

DAFTAR PUSTAKA

- Agung, G.F.M., Hanafie, M.R., dan Mardina, P., 2013, Ekstraksi Silika dari Abu Sekam Padi dengan Pelarut KOH, *Konversi*, 2(1), 28-31.
- Ayu, M.A., Wardhani, S., dan Darjito, 2013, Studi Pengaruh Konsentrasi NaOH dan pH terhadap Sintesis Silika Xerogel Berbahan Dasar Pasir Kuarsa, *J. Kimia Student*, 2(2), 517-523.
- Betancor, L., Lopez-Gallego, F., Hidalgo, A., Alonso-morales, N., Dellamora-ortiz, G., Mateo, C., Fernandez-Lafuente, R., and Guisan, J.M., 2006, Different Mechanisms of Protein Immobilization on Glutaraldehyde Activated Supports: Effect of Support Activation and Immobilization Condition, *Enz. Microb. Tech.*, 39(4), 877-882.
- Bhatia, R.B., and Brinker, C.J., 2000, Aqueous Sol-Gel Process for Protein Encapsulation, *Chem. Mater.*, (8)12, 2434-2441.
- Brena, B.M. and Bastita-Viera F., 2006, *Immobilization of Enzyme and Cells*, Humana Press, Spanyol.
- Brinker, C.J., and Scherer, G.W., 1990, *Sol-Gel Science: The Physics and Chemistry of Sol-Gel Processing*, Academic Press, Cambridge.
- Buckley, A.M., and Greenblatt, M., 1994, Sol-Gel Preparation of Silica Gel, *J. Chem. Ed.*, 7(71), 599.
- Coradin, T., Boissier, M., and Livage, J., 2006, Sol-Gel Chemistry in Medicinal Science, *Curr. Med. Chem.*, 13, 99-108.
- Dave, B.C., Dunn, B., Valentine, J.S., and Zink, J.I., 1994, Sol-Gel Encapsulation Methods for Biosensor, *Anal. Chem.*, 66, 1120A-1127A.
- Determan, A.S., Trewyn, B.G., Lin, V.S-Y., Hamilton, M.N., and Narasimhan, B., 2004, Encapsulation, Stabilization, and Release of BSA-FTIC from Polyanhydride Microspheres, *J. Contr. Release*, 100, 97-109.
- Emawati, E., Yani, N.S., dan Idar, 2017, Analisis Kandungan Fosfor (P) dalam Dua Varietas Kubis (*Brassica oleracea*) di daerah Lembang Bandung, *IJPST*, 1(1), 8-14.
- Fahmi, H., dan Nurfalalah, A.L., 2016, Aplikasi Daya Serap Silika Gel Berbahan Dasar Abu Sekam Padi, *J. IpTEKS Terapan*, 10(3), 176-182.

- Fauzy, A., 2018, Enkapsulasi Protein Bovine Serum Albumin (BSA) Pada Matriks Silika Gel dari Tetraetilortosilikat (TEOS) dan Tetrametilortosilikat (TMOS) dengan Metode Sol-gel, *Skripsi*, Prog. Studi Kimia, FMIPA UGM, Yogyakarta.
- Fitriani, L., Rachmawati, H., dan Suciati, T., 2010, Formulasi Mikroenkapsulasi Protein dalam Poli(D,L-Laktida) dengan Teknik Penguapan Pelarut, *J. Sains dan Teknologi Farmasi*, 15 (1), 34-41.
- Fidalgo, A., and Ilharco, K.M., 2003, Thickness, Morphology and Structure of Sol-Gel Hybrid Films, *J. Sol-Gel Sci. Technol.*, 26(1), 357-367.
- Gao, S., Zhang, S., and Gao, G., 2009, Immobilization Of Beta-Galactosidase into Magnetic Beads, *Appl. Biochem. Biotechnol.*, 160 (5), 1386-1393.
- Gill, I., and Ballesteros, A., 2000, Bioencapsulation within Synthetic Polymers (Part1), Sol-gel Encapsulated Biologicals, *Tibtech*, 18(7), 282-296.
- Hambal, M., Darmawai, Nurmayasari, Balqis, U., Ferasyi, T.R., dan Aisyah, A., 2016, Konsentrasi Protein Antigen Eksretori/Sekretori dan Somatik pada *Fasciola gigantica* dan *Eurytrema pancreaticum*, *J. Medika Veterinaria*, 10(2), 128-130.
- Handayani, P.A., Nurjanah, E., dan Rengga, W.D.P., 2014, Pemanfaatan Limbah Sekam Padi menjadi Silika Gel, *JBAT*, 3(2), 19-24.
- Hindryawati, N., 2005, Enkapsulasi Enzim Dehidrogenase Laktat (DHL) dalam Silika dengan Bahan Dasar Natrium Silikat dari Abu Sekam Padi, *Tesis*, Program Studi Kimia, Fakultas MIPA UGM, Yogyakarta.
- Kailasapathy, K., 2002, Microencapsulation of Probiotic Bacteria: Technology and Potential Applications, *Microbiol.*, 3(2), 39-48.
- Kalapathy, U., Proctor, A., and Shultz, J., 2000, A Simple Method for Production of Pure Silica from Rice Hull Ash, *Bioresour Tech.*, 73, 257-262.
- Khadijah, M., 2016, Isoterm Adsorpsi Kation Mg(II) oleh Silika Gel dari Bagasse Tebu, *Skripsi*, Prog Studi Kimia, Jurusan Kimia, FMIPA, UNY, Yogyakarta.
- Kennedy, J., and Melo, E. H. M., 1999, *Immobilized Enzyme and Cells*, University of Birmingham, Birmingham.
- Khopkar S., 2007, *Konsep Dasar Biokimia*, UI Press, Jakarta.

- Kubiak-Ossowska, Tokarczyk, K., Jachimska, B., and Mulheran, P., 2017, Bovine Serum Albumin Adsorption at a Silica Surface Explored by Simulation and Experiment, *J. Phys. Chem. B.*, 102, 3586–3616.
- Kumar, A., Yadav, N., Bhatt, M., Mishra, N.K., Chaudhary, P., and Singh, R., 2015, Sol-Gel Derived Nanomaterials and It's Application, *Res. J. Chem. Sci.*, 5(12), 98-105.
- Lan, E.H., Dunn, B., and Zink, J.I., 2005, *Methods in Molecular Biology, in: Protein Nanotechnology*, Protocols, Instrumentation, and Applications, Humana Press Inc., Totowa.
- Latifah, P., Chrisanda, N., Hermawati, E.S., dan Wulandari, A., 2013, Pengaruh Jenis Asam pada Sintesis Silika Gel dari Abu Bagasse dan Uji Sifat Adsorptifnya terhadap Ion Logam Tembaga (II), *Paper Sintesis Anorganik*, Prog Studi Kimia, Jurusan Kimia, FMIPA, UNDIP, Semarang.
- Luh, B.S., 1980, *Rice, Producing and Utilization*, The Aui Publishing Company Inc. West Port Conecticut.
- Ma, F. dan Milford, A.H., 1999, Biodiesel production: a Review, *Bio. Tech.*, 70(1), 1-15.
- Majorek, K.A., Porebski, P.J., Dayal, A., Zimmerman, M.D., Jablonska, K., Stewart, A.J., Chruszcz, M., and Minor, W., 2012, Structural and Immunologic Characterization of Bovine, Horse, and Rabbit Serum Albumins. *Mol. Immuno. l*, 52, 174–182.
- Matsumoto, M., and Ohashi, K., 2003, Effect of Immobilization on Thermostability of Lipase from *Candida rugosa*, *Biochem Eng. J.*, 14(1), 75-77.
- Muflikhah, 2016, Modifikasi Silika Terlapis Pada bahan Magnetik Pasir Besi dengan Kitosan Melalui Penghubung 3-Glisidoksiipropil Trimetoksisilan untuk Adsorpsi $[AuCl_4]^-$, *Tesis*, Prog Studi S2 Kimia, Departemen Kimia, FMIPA, UGM, Yogyakarta.
- Nelson, D.L., and M.M. Cox., 2000, *Lehninger Principles of Biochemistry, First Edition*, W.H. Freeman and Company New York, New York.
- Nouredдини, H., Gao, X., and Ohilkana, R. S., 2005, Immobilized *Pseudomonas Cepacia* Lipase fo Biodiesel Fuel Production from Soybean Oil, *Bio. Tech.*, 96(7), 769-777.
- Nugraha, M.F.Z., 2018, Enkapsulasi Protein Bovine Serum Albumin (BSA) dalam Silika Gel dari Abu Sekam Padi dan Tetrametil Orto Silikat (TMOS)

dengan Teknik Sol-Gel, *Skripsi*, Prog Studi Kimia, Jurusan Kimia, FMIPA, UGM, Yogyakarta.

Nuryono, Narsito, and Astuti E., 2008, Encapsulation Of Horseradish Peroxidase Glucose Oxidase (HRP-Gox) In Silica Aquagel Synthesized From Rice Hull Ash For Enzymatic Reaction Of Glucose, *Indo. J. Chem.*, 8 (2), 169-176.

Paveena, S.M., Ahmed, A., Aris, A.Z., and Radojevic, M., 2010, *Heavy Metals Dynamics Ana Source Ni Interdal Mangrove Sediment of Sabah, Borneo Island*, Environment Asia 3.

Patil, R., Dongre, R., and Meshram J., 2014, Preparation of Silica Powder from Rice Husk, *J. Appl. Chem.*, 27, 26-29.

Pisal, A.A., and Rao, A.V., 2016, Comparative studies on the Physical Properties of TEOS, TMOS, and Na₂SiO₃ based Silica Aerogels by Ambient Pressure Drying Method, *J. Porous Mater.*, 24 (3), 685-695.

Prasetyoko, D., 2001, Pengoptimuman Sintesis Zeolit Beta dari pada Silika Abu Sekam Padi Pencirian dan Tindak Balas Pemangkinan Friedel Crafts, *Tesis*, Universiti Teknologi Malaysia, Johor.

Prasojo, B.A., dan Siahaan, P., 2015, Pengaruh Berat Molekul Kitosan terhadap efisiensi Enkapsulasi BSA (*Bovine Serum Albumin*) menggunakan Agen Crolink Asam Sitrat, *J. Kimia Sains dan Aplikasi*, 18(2), 62-66.

Rahim, M.A., Ismail, M.M., and Mageed, A.M., 2015, Production of Activated Carbon and Precipitated White Nanosilica from Rice Husk Ash, *Int. J. Adv Res.*, 3 (2), 491-498.

Rani, K., 2012, Emulsified Entrapment of Glycine Max B-Amylase into Chemically Modified bivine Serum Albumin and Study its Application in Detergents, *Adv. Biotechnol.*, 3, 592-595.

Sari, W.P., 2014, Pemanfaatan Abu Sekam Padi sebagai Adsorben Logam Berat Timbal dalam Kerang Darah, *Skripsi*, Departemen Kimia, FMIPA, IPB, Bogor.

Sasongko, W.T., Yusiati, L.M., Bachruddin, Z., dan Mugiono, 2010, Optimalisasi Pengikatan Tanin Daun Nangka dengan Protein Bovine Serum Albumin, *Buletin Peternakan*, 34(3), 154-158.

Sassolas, A., Blum, L.J., and Bouvier, B.D.L., 2009, New Electrochemiluminescent Biosensors Combining Poly(luminol) and an Enzymatic Matrix, *J. Anal. Bioanal. Chem.*, 394, 971-980.

- Sitanggang, K.W., Suarya, P., Simpen, I.N., dan Putra, I.M.W.A., 2017, Pengaruh pH dan Konsentrasi terhadap Enkapsulasi Metformin HCl pada Monmorillonit Teraktivasi Asam Sitrat, *J. Media Sains*, 1(2), 37-44.
- Skoog, D.A., Holler, F.J., and Nieman, T.A., 1998, *Principles of Instrumental Analysis*. 3rd ed. Saunders College Publishing, New York.
- Smith, A.D., 1990, *Theory, Culture and Society*, The TCS Centre, Nottingham Trent University.
- Soleh, M., 2014, Ekstraksi Silika dari Sekam Padi dengan Metode Pelarutan dan Pengendapan Silika serta Analisis EDX dan FTIR, *Skripsi*, Departemen Fisika, FMIPA, IPB, Bogor.
- Souza, M.F., Magalhaes, W.L., and Persegil, M.C., 2002, Silica Derived From Burned Rice Hulls, *J. Mat. Research.*, 5 (4), 467-474.
- Sriyanti, 2017, Pengaruh Pemerangkap Enzim Alkaline Fosfatase ke dalam Silika dari Abu Sekam Padi terhadap Aktivitas Enzimatiknya, *J. Kimia Sains dan Aplikasi*, 20(1), 42-47.
- Suka, I.G., 2008, Karakteristik Silika Sekam Padi dari Provinsi Lampung yang diperoleh dengan Metode Ekstraksi, *J. MIPA*, 1, 47-52.
- Triviana, L., Sugiarti, S., dan Rohaeti, E., 2015, Sintesis dan Karakterisasi Natrium Silikat (Na_2SiO_3) dari Sekam Padi, *J. Sains dan Teknologi Lingkungan*, 7(2), 66-75.
- Tu, J., Boyle, A., Friedrich, H., Bomans, P., Bussmann, J., Niko, Sommerdijk, M., Jiskoot, W., and Kros, A., 2015, Mesoporous Silica Nanoparticles with Large Pores for the Encapsulation and Release of Proteins, *Appl. Mater.*, 8, 32211-32219.
- Yang, X., Chen, D., and Zhao, H., 2016, Silica Particles with Immobilized Protein Molecules and Polymer, *Act. Biomat.*, 29, 446-454.
- Yoga, F. W., 2013, Imobilisasi Enzim Lipase Pada Silika Gel Sebagai Biokatalis untuk Reaksi Hidrolisis Minyak Kelapa Sawit, *Skripsi*, Prodi Studi Kimia, Jurusan Kimia, FMIPA, UGM, Yogyakarta.