

DAFTAR PUSTAKA

- Abramczyk, H. (2005). Basic Physics of Lasers. In *Elsevier*.
<https://doi.org/10.1016/b978-044451662-6/50002-2>
- Arduino.cc. (2021a). *Arduino Mega 2560*. <https://store.arduino.cc/usa/mega-2560-r3>
- Arduino.cc. (2021b). *Arduino Uno SMD*.
<https://www.arduino.cc/en/Main/ArduinoBoardUnoSMD>
- Attia, A. B. E., Balasundaram, G., Moothanchery, M., Dinish, U. S., Bi, R., Ntziachristos, V., & Olivo, M. (2019). A review of clinical photoacoustic imaging: Current and future trends. *Photoacoustics*, 16(November), 100144.
<https://doi.org/10.1016/j.pacs.2019.100144>
- Bageshwar, D. V, Pawar, A. S., Khanvilkar, V. V, & Kadam, V. J. (2010). Photoacoustic Spectroscopy and Its Applications – A Tutorial Review. *Eurasian Journal of Analytical Chemistry*, 5(December 2009), 187–203.
<http://www.eurasianjournals.com/index.php/ejac/article/view/290>
- Ballou, G. (2009). Electroacoustic Devices; Microphones and Loudspeakers. In *Focal Press, Elsevier* (Vol. 7, Issue 2). Focal Press, Elsevier.
- Baltacıoğlu, M. K. (2019). A novel application of pulse width modulation technique on hydroxy gas production. *International Journal of Hydrogen Energy*, 44(20), 9726–9734. <https://doi.org/10.1016/j.ijhydene.2018.10.228>
- Boré, G., & Peus, S. (1999). *Buku Microphones; Methods of Operation and Type Examples* (D.-C. F. GmbH (ed.)).
- Brigham, E. O. (1988). Book Review: The Fast Fourier Transform and its Applications. In *Prentice-Hall, Inc* (Vol. 27, Issue 3).
<https://doi.org/10.1177/002072099002700325>
- Dahlstrand, U., Sheikh, R., Merdasa, A., Chakari, R., Persson, B., Cinthio, M., Erlöv, T., Gesslein, B., & Malmsjö, M. (2020). Photoacoustic imaging for three-dimensional visualization and delineation of basal cell carcinoma in patients. *Photoacoustics*, 18(March 2019), 1–7.
<https://doi.org/10.1016/j.pacs.2020.100187>
- Diosi, A., & Kleeman, L. (2005). Laser scan matching in polar coordinates with application to SLAM. *2005 IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS*, 3317–3322.
<https://doi.org/10.1109/IROS.2005.1545181>
- Erfanzadeh, M., Kumavor, P. D., & Zhu, Q. (2018). Laser scanning laser diode photoacoustic microscopy system. *Photoacoustics*, 9, 1–9.
<https://doi.org/10.1016/j.pacs.2017.10.001>
- Erfanzadeh, M., & Zhu, Q. (2019). Photoacoustic imaging with low-cost sources; A review. *Photoacoustics*, 14(January), 1–11.
<https://doi.org/10.1016/j.pacs.2019.01.004>

- Fatima, A., Kratkiewicz, K., Manwar, R., Zafar, M., Zhang, R., Huang, B., Dadashzadeh, N., Xia, J., & Avanaki, K. (Mohammad). (2019). Review of cost reduction methods in photoacoustic computed tomography. *Photoacoustics*, 15(May), 100137. <https://doi.org/10.1016/j.pacs.2019.100137>
- Filippi, M., Garello, F., Pasquino, C., Arena, F., Giustetto, P., Antico, F., & Terreno, E. (2019). Indocyanine green labeling for optical and photoacoustic imaging of mesenchymal stem cells after in vivo transplantation. *Journal of Biophotonics*, December. <https://doi.org/10.1002/jbio.201800035>
- Fowles, G. R., & Cassiday, G. L. (2005). Analytical Mechanics (7th ed.). In *Journal of Chemical Information and Modeling* (Vol. 53, Issue 9).
- Gao, F., Kishor, R., Feng, X., Liu, S., Ding, R., Zhang, R., & Zheng, Y. (2017). An analytical study of photoacoustic and thermoacoustic generation efficiency towards contrast agent and film design optimization. *Photoacoustics*, 7, 1–11. <https://doi.org/10.1016/j.pacs.2017.05.001>
- Hariri, A., Fatima, A., Mohammadian, N., Bely, N., & Nasiriavanaki, M. (2016). Towards low cost photoacoustic Microscopy system for evaluation of skin health. *Imaging Spectrometry XXI*, 9976, 99760X. <https://doi.org/10.1117/12.2238423>
- Holavanahali, R., Romauld, M., Carter, G., Rao, G., Sipior, J., Lakowicz, J., & Bierlein, J. (1996). *Directly Modulated Diode Laser Frequency Doubled In A KTP Waveguide As An Excitation Source For CO2 AND O2 Phase Fluorometric Sensors*. 1(1), 31–36. <https://doi.org/10.1117/12.227105>
- Ibrahim, D. (2010). SD Card Projects Using the PIC Microcontroller. In *Elsevier* (Vol. 66). <https://doi.org/https://doi.org/10.1016/B978-1-85617-719-1.00005-1>
- Kruusing, A. (2008). Handbook of Liquids-Assisted Laser Processing. In *Elsevier* (Vol. 66).
- Kurniawan, E. (2017). Sistem Fotoakustik Sederhana berbasis Laser Dioda dan Mikrofon Condenser untuk Pengukuran Konsentrasi Darah. In *Gadjah Mada University* (Vol. 53, Issue 4).
- Lao, Y., Xing, D., Yang, S., & Xiang, L. (2008). Noninvasive photoacoustic imaging of the developing vasculature during early tumor growth. *Physics in Medicine and Biology*, 53(15), 4203–4212. <https://doi.org/10.1088/0031-9155/53/15/013>
- Laramie, M. D., Smith, M. K., Marmarchi, F., McNally, L. R., & Henary, M. (2018). Small molecule optoacoustic contrast agents: An unexplored avenue for enhancing in vivo imaging. *Molecules*, 23(11). <https://doi.org/10.3390/molecules23112766>
- Lejoy, A., Arpita, R., Krishna, B., & Venkatesh, N. (2016). Methylene Blue as a Diagnostic Aid in the Early Detection of Potentially Malignant and Malignant Lesions of Oral Mucosa. *Ethiopian Journal of Health Sciences*,

26(3), 201–208.

- Li, M., Tang, Y., & Yao, J. (2018). Photoacoustic tomography of blood oxygenation: A mini review. *Photoacoustics*, 10(December 2017), 65–73. <https://doi.org/10.1016/j.pacs.2018.05.001>
- Lin, Y., Li, Z., Li, Z., Cai, J., Wui, H., & Li, H. (2018). Real-time photoacoustic and ultrasonic dual-modality imaging system for early gastric cancer: Phantom and ex vivo studies. *Optics Communications*, 426(November 2017), 519–525. <https://doi.org/10.1016/j.optcom.2018.05.087>
- Louis, L. (2016). Working Principle of Arduino and Using it as a Tool for Study and Research. *International Journal of Control, Automation, Communication and Systems*, 1(2), 21–29. <https://doi.org/10.5121/ijcacs.2016.1203>
- Luke, G. P., Yeager, D., & Emelianov, S. Y. (2012). Biomedical applications of photoacoustic imaging with exogenous contrast agents. *Annals of Biomedical Engineering*, 40(2), 422–437. <https://doi.org/10.1007/s10439-011-0449-4>
- Mehrmohammadi, M., Joon Yoon, S., Yeager, D., & Y. Emelianov, S. (2013). Photoacoustic Imaging for Cancer Detection and Staging. *Current Molecular Imaging*, 2(1), 89–105. <https://doi.org/10.2174/2211555211302010010>
- Mitrayana, Sari, A. W., & Widyaningrum, R. (2021). *Photoacoustic Imaging for Periodontal Disease Examination*. July, 1–9. <https://doi.org/10.20944/preprints202107.0529.v1>
- Mitrayana, Wasono, A. J., & Ikhsan, M. R. (2017). Spektroskopi Fotoakustik Laser dan Aplikasinya, Edisi Pertama. In *Gadjah Mada University Press*.
- Moore, C., Bai, Y., Hariri, A., Sanchez, J. B., Lin, C. Y., Koka, S., Sedghizadeh, P., Chen, C., & Jokerst, J. V. (2018). Photoacoustic imaging for monitoring periodontal health: A first human study. *Photoacoustics*, 12(August), 67–74. <https://doi.org/10.1016/j.pacs.2018.10.005>
- Müller, A., Marschall, S., Jensen, O. B., Fricke, J., Wenzel, H., Sumpf, B., & Andersen, P. E. (2013). Diode laser based light sources for biomedical applications. *Laser and Photonics Reviews*, 7(5), 605–627. <https://doi.org/10.1002/lpor.201200051>
- Muthuraman, G., & Teng, T. T. (2009). Extraction of methyl red from industrial wastewater using xylene as an extractant. *Progress in Natural Science*, 19(10), 1215–1220. <https://doi.org/10.1016/j.pnsc.2009.04.002>
- Myers, D. N. (2019). Innovations in Monitoring With Water-Quality Sensors With Case Studies on Floods, Hurricanes, and Harmful Algal Blooms. In *Separation Science and Technology (New York)* (1st ed., Vol. 11, Issue 2014). Elsevier Inc. <https://doi.org/10.1016/B978-0-12-815730-5.00010-7>
- National Center for Biotechnology Information. (2021a). *Methyl red*. <https://pubchem.ncbi.nlm.nih.gov/compound/Methyl-red>
- National Center for Biotechnology Information. (2021b). *Methylene blue*. <https://pubchem.ncbi.nlm.nih.gov/compound/Methylene-blue>

- Oliveira, G., Fava, G., Baglione, M., & Pimpinella, M. (2017). Mobile Digital Recording: Adequacy of the iRig and iOS Device for Acoustic and Perceptual Analysis of Normal Voice. *Journal of Voice*, *31*(2), 236–242. <https://doi.org/10.1016/j.jvoice.2016.05.023>
- Pao, Y.-H. (1977). Optoacoustic Spectroscopy and Detection. In *Academic Press, Inc.* (Vol. 426, Issue 6967). <https://doi.org/10.1038/426688a>
- Petschke, A., & La Rivière, P. J. (2010). Comparison of intensity-modulated continuous-wave lasers with a chirped modulation frequency to pulsed lasers for photoacoustic imaging applications. *Biomedical Optics Express*, *1*(4), 1188. <https://doi.org/10.1364/boe.1.001188>
- Pevernagie, D., Aarts, R. M., & De Meyer, M. (2010). The acoustics of snoring. *Sleep Medicine Reviews*, *14*(2), 131–144. <https://doi.org/10.1016/j.smrv.2009.06.002>
- Pomara, C., Pascale, N., Maglietta, F., Neri, M., Riezzo, I., & Turillazzi, E. (2015). Use of contrast media in diagnostic imaging: medico-legal considerations. *Radiologia Medica*, *120*(9), 802–809. <https://doi.org/10.1007/s11547-015-0549-6>
- Purwanto, J., & Mitrayana. (2010). *kajian teoritis hamburan gelombang elektromagnetik dalam tomografi fotoakustik untuk aplikasi biomedis.pdf*. XIV, 36–51.
- Rahmawati, T., Apriyadi, Y., & Mamay. (2020). Utilization of 1% of Methylene Blue in Staining Histopathological Preparations At Anatomic Pathology Laboratory. *Indonesian Journal of Medical Laboratory Science and Technology*, *2*(2), 93–100. <https://doi.org/10.33086/ijmlst.v2i2.1563>
- Ray, A., Wang, X., Lee, Y. E. K., Hah, H. J., Kim, G., Chen, T., Orringer, D. A., Sagher, O., Liu, X., & Kopelman, R. (2011). Targeted blue nanoparticles as photoacoustic contrast agent for brain tumor delineation. *Nano Research*, *4*(11), 1163–1173. <https://doi.org/10.1007/s12274-011-0166-1>
- Rosencwaig, A., & Gersho, A. (1976). Theory of the photoacoustic effect with solids. *Journal of Applied Physics*, *47*(1), 64–69. <https://doi.org/10.1063/1.322296>
- Scheeper, P. R., van der Donk, A. G. H., Olthuis, W., & Bergveld, P. (1994). A review of silicon microphones. *Sensors and Actuators: A. Physical*, *44*(1), 1–11. [https://doi.org/10.1016/0924-4247\(94\)00790-X](https://doi.org/10.1016/0924-4247(94)00790-X)
- Silalahi, H. M. (2017). Sistem Citra Fotoakustik Sederhana Berbasis Laser Dioda Dan Mikrofon Condenser. In *Gadjah Mada University* (Vol. 2, Issue 2). <https://doi.org/DOI>
- Singh, S. C., Zeng, H., Guo, C., & Cai, W. (2012). *Lasers : Fundamentals , Types , and Operations*. <https://doi.org/10.1002/9783527646821.ch1>
- Soroushian, B., & Yang, X. (2011). Measuring non-radiative relaxation time of fluorophores with biomedical applications by photoacoustic effect.

Biomedical Optics Express, 2(10), 2749–2760.

- Stoica, P., & Moses, R. (2005). Spectral Analysis of Signals [Book Review]. In *Prentice Hall* (Vol. 24, Issue 1). <https://doi.org/10.1109/msp.2007.273066>
- Stylogiannis, A., Prade, L., Buehler, A., Aguirre, J., Sergiadis, G., & Ntziachristos, V. (2018). Continuous wave laser diodes enable fast optoacoustic imaging. *Photoacoustics*, 9, 31–38. <https://doi.org/10.1016/j.pacs.2017.12.002>
- Suhara, T. (2004). Semiconductor Laser Fundamentals. In *Marcel Dekker, Inc* (Vol. 10, Issue 2).
- Supriyanto, A. A., Suhendar, R. M., Supendi, A., Mekatronika, P. T., & Indorama, P. E. (2018). Kalibrasi Alat Ukur Pressure Gauge Sistem Kontrol Level Pada Flashtank 5 Calender. *J. Elektra*, 3(1), 20–25.
- Upputuri, P. K., & Pramanik, M. (2020). Recent advances in photoacoustic contrast agents for in vivo imaging. *Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology*, 12(4), 1–23. <https://doi.org/10.1002/wnan.1618>
- Veuthey, T., Herrera, G., & Doderio, V. I. (2014). *Dyes and stains: from molecular structure to histological application*. 91–112.
- Wakerly, J. F. (2005). Digital Design: Principles and Practices, 4th ed. In *Pearson Prentice Hall* (Vol. 53, Issue 9).
- Wang, D., Lee, D. H., Huang, H., Vu, T., Lim, R. S. A., Nyayapathi, N., Chitgupi, U., Liu, M., Geng, J., Xia, J., & Lovell, J. F. (2018). Ingestible roasted barley for contrast-enhanced photoacoustic imaging in animal and human subjects. *Biomaterials*, 175, 72–81. <https://doi.org/10.1016/j.biomaterials.2018.05.016>
- Wang, L. V. (2009). Photoacoustic Imaging and Spectroscopy. In *BMC Public Health* (Vol. 5, Issue 1). <https://ejournal.poltektegal.ac.id/index.php/siklus/article/view/298%0Ahttp://repositorio.unan.edu.ni/2986/1/5624.pdf%0Ahttp://dx.doi.org/10.1016/j.jana.2015.10.005%0Ahttp://www.biomedcentral.com/1471-2458/12/58%0Ahttp://ovidsp.ovid.com/ovidweb.cgi?T=JS&P>
- Wang, & Yao. (2016). A practical guide to photoacoustic tomography in the life sciences. *Nature Methods*, 13(8), 627–638. <https://doi.org/10.1038/nmeth.3925>
- Weber, J., Beard, P. C., & Bohndiek, S. E. (2016). Contrast agents for molecular photoacoustic imaging. *Nature Methods*, 13(8), 639–650. <https://doi.org/10.1038/nmeth.3929>
- Wen, X., Au, O. C., Xu, J., Fang, L., Cha, R., & Li, J. (2011). Novel RD-optimized VBSME with matching highly data re-usable Hardware architecture. *IEEE Transactions on Circuits and Systems for Video Technology*, 21(2), 206–219. <https://doi.org/10.1109/TCSVT.2011.2106274>
- Widyaningrum, Rim, Mitrayana, Gracea, R. S., Agustina, D., Mudjosemedr, M.,

- & Silalahi, H. M. (2020). The Influence of Diode Laser Intensity Modulation on Photoacoustic Image Quality for Oral Soft Tissue Imaging. *Journal of Lasers in Medical Sciences*, 11(4), S92–S100.
<https://doi.org/10.34172/JLMS.2020.S15>
- Widyaningrum, Rini, Agustina, D., & Mudjosemedi, M. (2018). Photoacoustic for Oral Soft Tissue Imaging based on Intensity Modulated Continuous-Wave Diode Laser. *International Journal on Advanced Science, Engineering and Information Technology*, 8(2), 622–627.
<https://doi.org/https://doi.org/10.18517/ijaseit.8.2.2383>
- Wirth, D., Snuderl, M., Curry, W., & Yaroslavsky, A. (2014). Comparative evaluation of methylene blue and demeclocycline for enhancing optical contrast of gliomas in optical images. *Journal of Biomedical Optics*, 19(9), 090504. <https://doi.org/10.1117/1.jbo.19.9.090504>
- Wong, Y. H., Thomas, R. L., & Pouch, J. J. (1979). Subsurface structures of solids by scanning photoacoustic microscopy. *Applied Physics Letters*, 35(5), 368–369. <https://doi.org/10.1063/1.91153>
- Wu, D., Huang, L., Jiang, M. S., & Jiang, H. (2014). Contrast agents for photoacoustic and thermoacoustic imaging: A review. *International Journal of Molecular Sciences*, 15(12), 23616–23639.
<https://doi.org/10.3390/ijms151223616>
- Xia, J., Yao, J., & Wang, L. V. (2014). Photoacoustic tomography: Principles and advances. *Progress in Electromagnetics Research*, 147(March), 1–22.
<https://doi.org/10.2528/PIER14032303>
- Xin, H., Li, H., Gates, R. S., & Overhults, D. G. (2009). Use of CO₂ Concentration Difference or CO₂ Balance to Assess Ventilation Rate of Broiler Houses. *Transactions of the ASABE*, 52(4), 1353–1361.
<https://doi.org/10.13031/2013.27787>
- Xu, D., Yang, S., Wang, Y., Gu, Y., & Xing, D. (2016). Noninvasive and high-resolving photoacoustic dermoscopy of human skin. *Biomedical Optics Express*, 7(6), 2095. <https://doi.org/10.1364/boe.7.002095>
- Xu, M., & Wang, L. V. (2006). Photoacoustic imaging in biomedicine. *Review of Scientific Instruments*, 77(4). <https://doi.org/10.1063/1.2195024>
- Zhong, H., Duan, T., Lan, H., Zhou, M., & Gao, F. (2018). Review of low-cost photoacoustic sensing and imaging based on laser diode and light-emitting diode. *Sensors (Switzerland)*, 18(7), 20–22.
<https://doi.org/10.3390/s18072264>