

DAFTAR PUSTAKA

- [1] J. Nanosains, “Fabrikasi Material Nanokomposit Superkuat, Ringan dan Transparan Menggunakan Metode Simple Mixing,” vol. 1, no. 1, pp. 14–21, 2008.
- [2] V. Y. Pamela, R. Syarieff, E. S. Iriani, and N. E. Suyatma, “KARAKTERISTIK MEKANIK, TERMAL DAN MORFOLOGI FILM POLIVINIL ALKOHOL DENGAN PENAMBAHAN NANOPARTIKEL ZnO DAN ASAM STEARAT UNTUK KEMASAN MULTILAYER,” *J. Penelit. Pascapanen Pertan.*, vol. 13, no. 2, p. 63, 2017, doi: 10.21082/jpasca.v13n2.2016.63-73.
- [3] R. K. R. B. Choudhary, “Concentration-dependent behaviors of ZnO-reinforced PVA – ZnO nanocomposites as electron transport materials for OLED application,” *Polym. Bull.*, 2017, doi: 10.1007/s00289-017-2186-9.
- [4] M. Aslam, M. A. Kalyar, and Z. A. Raza, “Polyvinyl Alcohol : A Review of Research Status and Use of Polyvinyl Alcohol Based Nanocomposites,” 2018, doi: 10.1002/pen.24855.
- [5] A. F. Mansour, S. F. Mansour, and M. A. Abdo, “Improvement Structural and Optical Properties of ZnO / PVA Nanocomposites,” vol. 7, no. 2, pp. 60–69, 2015, doi: 10.9790/4861-07226069.
- [6] R. Murty, Raj, Murday, Shankar, *Nanoscience Nanotechnology*. 2013.
- [7] V. Kaler, R. K. Duchaniya, and U. Pandel, “Synthesis of nano-titanium dioxide by sol-gel route,” *AIP Conf. Proc.*, vol. 1724, pp. 1–5, 2016, doi: 10.1063/1.4945247.
- [8] I. Morad, A. M. Alshehri, A. F. Mansour, M. H. Wasfy, and M. M. El-Desoky, “Facile synthesis and comparative study for the optical performance of different TiO₂ phases doped PVA nanocomposite films,” *Phys. B Condens. Matter*, vol. 597, no. June, p. 412415, 2020, doi: 10.1016/j.physb.2020.412415.
- [9] T. Iqbal, M. Irfan, S. M. Ramay, A. Mahmood, M. Saleem, and S. A. Siddiqi, “ZnO–PVA Polymer Matrix with Transition Metals Oxide Nano-fillers for High Dielectric Mediums,” *J. Polym. Environ.*, vol. 28, no. 9, pp. 2422–2432, 2020, doi: 10.1007/s10924-020-01768-x.
- [10] A. Tri and H. Sutanto, “SIFAT OPTIK Zinc Oxide (ZnO) YANG DIDEPOSISI DI ATAS SUBSTRAT KACA MENGGUNAKAN METODE CHEMICAL SOLUTION DEPOSITION (CSD) DAN APLIKASINYA UNTUK DEGRADASI ZAT WARNA METHYLENE BLUE,” *Youngster Phys. J.*, vol. 3, no. 1, pp. 7–14, 2014.

- [11] R. K. Goyal, *Nanomaterials and Nanocomposites*. 2017.
- [12] E. Marin, J. Rojas, and Y. Ciro, “A review of polyvinyl alcohol derivatives: Promising materials for pharmaceutical and biomedical applications,” *African J. Pharm. Pharmacol.*, vol. 8, no. 24, pp. 674–684, 2014, doi: 10.5897/AJPP2013.3906.
- [13] N. Ben Halima, “Poly(vinyl alcohol): Review of its promising applications and insights into biodegradation,” *RSC Adv.*, vol. 6, no. 46, pp. 39823–39832, 2016, doi: 10.1039/c6ra05742j.
- [14] D. Tekin, D. Birhan, and H. Kiziltas, “Thermal, photocatalytic, and antibacterial properties of calcinated nano-TiO₂/polymer composites,” *Mater. Chem. Phys.*, vol. 251, no. February, p. 123067, 2020, doi: 10.1016/j.matchemphys.2020.123067.
- [15] A. K. Shafura, N. D. M. Sin, M. H. Mamat, M. Uzer, A. Mohamad, and M. Rusop, “Structural properties of Al-doped ZnO thin films deposited by Sol-Gel spin-coating method,” in *Proceedings - RSM 2013: 2013 IEEE Regional Symposium on Micro and Nano Electronics*, 2013, vol. 2, pp. 308–311, doi: 10.1109/RSM.2013.6706537.
- [16] S. S. Mousavi, B. Sajad, and M. H. Majlesara, “Fast response ZnO/PVA nanocomposite-based photodiodes modified by graphene quantum dots,” *Mater. Des.*, vol. 162, pp. 249–255, 2019, doi: 10.1016/j.matdes.2018.11.037.
- [17] V. V. Malyutina-Bronskaya, V. B. Zalesski, T. R. Leonova, and A. V. Mudryi, “Electrical and optical characteristics of ZnO:Er films on silicon substrates,” *2007 8th Annu. Int. Work. Tutorials Electron Devices Mater. EDM'07 - Proc.*, pp. 64–66, 2007, doi: 10.1109/SIBEDM.2007.4292909.
- [18] D. Nunes *et al.*, *Structural, optical, and electronic properties of metal oxide nanostructures*. 2019.
- [19] Zen J. L. 2016. "Optimasi Pembuatan Sel Surya TiO₂ Dengan Penyisipan Grafit". Universitas Telkom: Fakultas Teknik Elektro. Bandung.
- [20] D. Lan, H. Wu, F. Puleo, and L. F. Liotta, “Bulk and surface characterization techniques of TiO₂ and TiO₂-doped oxides,” *Heterog. Photocatal. Relationships with Heterog. Catal. Perspect.*, pp. 57–86, 2019, doi: 10.1016/B978-0-444-64015-4.00003-1.
- [21] Irzaman, H. Syafutra, R. Siskandar, Aminullah, and H. Alatas, “Modified Spin Coating Method for Coating and Fabricating Ferroelectric Thin Films as Sensors and Solar Cells,” *Thin Film Process. - Artifacts Surf. Phenom. Technol. Facet.*, 2017, doi: 10.5772/66815.
- [22] A. Ul-Hamid, *A Beginners' Guide to Scanning Electron Microscopy*. 2018.
- [23] M. Azizi-Lalabadi, M. Alizadeh-Sani, B. Divband, A. Ehsani, and D. J.

- McClements, "Nanocomposite films consisting of functional nanoparticles (TiO₂ and ZnO) embedded in 4A-Zeolite and mixed polymer matrices (gelatin and polyvinyl alcohol)," *Food Res. Int.*, vol. 137, p. 109716, 2020, doi: 10.1016/j.foodres.2020.109716.
- [24] G. Cao, *NANOSTRUCTURES AND NANOMATERIALS - Synthesis, Properties and Applications*. 2010.
 - [25] R. Koutavarapu *et al.*, "Optical, electrical and photoluminescence studies on Al₂O₃ doped PVA capped ZnO nanoparticles for optoelectronic device application," *Optik (Stuttg.)*, vol. 205, no. January, p. 164236, 2020, doi: 10.1016/j.ijleo.2020.164236.
 - [26] C. M. Firdaus, M. S. B. Shah Rizam, M. Rusop, and S. Rahmatul Hidayah, "Characterization of ZnO and ZnO: TiO₂ thin films prepared by sol-gel spray-spin coating technique," *Procedia Eng.*, vol. 41, no. Iris, pp. 1367–1373, 2012, doi: 10.1016/j.proeng.2012.07.323.
 - [27] R. K. Duchaniya and N. Choudhary, "Synthesis and characterization of PVA/TiO₂ nanocomposite," *Key Eng. Mater.*, vol. 737 KEM, pp. 242–247, 2017, doi: 10.4028/www.scientific.net/KEM.737.242.
 - [28] B. Zhang, *Principles, Methods, Formation Mechanisms, and Structures of Nanomaterials Prepared in the Liquid Phase*. 2018.
 - [29] Z. Oxide, "Synthesis and enhanced mechanical properties of nano Zinc Oxide in Polyvinyl alcohol and Polyvinyl pyrrolidone composite film," *Int. J. Nano Dimens.*, vol. 4, no. 2, pp. 153–159, 2013.
 - [30] Delima H. 2019. "Optimasi Parameter Spin Coating Untuk Deposisi Lapisan Tipis Molibdenum Disulfida". Universitas Telkom: Fakultas Teknik Elektro. Bandung.