

## DAFTAR PUSTAKA

- Ananta, P., 2015, Optimasi Komposisi Campuran Hydroxyapatite, Sericin, dan Bioplastik Sebagai Biokomposit Untuk Memperoleh Waktu Pengeringan Tercepat Dan Terkuat Mekanik, *Skripsi*, Program Studi Teknik Industri, Jurusan Teknik Mesin dan Industri, Fakultas Teknik Universitas Gadjah Mada, Yogyakarta.
- Aramwit, P., dan Sangcakul, A., 2007, The Effect of Sericin Cream on Wound Healing in Rats, *Biosci. Biotechnol. Biochem.*, Vol. 71, No. 10, pp. 2473- 2477.
- Aramwit, P., Kanokpanont, S., Nakpheng, T., dan Srichana, T., 2010, The Effect of Sericin from Various Extraction Methods on Cell Viability and Collagen Production, *International Journal of Molecular Sciences*, Vol. 11, pp. 2200- 2211.
- Aran, A., 2007, Manufacturing Properties of Engineering Materials, <http://www2.isikun.edu.tr/personel/ahmet.aran>, diakses dalam jaringan pada 19 Juni 2014.
- Basterfield, D.H., 2003, *Total Quality Management*, Prentice Hall International, United Kingdom.
- Benbow, J.J., dan Bridgewater, 1993, *Paste flow and extrusion*, Oxford series on advance manufacturing, Oxford press, Oxford
- Billote, W.G., 2003, *Ceramics Biomaterial in The Biomedical Engineering Handbook-2<sup>nd</sup> Edition*, CRC Press, Washington D.C
- Bose, S., Vahabzadeh, S., dan Bandyopadhyaya, A., 2003, Bone Tissue Engineering Using 3D Printing, *Materials Today*, Vol. 16, No. 12
- Brady, G.S., Clauser, H.R., dan Vaccari, J.A., 2002, *Material Handbook 15th edition*, McGraw-Hill.
- Bradley, N., *The Response Surface Methodology.*, Indiana University of South Bend, Indiana
- Cengel, Y.A., dan Cimbala, J.M., 2006, *Fluid Mechanics: Fundamentals and Applications*, McGraw-Hill, New York.
- Chakraborty, P. dan Banerjee, S., 2009, Optimization of extrusion process for production of expanded product from green gram and rice by response surface methodology, *Journal of Scientific & Industrial Research*, vol. 68, pp. 140-148.
- Cunha, A.G. dan Covas, J.A., 2001, The Design of Extrusion Screws: An Optimization Approach, Campus de Azurém, Portugal



- Ezeoha, S.L., dan Ezenwanne, 2013, Production of Biodegradable Plastic Packaging Film from Cassava Starch, *IOSR Journal of Engineering*, Vol 3 No. 10, pp, 14-22
- Davis, H.E. dan Leach J.K., 2008, Hybrid and Composite Biomaterials in Tissue Engineering, *Multifunctional Biomaterials and Devices*, pp: 1-26.
- Dwi, I.S., 2014, Optimasi Komposisi Campuran Hidroksiapatit, Bioplastik, dan Camphorquinone Untuk Memperoleh Diametral Tensile Strength Dan Laju Solidifikasi Terbaik, *Skripsi*, Program Studi Teknik Industri, Jurusan Teknik Mesin dan Industri, Fakultas Teknik Universitas Gadjah Mada, Yogyakarta
- Enderle, J., Blanchard, S., and Bronzino J.D., 2000., *Introduction to Biomedical Engineering*. Academic Press., San Diego
- Ezeoha, S. L., dan Ezenwanne, 2013, Production of Biodegradable Plastic Packaging Film from Cassava Starch, *IOSR Journal of Engineering*, Vol. 3 No. 10, pp. 14-20
- Fauzi, A., 2010, Uji Kandungan Protein Serisin Kokon *Antheraea sp* (Famili Saturninidae), *Skripsi*, Yogyakarta.
- Gergely, G., Wéber F., Lukács I., Illés L., Tóth A. L., Horváth Z. E., Mihály J., dan Balázs C., 2010, Nano-hydroxyapatite Preparation from Biogenic Raw Materials, *Central European Journal of Chemistry*, Vol. 8, pp. 375-381.
- Herliansyah, M.K., Suyitno, Dewo, P., Shukor, M.H.A, dan Ektessabi, A.I., 2011, Development And Characterization Of Bovine Hydroxyapatite Porous Bone Graft For Biomedical Applications, *Advanced Materials Research*, Vol. 277, pp. 59-65.
- Heynick, M., dan Stotz, I., 2006, 3D CAD, CAM, and Rapid Prototyping, LAPA Digital Technology Seminar, v1.1.
- Hsiang, S.H. dan Lin, Y.W., 2009, Optimization of the Extrusion Process for Magnesium Alloy Sheets Using the Fuzzy-based Taguchi Method, *The Arabian Journal for Science and Engineering*, vol. 34, no. 1C, pp. 175-185.
- Huang, T., Mason, M.S., Zhao, X., Hilmas, G.E., dan Leu, M.G., 2009, Aqueous- based freeze-form extrusion fabrication of alumina components, *Journal Rapid Prototyping*, Vol.15, pp.88-95.,
- Hutama, A.S., 2015, Optimasi Pembuatan Biokeramik dengan Striuktur Pori-Pori Beraturan, *Tesis*, Program Studi Pasca Sarjana Teknik Industri, Jurusan Teknik Mesin dan Industri, Fakultas Teknik Universitas Gadjah Mada, Yogyakarta
- Iriawan, N., Astuti, S.P., 2006, *Mengolah Data Statistik dengan Mudah Menggunakan*

- Langer, R.P., dan Vacanti, J., 1993, Article of Tissue Engineering, *Journal Science*, Vol.260, pp.920-926.
- Liu, C-Y., 2013, A Comparative Study Of Rapid Prototyping Systems, *Thesis*, Faculty of the Graduate School University of Missouri, United States.
- Lu, X., Lee, Y., Yang, S., Hao, Y., Evans, J.R.G., and Parini, C.G., 2008, Fine lattice structures fabricated by extrusion freeforming: Process variables, *Journal of Materials Processing Technology*, Vol.209, pp.4654–4661.
- Kaplan, D., and Karageorgiou, V., 2005, Porosity of 3D Biomaterial Scaffolds and Osteogenesis, *Biomaterial journal*, Vol. 26, pp. 5474-5491.
- Khoda, A.K.M.B., & Koc, B., 2013, Functionally Heterogeneous Porous Scaffold Design for Tissue Engineering, *CAD journal*, Vol. 45, pp. 1276-1293
- Kusrini, E., & Sontang, M., 2012, Characterization of X-Ray Diffraction and Electron Spin Resonance: Effect of Sintering Time and Temperature on Bovine Hydroxiapatite, *RAD Physical and Chem*, Vol. 81, pp. 118-125
- Mahulauw, A., 2015, Pengaruh Konsentrasi Serisin Pada Scaffold Biokomposit Sericin - Hidroksiapatit-Starch Bioplastic Terhadap Viabilitas Dan Perlekatan Sel Fibroblas, *Tesis*, Sekolah Pascasarjana Universitas Gadjah Mada, Yogyakarta
- Malone, E., Rasa, K., Cohen, D.L., Issacson, T., Lashley, H., and Lipson, H., 2004, Freeform fabrication of 3D air batteries and functional electro mechanical assemblies, *Rapid prototyping journal*, Vol. 10, pp. 58-69.
- Marcincinova, L.N.dan Kuric, I., 2012, Basic and Advanced Materials for Fused Deposition Modeling Rapid Prototyping Technology, *Manufacture and Industrial Engineering* 11(1), pp. 24-27.
- Mason, M.S., Huang, T., Landers, R.G., Leu, M.C., dan Hilmas, G.E., 2007, Aqueous-based extrusion fabrication of ceramics on demand, pp. 124-134.
- Mason, M.S., Huang, T., Landers, R.G., Leu, M.C., dan Hilmas, G.E., 2009, Aqueous-based extrusion of high solids loading ceramic pastes: Process modeling and control, *Journal of Materials Processing Technology*. Vol.209, pp.2946–2957
- Moerbani, J., 1999, *Plastic Moulding*, Diktat Kuliah, Akademi Teknik Mesin Industri (ATMI) Surakarta.
- Montgomery, D.C., 2013, *Design and analysis of experiments, 8th ed.* John Willey & Sons, Inc, New York.



UNIVERSITAS  
GADJAH MADA

**OPTIMASI KOMPOSISI MATERIAL PASTA BIOKOMPOSIT [HYDROXYAPATITE/STARCH  
BIOPLASTIC/SERICIN] UNTUK  
SHRINKAGE TERENDAH DENGAN METODE RESPONSE SURFACE DAN TAGUCHI**  
FELIX KRISNA AJI N., Ir. Alva Edy Tontowi, M.Sc., Ph.D.

Universitas Gadjah Mada, 2016 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Montgomery, D.C., dan Runger, G.C., 2003, *Applied Statistics and Probability for*

*Engineers, Third Edition*, John Wiley & Sons, Inc, New York.

Muller-Mai, C.M., Stupp, S.I., Voigt, C., Gross, K.A., 1995., Nanoapatite and Organoapatite

Implants in Bone: Histology and Ultrastructure of the Interface. *Journal of Biomed Mater*, Vol 29, pp 9-18.

Myers, R.H., Montgomery, D.C., dan Anderson-Cook, M.C., 2009, *Response Surface*

*Methodology Process and Product Optimazation using Design Experiments*, 3rd ed., John Wiley & Sons Inc., New York.

Nugroho, Y., 2015, Pembuatan Purwa Rupa Mesin *Aqueous Based Extrusion Fabrication*

(ABEF) Untuk *Macroporous Hydroxyapatite Bioceramic* Dengan Struktur Beraturan, *Tesis*, Program Studi Pasca Sarjana Teknik Industri, Jurusan Teknik Mesin dan Industri, Fakultas Teknik Universitas Gadjah Mada, Yogyakarta

Nugroho, Y.C., 2015a, Optimasi Parameter Proses Ektruksi Pasta Biokomposit

[*Hydroxyapatite/Bioplastik/Sericin*] Menggunakan Metode *Response Surface*, *Skripsi*, Program Studi Teknik Industri, Jurusan Teknik Mesin dan Industri, Fakultas Teknik Universitas Gadjah Mada, Yogyakarta

Padamwar, M.N., dan Pawar, A.P., 2004 Silk Sericin and Its Applications: A review. *Journal*

*of Scientific and Industrial Research*, Vol. 63, No.4, pp 323-329

Patel, R. J., dan Modasiya, M. K., 2011, Sericin-Pharmaceutical Applications. *International*

*Journal of Research in Pharmaceutical and Biomedical Sciences*, Vol. 2, pp. 913-917.

Pilla, S., 2011., *Handbook of Bioplastics & Biocomposites Engineering*

*Applications*. John Wiley & Sons Inc., New Jersey.

Pritikaranaputri, G., 2012, Optimasi Parameter Proses pada Mesin Portabee Printer Tiga

Dimensi Menggunakan Metode Taguchi, *Skripsi*, Universitas Gadjah Mada, Yogyakarta

Pujiyanto, E., Tontowi, A.E., Wildan, M.W., Siswomihardjo, W., Porous Hydroxyapatite–

Zirconia Composites Prepared by Powder Deposition and Pressureless Sintering, *Advanced Materials Research* Vol. 445, Trans Tech Publications, Switzerland, 2012, pp. 463-468.

Ridho, H., 2014, Evaluasi Laju Aliran Volumetrik Material Pasta Silika-Bioplastik Pada

Sistem Pengumpanan Ekstrusi Ulir Tunggal Mesin Printer Tiga Dimensi, *Skripsi*, Program Studi Teknik Industri, Jurusan Teknik Mesin dan Industri, Fakultas Teknik

- Roeder, R. K., Converse, G. L., Kane, R. J., Yue, dan Weimin., 2008., Hydroxyapatite-Reinforced Polymer Biocomposites for Synthetic Bone Substitutes, *Journal of Materials*, pp. 39-39.
- Ross, P.J., 1996. *Taguchi Techniques for Quality Engineering 2<sup>nd</sup> edition*. McGraw-Hill Book Company, New York.
- Sadat-Shojai, M., Jamshidi, A., and Khorasani, M., 2012, Hydrothermal processing of hydroxyapatite nanoparticles — A Taguchi experimental design approach, *International Journal of Engineering Science and Technology*.
- Sasikumar, S., dan Vijayaraghavan, 2006, Low temperature synthesis of nanocrystalline hydroxyapatite from egg shells by combustion method, *Trends biomater*, Vol. 19, pp. 70-73
- Septyawan, D., 2014, Pembuatan dan Karakteristik *Macroporous Hydroxipatite Bioceramics* dengan Struktur Tidak Beratur dengan Foaming Method. *Skripsi*. Teknik Mesin. Universitas Gadjah Mada.
- Sivaros, Milkey, K.R., Samsudin, A.R., Dubet, A.K., dan Kidd, P., 2014, Comparasion between Taguchi Method and Response Surface Methodology (RSM) in Modelling CO<sub>2</sub> Laser Machining, *Jordan Journal of Mechanical and Industrial Engineering*, Vol.8, pp. 35-42.
- Sugiyono, 2009, *Metodologi Penelitian Pendidikan, Pendekatan Kuantitatif, Kualitatif, dan R&D*, Alfabeta, Bandung.
- Sunarintyas, S., dan Siswomihardjo, W., 2011, The Effect of Sericin Application Over Hydroxyapatite Surface on Osteoblast Cells Proliferation, 2nd International Conference In Instrumentation, Communications, Information Technology, and Biomedical Engineering (ICICI-BME), Proceeding, pp. 145-149.
- Sunarintyas, S., dan Siswomihardjo, W., dan Tontowi, A.E., 2012, Cytotoxicity of Cricula Triphenestrata Cocoon Extract on Human Fibroblast. *International Journal of Biomedical..*
- Suwanda, 2011, *Desain Eksperimen Untuk Penelitian Ilmiah*, Penerbit Alfabeta, Bandung
- Syuhada, H.P., 2015, Optimasi Komposisi Campuran Material Biokomposit [Hydroxyapatite/Bioplastik/Sericin] Untuk Mendapatkan Kuat Mekanik Tertinggi Dan



- Taguchi, G., 1993, *Taguchi on Robust Technology Development: bringing quality engineering upstream*, Asme Press, New York.
- Terada, S., Nishimura, T., Sasaki, M., Yamada, H., dan Miki, M., 2002, Sericin, A Protein Derived from Silkworms, Accelerates The Proliferation of Sveral Mammalian Cell Lines Including A Hybridoma, *Cytotechnology*, Vol. 40, pp. 3-12.
- Tontowi, A.E., Perkasa, D.P., dan Mahulauw, A., 2014, Erizal. Experimental Study on NanoBiocomposite of [nHA/Bioplastic] for Building a Porous Block Scaffold. Conference NANOCON, Pune, India.
- Tontowi, A.E., Shafiqy, D.I., Triyono, J., Study On A Layered Photo Composite Of Hydroxyapatite-Bioplastic-Camphorquinone Composed By Response Surface Method, *International Journal of Applied Engineering Research*, Vol. 10. Research India Publications, 2015.
- Utami, A.D., 2014. Pembuatan Dan Karakterisasi Macroporous Hydroxyapatite Bioceramics Dengan Struktur Beraturan Menggunakan Manually Extrusion Deposition Method, *Skripsi*, Program Studi Teknik Industri, Universitas Gadjah Mada, Yogyakarta.
- Vallet-Regi, M., 2001, Ceramics for Medical Applications, *Journal of Chemical Society*, vol.2, pp.97-108
- Wang, H., Li, Y., Zuo, Y., Li, J., Ma, S., dan Cheng, L., 2007, Biocompatibility and Osteogenesis of Biomimetic Nano-Hydroxyapatite/Polyamide Composite Scaffolds for Bone Tissue Engineering. *Biomaterials*, Vol.28, No.22, pp. 3338-3348.
- Widyawati, R., 2013. Perbandingan Hasil Optimasi Komposisi Material Filamen dengan Metode Taguchi, *Skripsi*, Program Studi Teknik Industri, Universitas Gadjah Mada, Yogyakarta.
- Zhang, Y., Venugopal, J. R., El-Turki, A., Ramakrishna, S., Su, B., dan Lim, C. T., 2008, Electrospun Biomimetic Nanocomposite Nanofibers of Hydroxyapatite/Chitosan for Bone Tissue Engineering. *Biomaterials*, Vol. 32, pp. 4314-4322.