UNIVERSITAS
GADJAH MADA
**Rancang Bangun Alat Pantau UV guna Menganalisis Karakteristik Intensitas Cahaya dan Sebaran UV dari
Matahari di Yogyakarta**
Nadira Titania Efemy, Dr. Bambang Murdaka Eka Jati, MS.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Adzhani, A., Darusman, F., & Aryani, R. (2022, July 27). *Kajian efek radiasi ultraviolet terhadap kulit.* In *Bandung Conference Series: Pharmacy* (Vol. 2, No. 2, pp. 106–112). Universitas Islam Bandung. https://doi.org/10.29313/bcsp.v2i2.3551

Ahmetoglu, M., Hacıismailoğlu, M. C., & Kumbay, E. (2025). Simple and cost-effective wavelength measurement system using photodiode pair: Applications in fiber-coupled light sources. *Measurement: Journal of the International Measurement Confederation, 244*, Article 116484. https://doi.org/10.1016/j.measurement.2024.116484

Amineh, R. K. (2020**).** Applications of electromagnetic waves: Present and future. *Electronics (Switzerland), 9*(5), Article 808. MDPI AG. https://doi.org/10.3390/electronics9050808

Arbab, A. I. (2016). Propagation of photons in a medium and refractive index. *Optik*, *127*(22), 10758–10765. https://doi.org/10.1016/j.ijleo.2016.08.084

Austin, E., Geisler, A. N., Nguyen, J., Kohli, I., Hamzavi, I. H., Lim, H. W., & Jagdeo, J. (2021). Visible light: Part I. Properties and cutaneous effects of visible light. *Journal of the American Academy of Dermatology, 84*(5), 1219–1231. https://doi.org/10.1016/j.jaad.2021.02.048

Bernhard, G., Mayer, B., Seckmeyer, G., & Moise, A. (1997). Measurements of spectral solar UV irradiance in tropical Australia. *Journal of Geophysical Research Atmospheres*, *102*(7), 8719–8730. https://doi.org/10.1029/97jd00072

Bhowmik, M. K., Saha, K., Majumder, S., Majumder, G., Saha, A., Sarma, A. N., Bhattacharjee, D., Basu, D. K., & Nasipuri, M. (2011). Thermal infrared face recognition – A biometric identification technique for robust security system. In P. Corcoran (Ed.), *Reviews, refinements and new ideas in face recognition* (pp. 219–234). InTech. https://doi.org/10.5772/39396

Bhattacharjee, P. K. (2023). Fundamental to electromagnetic waves. *International Journal of Trend in Scientific Research and Development (IJTSRD)*, *7*(1), 454–457.

Brasseur, G. P., & Solomon, S. (2006). *Aeronomy of the Middle Atmosphere: Chemistry and Physics of the Stratosphere and Mesosphere* (3rd ed.). Springer Science & Business Media. https://doi.org/10.1007/1-4020-3824-0

Chapman, S. (1930). A theory of upper-atmospheric ozone. *Memoirs of the Royal Meteorological Society*, 3(26), 103–125.

Dadi, V., & Peravali, S. (2020). Optimization of light-dependent resistor sensor for the application of solar energy tracking system. *SN Applied Sciences*, *2*(9), Article 1499. https://doi.org/10.1007/s42452-020-03293-x

Delorme, M. M., Ramos, G. L. P. A., Rocha, R. S., Pimentel, T. C., Esmerino, E. A., Márcico, E. T., Silva, M. C., Duarte, M. C. K. H., & Cruz, A. G. (2022). Principles of ultraviolet processing and its equipment and application. *Non-Thermal Food Processing Operations: Unit Operations and Processing*

UNIVERSITAS GADJAH MADA
Rancang Bangun Alat Pantau UV guna Menganalisis Karakteristik Intensitas Cahaya dan Sebaran UV dari Matahari di Yogyakarta
Nadira Titania Efemy, Dr. Bambang Murdaka Eka Jati, MS.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Equipment in the Food Industry, 409–431. https://doi.org/10.1016/B978-0-12-818717-3.00013-5

Diffey, B. L. (2002). Sources and measurement of ultraviolet radiation. *Methods*, *28*(1), 4–13. https://doi.org/10.1016/S1046-2023(02)00204-9

Fan, B., Zhang, C. X., Chi, J., Liang, Y., Bao, X. L., Cong, Y. Y., Yu, B., Li, X., **&** Li, G. Y. (2022). The molecular mechanism of retina light injury focusing on damage from short wavelength light. *Oxidative Medicine and Cellular Longevity, 2022*, Article 8482149. Hindawi Limited. https://doi.org/10.1155/2022/8482149

Fatihah, N., Ari, F., Wardhana, K., Krisostomos, G., Putra, O., Rida, D., & Nur'aini Mahmudah, S. (2024). Analisis panjang gelombang laser monokromatik melalui pola interferensi cahaya dari kisi difraksi transmisi. *Jurnal Teori dan Aplikasi Fisika, 12*(2), Article 370. https://doi.org/10.23960/jtaf.v12i02.370

Fioletov, V., Kerr, J. B., & Fergusson, A. (2010). The UV index: definition, distribution and factors affecting it. *Canadian journal of public health = Revue canadienne de sante publique*, *101*(4), I5–I9. https://doi.org/10.1007/BF03405303

Fraden, J. (2016). *Handbook of Modern Sensors: Physics, Designs, and Applications* (5th ed.). Springer International Publishing. https://doi.org/10.1007/978-3-319-19303-8

Hamdi, S. (2019). Analysis of ultraviolet index, ultraviolet B insolation, and sunshine duration at Bandung in year 2017. *IOP Conference Series: Earth and Environmental Science, 303*(1), 012018. IOP Publishing. https://doi.org/10.1088/1755-1315/303/1/012018

Hamouda, S. A., Alshawish, N. K., Abdalla, Y. K., & Ibrahim, M. K. (2022). Ultraviolet Radiation: Health Risks and Benefits. *Saudi Journal of Engineering and Technology*, *7*(10), 533–541. https://doi.org/10.36348/sjet.2022.v07i10.001

Holick, M. F. (2008). Sunlight, UV-Radiation, Vitamin D and Skin Cancer: How much sunlight do we need? In J. Reichrath (Ed.), *Sunlight, Vitamin D and Skin Cancer* (pp. 1–15). Springer Science+Business Media / Landes Bioscience. https://doi.org/10.1007/978-0-387-77574-6_1

International Agency for Research on Cancer. (2012). *Radiation (IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100D)*. World Health Organization. https://monographs.iarc.who.int/list-of-classifications

Jain, A., Chaurasia, R., Sengar, N. S., Singh, M., Mahor, S., & Narain, S. (2020). Analysis of vitamin D level among asymptomatic and critically ill COVID-19 patients and its correlation with inflammatory markers. *Scientific Reports, 10*(1), Article 20191. https://doi.org/10.1038/s41598-020-77093-z

Jamroen, C., Fongkerd, C., Krongpha, W., Komkum, P., Pirayawaraporn, A., & Chindakham, N. (2021). *A novel UV sensor-based dual-axis solar tracking system: Implementation and performance analysis*. *Applied Energy, 299*, 117295. https://doi.org/10.1016/j.apenergy.2021.117295

UNIVERSITAS GADJAH MADA
Rancang Bangun Alat Pantau UV guna Menganalisis Karakteristik Intensitas Cahaya dan Sebaran UV dari Matahari di Yogyakarta
Nadira Titania Efemy, Dr. Bambang Murdaka Eka Jati, MS.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Keller, R. B. (2023). *Design for electromagnetic compatibility – In a nutshell: Theory and practice*. Springer (pp. 1–7). https://doi.org/10.1007/978-3-031-14186-7

Kimura, W. D. (2017). What are electromagnetic waves? In *Electromagnetic Waves and Lasers* (pp. 1-1-1–33). Morgan & Claypool Publishers. https://doi.org/10.1088/978-1-6817-4613-5ch1

Luccini, E., Orte, F., Lell, J., Nollas, F., Carbajal, G., & Wolfram, E. (2023). The UV Index color palette revisited. *Journal of Photochemistry and Photobiology, 15*, 100180. https://doi.org/10.1016/j.jpap.2023.100180

Loxley, R. (2022). Detail analysis of radio waves in applied physics: About the study. *Journal of Physics Research and Applications, 6*(2), Article 2320. https://doi.org/10.4172/2320

Makela, J., Kolehmainen, T., Tokkonen, T., & Ojala, K. (2007). *UV radiation meter using visible light sensors* (U.S. Patent No. 7,271,393 B2). U.S. Patent and Trademark Office.

Manickavasagan, A., & Jayasuriya, H. (Eds.). (2014). *Imaging with electromagnetic spectrum: Applications in food and agriculture* (p. 17). Springer. https://doi.org/10.1007/978-3-642-54888-8

Marion, J. B. (1981). CHAPTER 14 - ELECTROMAGENTIC RADIATION. In J. B. Marion (Ed.), *Study Guide for Physics in the Modern World (Second Edition)* (Second Edition, pp. 111–115). Academic Press. https://doi.org/https://doi.org/10.1016/B978-0-12-472284-2.50017-2

McClung, A., Mansouree, M., & Arbabi, A. (2020). At-will chromatic dispersion by prescribing light trajectories with cascaded metasurfaces. *Light: Science & Applications, 9*(1), Article 94. https://doi.org/10.1038/s41377-020-0335-7

Mikla, V. I., & Mikla, V. V. (2014). 1 - Advances in Imaging from the First X-Ray Images. In V. I. Mikla & V. V Mikla (Eds.), *Medical Imaging Technology* (pp. 1–22). Elsevier. https://doi.org/https://doi.org/10.1016/B978-0-12-417021-6.00001-0

Obodovskiy, I. (2019). *Radiation: Fundamentals, Applications, Risks, and Safety* (1st ed., p. 289–292). Elsevier. ISBN 978-0444639790.

Pasaribu, R. (2022). Pola Intensitas Radiasi UVB Dan Waktu Berjemur Yang Tepat dan Optimal. *Jurnal Pendidikan Fisika Dan Sains (JPFS)*, *5*(2), 51–56. https://doi.org/10.52188/jpfs.v5i2.266

Pettit, E. (1932). Measurements of ultra-violet solar radiation. *The Astrophysical Journal*, *75*, 185–214. https://doi.org/10.1086/143387

Qian Shenglin and Huang, C. and C. B. and F. X. (2021). New Technology and Tissue Repair and Regeneration (3): Application of Other New Technologies in Tissue Repair and Regeneration. In X. Fu (Ed.), *Regenerative Medicine in China* (pp. 379–433). Springer Singapore. https://doi.org/10.1007/978-981-16-1182-7_11

Roohnia, M. (2025). The physics of sound and string vibration: A luthier's perspective. In *Properties and treatment of tonewood for string instrument construction* (pp. 81–137). Springer. https://doi.org/10.1007/978-3-032-00824-4_3

UNIVERSITAS GADJAH MADA
Rancang Bangun Alat Pantau UV guna Menganalisis Karakteristik Intensitas Cahaya dan Sebaran UV dari Matahari di Yogyakarta
Nadira Titania Efemy, Dr. Bambang Murdaka Eka Jati, MS.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Rusydi, R., Zahriah, Z., Zulkarnaini, Z., & Dewadi, F. M. (2023). *Fisika optik umum dan mata* (Cetakan pertama). PT Global Eksekutif Teknologi. https://ftk.ar-raniry.ac.id/wp-content/uploads/2024/09/Buku-FISIKA-OPTIK-UMUM-MATA-RUSYDI.pdf

Serway, R. A., & Jewett, J. W. (2008). Gauss's law. In *Physics for scientists and engineers* (7th ed., pp. 721–756). Belmont, CA: Thomson Brooks/Cole.

Silva, M. R. F., Alves, M. F. R. P., Cunha, J. P. G. Q., Costa, J. L., Silva, C. A., Fernandes, M. H. V., Vilarinho, P. M., & Ferreira, P. (2023). Nanostructured transparent solutions for UV-shielding: Recent developments and future challenges. *Materials Today Physics, 35*, Article 101131. https://doi.org/10.1016/j.mtphys.2023.101131

Sutarno, Erwin, & Hayat, M. S. (2017). Radiasi benda hitam dan efek fotolistrik sebagai konsep kunci revolusi saintifik dalam perkembangan teori kuantum cahaya. *Titian Ilmu: Jurnal Ilmiah Multi Sciences*, *9*(2), 51-58.

Syaodih, E., Suhandi, A., Maftuh, B., Hermita, N., Fratiwi, N. J., & Samsudin, A. (2019). Development and implementation of creative, solutive and smart teaching (CS2T) to improve 21st century capability on wave and optics. *Journal of Physics: Conference Series, 1280*(5), 052051. IOP Publishing. https://doi.org/10.1088/1742-6596/1280/5/052051

Tang, X., Yang, T., Yu, D., Xiong, H., & Zhang, S. (2024). Current insights and future perspectives of ultraviolet radiation (UV) exposure: Friends and foes to the skin and beyond the skin. *Environment International, 185*, 108535. https://doi.org/10.1016/j.envint.2024.108535

Verma, A., Kumar, V., & Gupta, S. (2023). Bio-effects of 5th generation electromagnetic waves on organs of human beings. *Global Health Journal*, *7*(4), 206–211. https://doi.org/10.1016/j.glohj.2023.11.005

Wald, L. (2019). *Basics in Solar Radiation at Earth Surface – Revised Version #2* (hal-02175988). MINES ParisTech, PSL Research University. https://hal.science/hal-02175988v1

Weather Atlas. (n.d.). *Yogyakarta, Indonesia - Climate data and average monthly weather*. Retrieved May 18, 2025, from https://www.weather-atlas.com/en/indonesia/yogyakarta-climate

Wetzel, R. G. (2001). Light in inland waters. In *Limnology* (pp. 49–69). Academic Press. https://doi.org/10.1016/B978-0-08-057439-4.50009-5

World Health Organization. (n.d.). *Radiation: The ultraviolet (UV) index*. WHO. Retrieved May 18, 2025, from https://www.who.int/news-room/questions-and-answers/item/radiation-the-ultraviolet-(uv)-index

Yuen, F. K., & Hameed, B. H. (2009). Recent developments in the preparation and regeneration of activated carbons by microwaves. In *Advances in Colloid and Interface Science* (Vol. 149, Issues 1–2, pp. 19–27). https://doi.org/10.1016/j.cis.2008.12.005

Zhang, J., & Li, J. (2023). *Spacecraft*. In J. Zhang & J. Li (Eds.), *Spatial Cognitive Engine Technology* (pp. 129–162). Academic Press. https://doi.org/10.1016/B978-0-323-95107-4.00004-4