental Procedures*, Elsevier Science: 85-87.
- Fogler, H. Scott, 2006, *Elements of Chemical Reaction Engineering Fourth Edition*, Pearson Education. pp.377- 469
- Gasserod, O., Smidsrod , O., and Skjak, B.G., 1999, *Microcapsules Of Alginate Chitosan. II. A Study Of Capsule Stability And Permeability*, *Biomaterials* 20:773-783.
- Gombotz, W. R., and Wee, S. F., (2012), *Protein release from alginate matrices*, *Advanced Drug Delivery Reviews* 64: 194–205.
- Gonz, P. S., Capozucca, C. E., Tigier, H. A., Milrad, S. R., and Agostini, E., 2006, *Phytoremediation Of Phenol From Wastewater , Peroxidases Of Tomato*

Hairy Root Cultures 39: 647–653.

Grant, G.T., Morris, E.R., Rees, D.A., Smith, P.J.C., and Thom, D.,1973, *Biological Interactions Between Polysaccharides And Divalent Cations: The Egg-Box Model*, FEBS Lett 32: 195-198.

Hannaford, A.M and Kuek, C., 1999, *Aerobic Batch Degradation Of Phenol Using Immobilized Pseudomonas putida*, Journal of Industrial Microbiology & Biotechnology 22(2): 121-126

Hill, G. A., and Robinson, C. W., 1975, *Substrate Inhibition Kinetics: Phenol Degradation By Pseudomonas Putida*, Biotechnology and Bioengineering 17(11): 1599–1615.

Hitzky, E. L., Ariga, K., and Lvov, Y., 2008 *Bio-inorganic Hybrid Nanomaterials, Strategies, Syntheses, Characterization and Applications*, Wiley-VCH: 75-102.

Husin, A, 2008, *Pengolahan Limbah Cair Industri Tahu Dengan Biofiltrasi Anaerob dalam Reactor Fixed-Bed*, Fakultas Teknik, Universitas Sumatera Utara, Medan.

Isyuniarto., U ,Widdi., P and ,Agus., S, 2005, *Degradasi Fenol Dalam Limbah Pengolahan minyak Bumi Dengan Ozon*, Prosiding PPI – PDIPTN

Jin, W., and Brennan ,J.D ., 2002, *Properties and Applications of Protein Encapsulated within Sol – Gel Deriver Materials*, Anal Chim Acta 461 (1): 1-36.

Jutono., Soedarsono, J., Hartadi, S., S, S. K., D, S., and Soesanto., 1980, *Pedoman Preaktikum Mikrobiologi Umum Untuk Perguruan Tinggi*, Departement Mikrobiologi, Fakultas Pertanian, Universitas Gadjah Mada, Yogyakarta. pp. 147-148

Kang, C., Wang, Y., Li, R., Du, Y., Li, J., Zhang, B., and Du, Y., 2000, *A Modified Spectrophotometric Method For The Determination Of Trace Amounts Of Phenol In Water*, Microchemical Journal 64(2): 161–171.

Kim, H. S., Lee, C., and L, E. Y,2011, *Alginate Lyase: Structure, Property, and Application*, Biotechnology and Bioprocess Engineering 16: 843-851

Kim, Y. M., Farrah, S., and Baney, R. H., 2007, *Membrane Damage Of Bacteria By Silanols Treatment*. Electronic Journal of Biotechnology 10.

Li, N., Jiang, J., Chen, D., Xu, Q., Li, H., and Lu, J., 2015, *A Reusable Immobilization Matrix For The Biodegradation Of Phenol At 5000 Mg/L*. Scientific Reports 5: 8628

- Liu, X. D., Bao, D. C., Xue, W. M., Xiong, Y., Yu, W. T., Yu, X. J., and Yuan, Q., 2002, *Preparation Of Uniform Calcium Alginate Gel Beads By Membrane Emulsification Coupled With Internal Gelation*. Journal of Applied Polymer Science 87: 848-852
- Mathur,A.K, Bala, Shashi., Majumder C.B., and Sarkar, S., 2010, *Kinetics Studies Of P-Cresol Biodegradation By Using Pseudomonas Putida In Batch Reactor And In Continuous Bioreactor Packed With Calcium Alginate Beads*, Water Science & Technology 62: 2920-2929
- Meyer, M., Fischer, A. and Hoffmann, H., 2002, *Novel Ringing Silica Gels That Do Not Shrink*, Journal of Physical Chemistry B 106: 1528–1533.
- Mohanty, S. S., 2012, *Microbial Degradation of Phenol*, Department Of Biotechnology and Medical Engineering National Institute Of Technology, Rourkela Orissa, India
- Mollaei, M., Abdollahpour, S., Atashgahi, S., Abbasi, H., Masoomi, F., Rad, I., and Akbari, K., 2010, *Enhanced Phenol Degradation By Pseudomonas Sp . SA01: Gaining Insight Into The Novel Single And Hybrid Immobilizations*.Journal of Hazardous Materials 175: 284–292
- Moya, M. L., Morley, M., Khanna, O., Opara, E. C., and Brey, E. M, 2012, *Stability of Alginate Microbead Properties In Vitro*, J Mater Sci Mater Med 23(4).
- Nair, C I., Jayachandran, K., and Shashidhar, S., 2008, *Biodegradation of Phenol*, African Journal of BioTecnology 7: 4951-4958.
- Oliver,AE., 2012, *Dry State Preservation of Nucleated Cells: Progress and Challenges*, Biopreserv Biobank 10(4): 376-385.
- Øyaas, J., Storro ., Hallvard ,Svendsen, and Levine, David W., 1995, *The Effective Diffusion Coefficient and the Distribution Constant for Small Molecules in Calcium-Alginate Gel Beads*,Biotech, Biotechnology And Bioengineering 47: 492-500.
- Poncelet, D., Babak, V., Dulieu, C., and Picot, A., 1999, *A Physico-Chemical Approach To Production Of Alginate Beads By Emulsification-Internal Ionotropic Gelation*. Journal Colloids and Surfaces A: Physicochemical and Engineering Aspects 155: 171–176.
- Poncelet, D., Poncelet, D, Smet, B., Beaulieu, C., Huguet, M. L., Fournier, A., and Neufeld, R. J., 1995, *Production Of Alginate Beads By Emulsification/Internal Gelation. II*. Physicochemistry Applied Microbiology and Biotechnology 43:644-650

- Rehm, H. J and Bettmann, H,1984, *Degradation Of Phenol By Polymer Entrapped Microorganisms*, Appl Microbiol Biotechnol 20:285-290
- Rochmadi, Agus, P., and Wahyu, H, 2009, *Pembuatan Mikrocapsul Dari Resin Urea-Formaldehid*, Fakultas Teknik, Universitas Gadjah Mada, Yogyakarta.
- Schiesser, W. E, and Graham, W. G, 2009, *A Compendium of Partial Differential Equation Models: Method of Lines Analysis with Matlab*, Cambridge University Press, New York.
- Silva, C. M., Ribeiro, A. J., Figueiredo, I. V., Gonçalves, A. R., and Veiga, F. , 2006, *Alginate Microspheres Prepared By Internal Gelation: Development And Effect On Insulin Stability*, International Journal of Pharmaceutics 311: 1-10
- Smidsrod, O., 1974, *Molecular Basis For Some Physical Properties Of Alginates In The Gel State*.Faday Discussions of chemical society 57: 263-274
- Soda, S., Ike, M. and Fujita, M., 1998, *Effects Of Inoculation Of A Genetically Engineered Bacterium On Performance And Indigenous Bacteria Of A Sequencing Batch Activated Sludge Process Treating Phenol*, J Ferment Bioeng 86: 90–96.
- Sugiura, S., Nakajima, M., and Seki, M., 2002, *Preparation Of Monodispersed Emulsion With Large Droplets Using Microchannel Emulsification*. Journal of the American Oil Chemists' Society 79: 515-519
- Thu, B., Bruheim, P., Espevik, T., Smidsrod, O., Soon-Shiong, P., and Skjak-Braek, G., 1996, *Alginate Polycation Microcapsules. II. Some Functional Properties*, Biomaterials 17 : 1069-1079.
- Torres, L. G., Sfinchez-de-la-vega, A., Beltr, N. A., and Jimdnez, B. E., 1998, *Production And Characterization Of A Ca-Alginate Biocatalyst For Removal Of Phenol And Chlorophenols From Wastewaters*. Process Biochemistry 33: 625-634
- Turhan, K., and Uzman, S., 2008, *Removal Of Phenol From Water Using Ozone*. Desalination 229 : 257–263
- Visted, T., Bjerkvig, R., and Enger, P. O., 1933, *Cell Encapsulation Technology As A Therapeutic Strategy For CNS Malignancies I*. Neuro Oncol 3(3): 201–210.
- Wang, G. H., and Zhan,L. M., 2006, *Using Novel Polysaccharide-Silica Hybrid Material to Construct An Amperometric Biosensor for Hydrogen Peroxide*, J.phys.Chem 110: 24864-24868.

Wong, T. Y., Preston, L. A., and Schiller, N. L.,2000, *Alginate Lyase: Review Ofmajor Sources And Enzyme Characteristics, Structure-Function Analysis, Biological Roles, And Applications*, Annu. Rev. Microbiol 54:289–340.

Zhang, W., 2015, *Encapsulation of Transgenic Cells for Gene Therapy*, Gene Therapy - Principles and Challenges. 191-208.