

DAFTAR PUSTAKA

- Abdullah, A. &. (2019). Scanning Electron Microscopy (SEM): A Review Scanning Electron Microscopy (SEM):A Review. . International Conference On Hydraulics And Pneumatics, January, 1–9.
- Andiani, A. W. (2019). Pembentukan Lapisan Komposit Ni-TiN-AlN/Si3N4 Menggunakan Metode Elektrodeposisi dengan Variasi Temperatur (Doctoral dissertation, Universitas Negeri Jakarta).
- Azad Mohammed Dkk. (2018). Scanning Electron Microscopy (Sem): A Review. Proceedings Of 2018 International Conference On Hydraulics And Pneumatics - HERVEX ISSN 1454 - 8003.
- Boccaccini, A. (2010). Electrophoretic deposition: Fundamentals and Applications. Journal of the European Ceramic Society.
- Brooks, I., Palumbo, G., Hibbard, G. D., Wang, Z., & Erb, U. (2011). On the Intrinsic Ductility of Electrodeposited Nanocrystalline Metals. Journal of materials science, 46(24), 7713-7724
- Budi E., [et al.] Analisis Korosi Pada Lapisan Tipis Komposit Nikel Nitrida Hasil Elektrodeposisi [Journal].- Jakarta : Spektra: Jurnal Fisika dan Aplikasinya, 2015. - Vol. 16.
- Budi, E. (2016). Potensi Pembentukan Lapisan Super Dan Ultra Keras Senyawa Komposit Nitrida Menggunakan Kaidah Elektrodeposisi. *Spektra: Jurnal Fisika Dan Aplikasinya*, 1(2), 187-194. <https://doi.org/10.21009/SPEKTRA.012.14>
- Budi, E., Ksatriotomo, B., Restu, A., Sugihartono, I., & Budi, A. S. (2015). Komposisi dan Morfologi Permukaan Lapisan Komposit Ni-TiAlN Elektrodeposisi. Prosiding Bidang Fisika, Semirata 2015 Bidang MIPA BKS-PTN Barat (pp. 348-353). Universitas Tanjungpura Pontianak.
- Cooke, K. O. (2016). Parametric analysis of electrodeposited nano-composite coatings for abrasive wear resistance. Electrodeposition of composite materials.
- Diana, L., Safitra, A. G., & Ariansyah, M. N. (2020). Analisis Kekuatan Tarik pada Material Komposit dengan Serat Penguat Polimer. Jurnal Engine: Energi, Manufaktur, dan Material, 4, 59-67.
- Dickson, E. W., Jacobs, M. H., and Pashley, D. W., Philosophical Magazine, 2015. 11(111): 575

- E. B. and I. S. Muarief, "Sintesis Lapisan Tipis Komposit Ni-TiAlN Menggunakan Teknik Elektrodeposisi pada Berbagai Substrat," *Pros. Semin. Nas. Fis.*, vol. IV, 2015, pp. 81–84.
- E. Budi et al., "Crystal Structure and Corrosion of Electrodeposited Ni-TiAlN Composite Coatings," *Journal of Technology and Social Science (JTSS)*, vol. 1, pp. 54-61, 2017.
- E. Budi et al., "Komposisi Dan Morfologi Permukaan Lapisan Komposit Ni-TiAlN Elektrodeposisi," in *Prosiding Bidang Fisika, Semirata 2015 Bidang MIPA BKS-PTN Barat*, 2015
- E. Budi, B. Ksatriotomo, A. Restu et al. "Komposisi Dan Morfologi Permukaan Lapisan Komposit Ni-TiAlN Elektrodeposisi," *Pros. Bid. Fis.*, 2015, pp. 348–353.
- E. Budi, B. Ksatriotomo, A. Restu, A. L. Permatasari, I. Sugihartono, and A. S. Budi, "Analisis Korosi Pada Lapisan Tipis Komposit Nikel-Nitrida Hasil Elektrodeposisi," *J. Fis. dan Apl.*, vol. 16, no. 1, 2015, pp. 39–41.
- Erdoğan, N. N., & Başığit, A. B. (2023). An Approach on Determining Micro-Strain and Crystallite Size Values of Thermal Spray Barrier Coated Inconel 601 Super Alloy. *The International Journal of Materials and Engineering Technology*, 6(1), 21-25.
- F. Ebrahimi, et al., "Mechanical properties of nanocrystalline nickel produced by electrodeposition," *Nanostructured Materials*, vol. 11, pp. 343-350, 2014.
- F. Hidayanti, A. A. Harnovan, "Application Of Scanning Electron Microscopy: A Review," *International Journal of Applied Science and Engineering Review*, vol. 1, no. 6, pp. 91-102, 2020.
- Fu, Z., Zhang, Z., Meng, L., Shu, B., Zhu, Y., & Zhu, X. (2021). Effect of Strain Rate on Mechanical Properties of Cu/Ni Multilayered Composites Processed by Electrodeposition. In *Heterostructured Materials* (pp. 679-694). Jenny Stanford Publishing.
- G.D. Spenceley, B.I.S.R.A. Report, MW/INT 10 (1962) 62.
- Ghernaout, D., Alghamdi, A., & Ghernaout, B. (2019). Electrocoagulation Process: A Mechanistic Review at the Dawn of its Modeling. *Journal of Environmental Science and Allied Research*, 2(1), 51-67. Retrieved from <https://norcaloa.com/journals/ESAR/ESAR-201028.pdf>

- Gilan, E. (2013). *Comprehensive Inorganic Chemistry II* (2 ed., Vol. 1). Elsevier Inc. <https://doi.org/10.1016/B978-0-08-097774-4.00132-7>.
- Hakim, L., Dirgantara, M., & Nawir, M. (2019). Karakterisasi Struktur Material Pasir Bongkahan Galian Golongan C dengan Menggunakan X-Ray Diffraction (X-RD) di Kota Palangkaraya. *Jurnal Jejaring Matematika dan Sains*, 1(1), 44-51.
- H. Ichimura, F. M. Rodriguez, and A. Rodrigo, "The composite and film hardness of TiN coatings prepared by cathodic arc evaporation," *Surf. Coatings Technol.*, vol. 127, 2000, pp. 138–143.
- H. Maharana, B. Bishoyi, A. Basu, "Current density dependent microstructure and texture evolution and texture evolution related effects on properties of electrodeposited Ni-Al coating," *Journal of Alloys and Compounds*, vol. 787, pp. 483-494, 2019
- H. Sulaikan, T. Mustika, I.N. Jujur. "PENGARUH TEMPERATUR HOT-PRESS TERHADAP KARAKTERISTIK KOMPOSIT AC8A/SICP". *Jurnal Sains dan Teknologi Indonesia* Vol. 15, No. 2, Agustus 2013 Hlm.78-84)
- Herdiana Giging ANALISA PENGARUH HEAT TREATMENT MATERIAL CARBIDE DRILL ROD AF1 TERHADAP KINERJA PROSES PUNCH [Journal] // *Jurnal Teknik Mesin (JTM)*: Vol. 04, No. 3.. - 2015. - pp. 91-93.
- J.K. Dennis, T.E. Such, *Nickel and Chromium Plating*, third ed., Wood Head Publishing Limited, England, 1993.
- J.P. Celis, J.R. Roos, *Surface Engineering*, NATO Series, Boston, 1984.
- Kharin, A.Y. (2020). Deep learning for scanning electron microscopy: synthetic data for the nanoparticle's detection. *Ultramicroscopy*, 113125.
- Kornaus Kamil [et al.] Mechanical and thermal properties of tungsten carbide – graphite nanoparticles nanocomposites [Journal] // *Polish Journal of Chemical Technology*. - 2016. - pp. 84-88.
- Kumayasari, M. F., & Sultoni, A. I. (2017). Studi Uji kekerasan Rockwell Superficial vs Micro Vickers. *Jurnal Teknologi Proses dan Inovasi Industri*, 2(2).
- Lassner E and Schubert W D TUNGSTEN: properties, chemistry, technology of the element, alloys and chemical compounds [Book]. - New York : Kluwer Academic / Plenum Publishers, 1990.

- Lekka M Electrochemical Deposition of Composite Coatings [Book]. - Udine : Elsevier Inc., 2018.
- Lins, V. F., Ceconello, E. S., & Matencio, T. (2008). Effect of the Current Density on Morphology, Porosity, and Tribological Properties of Electrodeposited Nickel on Copper. *Journal of Materials Engineering and Performance*, 17(5), 741-745. doi: 10.1007/s11665-008-9205-9.
- M. A. M. Ibrahim, F. Kooli, and S. N. Alamri, "Electrodeposition and Characterization of Nickel-TiN Microcomposite Coatings," *Int. J. Electrochem. Sci.*, vol. 8, no. 11, 2013, pp. 12308–12320.
- M. Alizadeh, A. Cheshmpish, "Electrodeposition of Ni-Mo/Al₂O₃ nano-composite coatings at various deposition current densities," *Applied Surface Science*, vol. 466, pp. 433-440, 2019
- M. Jiang, C. Ma, F. Xia, and Y. Zhang, "Application of artificial neural networks to predict the hardness of Ni-TiN nanocoatings fabricated by pulse electrodeposition," *Surf. Coatings Technol.*, vol. 286, 2016, pp. 191–196.
- Marwati, S. (2013). Pengaruh Agen Pereduksi dalam Proses Elektrodeposisi Terhadap Kualitas Deposit Cu dan Ag. *Prosiding Seminar Nasional Penelitian, Pendidikan dan Penerapan MIPA*. Fakultas MIPA, Universitas Negeri Yogyakarta.
- Masruroh, Manggara, A. B., Papilaka, T., & Triandi, R. (2013). Penentuan ukuran Kristal (crystallite size) Lapisan Tipis PZT dengan Metode XRD Melalui Pendekatan Persamaan Debye-Scherrer. *Erudio Journal of Educational Innovation*, 1(2), 24-29. <http://dx.doi.org/10.18551/erudio.1-2.4>.
- Masta, N. (2020). *Buku Materi Pembelajaran Scanning Electron Microscopy*.
- Mousavi, R., Deflorian, F., & Bahrololoom, M. E. (2020). Morphology, Hardness, and Wear Properties of Ni-Base Composite Coating Containing Al Particle. *Coatings*, 10, 1-16. doi:10.3390/coatings10040346.
- N. S. Qu, et al., "Pulse electrodeposition of nanocrystalline nickel using ultra narrow pulse width and high peak current density," *Surface and Coatings Technology*, vol. 168, pp. 123-128, 2003.
- Natalia, G., Budi, E., & Sugihartono, I. (2023). Analisis Morfologi Dan Komposisi Lapisan Komposit Ni-Aln Dengan Metode Elektrodeposisi Menggunakan Scanning Electron Microscopy-Energy Dispersive

Spectroscopy (Sem-Eds). In Prosiding Seminar Nasional Fisika (EJournal) (Vol. 11).

Noori, S. M. (2019). Synthesis and characterization of Ni–Si₃N₄ : Si₃N₄ nanocomposite coatings fabricated by pulse electrodeposition. *Bulletin of Materials Science*, 42, 1-7.

Nugroho, Y. S. A., & Sulisty, S. (2017). Pelapisan Stainless Steel Aisi 304 Menggunakan Nikel (Ni) Melalui Proses Elektroplating. *JURNAL TEKNIK MESIN*, 5(1), 16-24.

Om Prakash Choudhary Dkk. (2017). Scanning Electron Microscope: Advantages And Disadvantages. *International Journal Of Current Microbiology And Applied Sciences* ISSN: 2319-7706 Volume 6 Number 5.

Pakpahan Herman S., Wardani Afni K. and Ma Rifa'atul Karakterisasi Bahan Konduktor (Besi, Baja, dan Timbal) dan Semikonduktor (Tungsten) Berdasarkan Percobaan Efek Hall [Book]. - Bandung : Prosiding Simposium Nasional Inovasi dan Pembelajaran Sains, 2015.

Pelzer, K., Stebbins, J. F., Prinz, F. B., Borisov, A. S., Hazendonk, P., Hayes, P.G., Abele, M., Nmr, S., York, N., Santibáñez-Mendieta, A. B., Didier, C., Inglis, K. K., Corkett, A. J., Pitcher, M. J., Zanella, M., Shin, J. F., Daniels, L. M., Rakhmatullin, A., Li, M. M., ... Society, C. (2017). No Covariance structure analysis of health-related indicators in the elderly at home with a focus on subjective healthTitle. *Solid State Ionics*, 2(1), 1–10.

Pramono, A. (2008). Komposit Sebagai Trend Teknologi Masa Depan. Fakultas Teknik Metalurgi dan Material: Universitas Sultan Ageng Tirtayasa.

Qu, N., Zhu, D., & Chan, K. (2006). Fabrication of Ni–CeO₂ nanocomposite by electrodeposition. *Scripta Materialia*, 54(7), 1421-1425. <https://doi.org/10.1016/j.scriptamat.2005.10.069>

R. R. Saputra, S. Oediyani, Y. Lestari, and E. Mabururi, “Pengaruh Rapat Arus dan Waktu Pelapisan Nikel Pada AISI 410 dengan Metode Pulse Electrodeposition Terhadap Struktur Mikro dan Laju Korosi,” *Mater. Metal.*, vol. 2, 2017, pp. 77–82.

Rahman, D. K., Budi, E., & Nasbey, H. (2020). Kajian Pengaruh Variasi Temperatur Terhadap Struktur Kristal Berbagai Lapisan Komposit Nikel. *Prosiding Seminar Nasional Fisika, IX*. doi.org/10.21009/03.SNF2020.01.FA.20.

Reimer, L. (1998) *Scanning electron microscopy: physics of image formation and microanalysis*. Springer, 527.

- Rishadi, M., Budi, E., & Sugihartono, I. (2023, January). Pengaruh Rapat Arus Terhadap Komposisi Dan Morfologi Permukaan Lapisan Komposit Ni-Tin Dengan Menggunakan Metode Elektrodposisi. In Prosiding Seminar Nasional Fisika (E-Journal) (Vol. 11).
- Romadhoni, M. A. R., Agussalim, A., & Risanti, D. D. (2017). Analisa Pengaruh Perubahan Rapat Arus Terhadap Pembentukan Passive Layer Al₂O₃ pada Proses Hard Anodizing Material QQA-250/4, AMS 4037. *Jurnal teknik ITS*, 6(2), F279-F284.
- Sajjadnejad, M., Abadeh, H. K., Omidvar, H., & Hosseinpour, S. (2020). Assessment of Tribological behavior of nickel-nano Si₃N₄ composite coatings fabricated by pulsed electroplating process. *Surface Topography: Metrology and Properties*, 8(2), 025009. <https://doi.org/10.1088/2051-672X/ab7ae5>
- Sandra, M. (2021). Analisis Spektrum X-Ray Diffraction Lapisan Komposit Ni-TiNAIN/Si₃N₄ dengan Pengaruh Variasi Konsentrasi Si₃N₄ terhadap Kekerasan. DKI Jakarta, Indonesia: Universitas Negeri Jakarta.
- Sanjaya Okky Wijayanto Dkk. (2014). Analisis Kegagalan Material Pipa Ferrule Nickel Alloy N06025 Pada Waste Heat Boiler Akibat Suhu Tinggi Berdasarkan Pengujian :Mikrografi Dan Kekerasan . *Jurnal Teknik Mesin S-1*, Vol. 2, No. 1.
- Santosa Agus Analisa Struktur dan Komposisi Material Lapisan Tungsten Carbide/Cobalt (WC-Co) yang Dipersiapkan Dengan Metode HVOF [Book]. - Depok : Universitas Indonesia, 2018.
- Sari, N. H. (2018). *Material Teknik*. Yogyakarta: Deepublish.
- Saugi, W. (2021). Pengaruh Faktor Fisik, Kimia, dan Biologi Medium Terhadap Laju Korosi Besi. *Borneo Journal of Science and Mathematics*, 1(1), 33–60.
- Septiana, A. (2018). Pengaruh Rapat Arus dan Waktu pada Proses Electrolityc Cadmium Plating terhadap Lapisan Cadmium sebagai Pelindung Korosi Baja Aisi-4130. Surabaya: Institut Teknologi Sepuluh Nopember.
- Septiano, A.F., Sutanto, H., & Susilo. (2021). Synthesis and characterization of resin lead acetatecomposites and ability test of X-ray protection. *Journal Of Physics: Conf Series*, 1918.
- Sujatno, A., Salam, R., Bandriyana, & Dimiyati, A. (2015). Studi Scanning Electron Microscopy (SEM) untuk Karakterisasi Proses Oksidasi Paduan Zirkonium. *Jurnal Forum Nuklir (JFN)*, 9(2), 44-50.

- Sun, C., Liu, X., Zhou, C., Wang, C., & Cao, H. (2019). Preparation and wear properties of magnetic assisted pulse electrodeposited Ni-SiC nanocoatings. *Ceramics International*, 45(1), 1348–1355.
- Sutomo Senen and Rahmat, “Pengaruh arus dan waktu pada pelapisan nikel dengan elektroplating untuk bentuk plat,” vol. 6, no. 2, 2010, pp. 11–20.
- Tseng, A. A., Notargiacomo, A., and Chen, T. P., *Journal of Vacuum Science & Technology B*, 2015.23(3):877-894
- Utama, F. Y., & Zakiyya, H. (2016). Pengaruh Variasi Arah Serat Komposit Berpenguat Hibrida Fiberhybrid Terhadap Kekuatan Tarik dan Densitas Material dalam Aplikasi Body Part Mobil. *Mekanika*, 15, 60-69
- Venkateswarlu, K., Sandhyarani, M., Nellaippan, T., & Rameshbabu, N. (2014). Estimation of Crystallite Size, Lattice Strain and Dislocation Density of Nanocrystalline Carbonate Substituted Hydroxyapatite by X-Ray Peak Variance Analysis. *Procedia Materials Science*, 5, 212-221. <https://doi.org/10.1016/j.mspro.2014.07.260>.
- W. A. Aperador Chaparro and E. V. Lopez, "Electrodeposition of nickel plates on copper substrates using PC y PRC," *Matéria (Rio de Janeiro)*, vol. 12, pp. 583- 588, 2007.
- W. Li, Y. Zhu, F. Xia, “Microstructure and erosion characteristics of Ni-AlN thin films prepared by electrodeposition,” *Science and Engineering of Composite Materials*, vol. 23, no. 4, pp. 395- 400, 2016.
- Wahyuningsih, K., Marwoto, P., & Sulhadi. (2013). Konduktivitas dan Transmittansi Film Tipis Zinc Oxide yang Dideposisikan pada Temperatur Ruang. *Unnes Physics Journal*, 2(1), 37–43.
- Wang, J., Xia, F., & Huang, M. (2013). Research Article Preparation and Mechanical Properties of Ni-TiN Composite Layers by Ultrasonic Electrode Position. *Research Journal of Applied Sciences, Engineering and Technology*, 6(7), 1303-1308.
- Wang, Y., & Zhang, L. (2014). Nickel based coatings containing TiN nanoparticles prepared by ultrasonic-electrodeposition technology. *Applied Mechanics and Materials*, 543–547(10), 3703–3706.
- Yang, Z., Yi, S., Wang, Y., Zhao, S., & Shi, W. (2022). Study on Characteristics and Microstructure of Ni-AlN Thin Coatings Prepared via Different Electrodeposition Techniques. *International Journal of Electrochemical Science*, 17, 1-12. doi:10.20964/2022.02.34.

Yudo Hartono and Jatmiko Sukanto ANALISA TEKNIS KEKUATAN MEKANIS MATERIAL KOMPOSIT BERPENGUAT SERAT AMPAS TEBU (BAGGASE) DITINJAU DARI KEKUATAN TARIK DAN IMPAK [Book]. - Semarang : Universitas Diponegoro, 2008.

Z. Yang et al., “Study on Characteristics and Microstructure of Ni-AlN Thin Coatings Prepared via Different Electrodeposition Techniques,” International Journal of Electrochemical Science, vol. 17, pp. 1-12, 2022.

