

DAFTAR PUSTAKA

- [1] W. Paper, "EURAMET cg-18 Calibration Guide for Electronic, Non-Automatic Weighing Instruments," no. October, 2020.
- [2] D. Eisenbarth, H. Schunn, C. Müller-Schöll, K. Fritsch, and F. Murányi, "Calibration of High-Capacity Scales Using Hydraulics Instead of Weights: Metrological Traceability and Measurement Uncertainty," *Meas. Sensors*, no. xxxx, pp. 1–6, 2025, doi: 10.1016/j.measen.2024.101355.
- [3] A. Virkkula *et al.*, "Modification, Calibration and A Field Test of An Instrument for Measuring Light Absorption by Particles," *Aerosol Sci. Technol.*, vol. 39, no. 1, pp. 68–83, 2005, doi: 10.1080/027868290901963.
- [4] R. Davis *et al.*, *A Comprehensive Review on Metallic Implant Biomaterials and Their Subtractive Manufacturing*, vol. 120, no. 3–4. Springer London, 2022. doi: 10.1007/s00170-022-08770-8.
- [5] T. Manolito *et al.*, "Development of Weighing Scale Calibration An Innovated Instrument towards Technology Innovation," 2023.
- [6] P. C. Cabrera and F. G. Rojas, "Calibration of Industrial Weighing Systems by Use of a Coriolis Flowmeter," *NCSLI Meas.*, vol. 8, no. 3, pp. 70–77, 2013, doi: 10.1080/19315775.2013.11721654.
- [7] K. F. Boryak, "A New Design of Non-Automatic Weighing Calibration Device for Weight-Free Verification of Large-Load Platform Railroad Scales," no. 7, pp. 46–49, 2016.
- [8] Kartika, Asran, M. P. Hasibuan, and Misrina, "Implementasi Metode Regresi Linear untuk Kalibrasi dan Pengukuran Suhu pada Sensor Suhu PT100," *J. Elkolind*, vol. 11, 2024.
- [9] A. Y. Hidayat, Y. Y. Kerlooza, and T. N. Nizar, "Perancangan Sistem Kendali Kecepatan Putaran Mesin Bensin Menggunakan PID," *Telekontran J. Ilm. Telekomun. Kendali dan Elektron. Terap.*, vol. 11, no. 1, pp. 1–11, 2023, doi: 10.34010/telekontran.v11i1.8161.
- [10] T. Gajdosik, L. Kucera, I. Gajdac, A. Fric, and J. Markovic, "Metrological Equipment for Verification and Calibration of Non-Automatic Weighing

- Instruments – Axle and Crane Weighting Instrument,” *Metrol. Meas. Syst.*, vol. 28, no. 2, pp. 397–407, 2021, doi: 10.24425/mms.2021.136615.
- [11] T. Ivanova and J. Rudzitis, “High Precision Mass Measurement In Automation,” *Solid State Phenom.*, vol. 164, pp. 19–24, 2010, doi: 10.4028/www.scientific.net/SSP.164.19.
- [12] P. D. Ananda, L. H. B. Lubis, E. Jumiati, and M. Husnah, “Kalibrasi Anak Timbangan 2000 g Menggunakan Metode Acuan Organisation Internationale De Metrologie (OIML) R111-1 2004,” *Pascal J. Phys. Sci. Learn.*, vol. 08, 2024.
- [13] F. M. Sholihah, “Teknik Kalibrasi Timbangan Elektronik Menggunakan Metode CSIRO,” *ITEK (Jurnal Ilm. Teknosains)*, vol. 2, no. 2, pp. 126–130, 2016.
- [14] A. J. A. Firdaus, D. Pramono, and W. Purnomo, “Pengembangan Sistem Informasi UPT Kalibrasi Dinas Kesehatan Kabupaten Malang Berbasis WEB,” *J. Sist. Informasi, Teknol. Informasi, dan Edukasi Sist. Inf.*, vol. 1, no. 1, pp. 23–34, 2020, doi: 10.25126/justsi.v1i1.3.
- [15] A. Hadi, J. A. S. Ahmad Subarja, and I. F. Firdaus, “Validasi Metode Kalibrasi Gas Analyzer Untuk Pengukuran O₂, Co, No, No₂, So₂, Ch₄, Dan H₂S Secara Perbandingan Langsung Dengan Ceritifed Span Gas,” *J. Ecolab*, vol. 11, no. 2, pp. 62–71, 2017, doi: 10.20886/jklh.2017.11.2.62-71.
- [16] K. H. Ang, G. Chong, and Y. Li, “PID Control System Analysis, Design, and Technology,” *IEEE Trans. Control Syst. Technol.*, vol. 13, no. 4, pp. 559–576, 2005, doi: 10.1109/TCST.2005.847331.
- [17] J. G. Ziegler and N. B. Nichols, “Optimum Settings for Automatic Controllers,” *J. Dyn. Syst. Meas. Control. Trans. ASME*, vol. 115, no. 2B, pp. 220–222, 1993, doi: 10.1115/1.2899060.
- [18] T. J. D. Barnes, L. Wang, and W. R. Cluett, “Frequency Domain Design Method for PID Controllers,” *Am. Control Conf.*, no. 2, pp. 890–894, 1993, doi: 10.23919/acc.1993.4792991.
- [19] K. Ogata, *Modern Control Engineering*, vol. 17, no. 3. 1972. doi: 10.1109/tac.1972.1100013.

- [20] R. P. Borase, D. K. Maghade, S. Y. Sondkar, and S. N. Pawar, "A Review of PID Control, Tuning Methods and Applications," *Int. J. Dyn. Control*, vol. 9, no. 2, pp. 818–827, 2021, doi: 10.1007/s40435-020-00665-4.
- [21] A. Marianto and M. Muchlas, "Rancang Bangun Robot Forklift dengan Kendali Smartphone Android Berbasis Arduino Mega 2560," *J. Ilm. Tek. Elektro Komput. dan Inform.*, vol. 3, no. 2, p. 65, 2017, doi: 10.26555/jiteki.v3i2.7483.
- [22] M. Kevin Novan and G. Setyawan, "Rancang Bangun Sistem Pengontrol Kelembaban Tanaman Sawi," *J. Otomasi, Kontrol Instrumentasi*, vol. 13, no. 2, pp. 101–108, 2021.
- [23] P. Rahardjo, "Sistem Penyiraman Otomatis Menggunakan Sensor Kelembaban Tanah Berbasis Mikrokontroler Arduino Mega 2560 Pada Tanaman Mangga Harum Manis Buleleng Bali," *Maj. Ilm. Teknol. Elektro*, vol. 21, no. 1, p. 31, 2022, doi: 10.24843/mite.2022.v21i01.p05.
- [24] W. Wahyudi, "Penerapan Machine Learning Pada Mikrokontroler Arduino Mega PRO MINI ATmega2560-16AU," vol. 03, no. May, pp. 29–39, 2022.
- [25] N. Hafizah, T. F. Wahida, F. Azmin, and A. Ammar, "Load Cell Application in Rocket Thrust Measurement System," *Appl. Mech. Mater.*, vol. 225, pp. 437–441, 2012, doi: 10.4028/www.scientific.net/AMM.225.437.
- [26] W. K. Lee, H. Yoon, C. Han, K. M. Joo, and K. S. Park, "Physiological Signal Monitoring Bed for Infants Based on Load-Cell Sensors," *Sensors (Switzerland)*, vol. 16, no. 3, 2016, doi: 10.3390/s16030409.
- [27] Y. D. Hong and B. Lee, "Logarithmic Strain Model for Nonlinear Load Cell," *Sensors (Switzerland)*, vol. 19, no. 16, pp. 1–7, 2019, doi: 10.3390/s19163486.
- [28] V. Sukontanakarn, T. Chalardsakul, and B. Saengchandr, "Design and Implementation of DC Linear Actuator and Stepper Motor for Remote Control of The Driverless Tractor Robot," *Int. J. Power Electron. Drive Syst.*, vol. 13, no. 3, pp. 1285–1294, 2022, doi: 10.11591/ijpeds.v13.i3.pp1285-1294.
- [29] K. Yeo Chin, G. Mariam Md, H. Chong Shin, and J. Irma Wani, "A Review:

- Design Variable Optimization and Control Strategies of Linear Switched Reluctance Actuator for High Precision Applications,” 2017.
- [30] B. Rouzbeh and G. M. Bone, “Optimal Force Allocation and Position Control of Hybrid Pneumatic-Electric Linear Actuators,” *Actuators*, vol. 9, no. 3, 2020, doi: 10.3390/act9030086.
 - [31] K. L. Chaurasiya, A. S. Harsha, Y. Sinha, and B. Bhattacharya, “Design and Development of Non-Magnetic Hierarchical Actuator Powered by Shape Memory Alloy Based Bipennate Muscle,” *Sci. Rep.*, vol. 12, no. 1, pp. 1–15, 2022, doi: 10.1038/s41598-022-14848-w.
 - [32] M. We-Lung, Suprpto, and H. Chung-Wen, “Adaptive Neural Network-Based Synchronized Control of Dual-Axis Linear Actuators,” 2016.
 - [33] Z. Has, A. H. Muslim, and N. A. Mardiyah, “Adaptive-Fuzzy-Pid Controller Based Disturbance Observer for DC Motor Speed Control,” *Int. Conf. Electr. Eng. Comput. Sci. Informatics*, vol. 4, no. September, pp. 519–524, 2017, doi: 10.11591/eecs.4.1110.
 - [34] Y. Zhang, Q. Hang, D. Zheng, F. Lin, and C. Chen, “Fabrication of a Laminated Actuator with Excellent Linearity Using Ground Potassium Sodium Niobate-Based Ceramic Sheets,” *Inorganics*, vol. 12, no. 1, 2024, doi: 10.3390/inorganics12010018.
 - [35] A. N. Halisyah, D. Adiputra, and A. Al Farouq, “Field Oriented Control Driver Development Based On BTS7960 for Physiotherapy Robot Implementation,” *Int. J. Electr. Comput. Eng.*, vol. 14, no. 2, pp. 1486–1495, 2024, doi: 10.11591/ijece.v14i2.pp1486-1495.
 - [36] M. Rohman and D. I. Saputra, “Modelling and Controlling The Actuator Joint Angle Position on The Robot Arm Base Using Discrete PID Algorithm,” 2021.
 - [37] A. Latif, H. A. Widodo, R. Rahim, and K. Kunal, “Implementation of Line Follower Robot Based Microcontroller ATmega32A,” 2020.
 - [38] R. Agustian, A. Bintoro, Rosidana, M. Jannah, Salahuddin, and W. K. A. Al-Ani, “Design of Automatic Coffee Bean Roaster Based on Arduino Uno Microcontroller,” 2022.

- [39] M. Luqman, B. Anggraheny, Herwandi, and A. Murtono, “Aplikasi dan Unjuk Kerja Motor Driver L-298 dan BTS7960 sebagai Power Switching pada Inverter,” 2025.
- [40] B. Y. Wedha, A. B. P. B. Wedha, and H. Haryono, “Design and Build Mini Digital Scale using Internet of Things,” *Sinkron*, vol. 7, no. 2, pp. 405–412, 2022, doi: 10.33395/sinkron.v7i2.11345.
- [41] B. Ren and J. Liu, “Design of A Plantar Pressure Insole Measuring System Based on Modular Photoelectric Pressure Sensor Unit,” *Sensors*, vol. 21, no. 11, 2021, doi: 10.3390/s21113780.
- [42] R. Regidor, R. J. Lasaga, M. C. Suansing, and P. Taculod, “Development of Automatic Object Lifter,” *J. Emerg. Technol. Innov.*, vol. 1, no. 1, pp. 20–26, 2023, doi: 10.55990/umjeti.v1i1.02.
- [43] S. A. Muttalib, N. Bintoro, J. N. W. Karyadi, and A. D. Saputro, “Development of Device for Pressure Control System in a Freezer of Pressed-Plate Type,” *J. Tek. Pertan. Lampung (Journal Agric. Eng.)*, vol. 12, no. 1, p. 139, 2023, doi: 10.23960/jtep-l.v12i1.139-151.
- [44] H. Kim *et al.*, “A Wide Input Range 95.4% Power Efficiency DC-DC Buck Converter with A Phase-Locked Loop in 0.18 μ m BCD,” 2016.
- [45] A. F. H. A. Ghani, M. H. Poad, and A. A. Bakar, “Power Losses Analysis of Multiphase DC-DC Buck Converter Using OrCAD PSpice Software,” 2022.
- [46] H. Akca and A. Aktas, “Examination and Experimental Comparison of DC/DC Buck Converter Topologies Used in Wireless Electric Vehicle Charging Applications,” 2024.
- [47] M. Karimi, M. Pichan, A. Abrishamifar, and M. Fazeli, “An Improved Integrated Control Modeling of A High-Power Density Interleaved Non-Inverting Buck-Boost DC-DC Converter,” 2018.
- [48] P. I. Vasilye, R. R. Aflyatunov, and R. T. Khazieva, “Development of An Effective Device for Electrohydroimpulse Treatment of Aqueous Solutions,” 2022.
- [49] Z. Tian, L. Song, J. Wang, and Y. Ding, “Personal Safety Risk Analysis of Power Enterprises Under The Background of New Power System,” 2023.

- [50] K. M. U. Ahmed and M. Alvarez, "A Novel Reliability Index to Assess The Computational Resource Adequacy in Data Centers," 2021, *International Journal of Electrical and Computer Engineering*.
- [51] J. Zhao *et al.*, "Reliability Evaluation of NPP's Power Supply System Based on Improved GO-FLOW Method," 2016.
- [52] V. Sivanagaraju, K. Shashidar, and K. Somesh, "Accident Prevention System Using Arduino: A Prototype for Collision Detection and Avoidance," pp. 9–11, 2025, doi: 10.55041/IJSREM41042.
- [53] V. M. Patil, "Liquid Temperature Measurement Using Arduino," *Int. Sci. J. Eng. Manag.*, vol. 03, no. 03, pp. 1–9, 2024, doi: 10.55041/isjem01448.
- [54] K. S. Wibawa, P. Wirabuana, and A. C. Winarta, "Internet of Things Based Control and Monitoring LCD Projector for Smart Class Room Concept," *J. Ilm. Merpati*, vol. 10, 2022.
- [55] C. Perjaru, G. Predușcă, M. Avram, M. Radu, and C. Stănescu, "Monitoring A Fluid Circuit: A Comparison between Arduino UNO and PIC," *Sci. Bull. Electr. Eng. Fac.*, vol. 23, no. 2, pp. 51–59, 2023, doi: 10.2478/sbeef-2023-0019.
- [56] I. Fenriana, D. S. D. Putra, B. Dermawan, and Y. Kurnia, "Smart Home Prototype with HC-05 Bluetooth and RFID Modules, Based on Microcontroller," 2022.
- [57] N. Yusop, N. A. Mokhtar, and S. F. N. Sadikan, "Development of Arduino Applications for IoT Applications in Software Engineering Education: A Systematic Literature Review," *Bull. Electr. Eng. Informatics*, vol. 13, no. 3, pp. 1824–1831, 2024, doi: 10.11591/eei.v13i3.4506.
- [58] M. I. Ahmed, M. N. Srinivasan, N. H. Venkatesh, R. Ganesh, R. U. Kumar, and R. A. Ameerudeen, "Free Space Laser Communication Using Modern Laser Diodes," 2023.
- [59] C. G. Ong, J. C. Fermano, and A. C. P. Daniot, "An Impact Study on The Arduino Programming Training for Beginners," *Proc. Int. Conf. E-Learning 2022, EL 2022 - Part Multi Conf. Comput. Sci. Inf. Syst. 2022, MCCSIS 2022*, no. 2021, pp. 134–140, 2022.

- [60] M. T. Yupanqui, C. V. Silva, L. Farriol, A. S. Ortiz, J. C. Cobo, and F. Pereira, "Exploiting Arduino Features to Develop Programming Competencies," 2022.
- [61] S. Arakliotis, D. G. Nikolos, and E. Kalligeros, "LAWRIS: A Rule-Based Arduino Programming System for Young Students," 2016.
- [62] A. J. Molina-Cantero, J. A. Castro-García, C. Lebrato-Vázquez, I. M. Gómez-González, and M. Merino-Monge, "Real-Time Processing Library for Open-Source Hardware Biomedical Sensors," *Sensors (Switzerland)*, vol. 18, no. 4, 2018, doi: 10.3390/s18041033.
- [63] V. K. Abdrakhmanov, R. B. Salikhov, and S. A. Popov, "Experience of Using EasyEDA to Develop Training Boards on The PIC16f887 Microcontroller," 2021.
- [64] S. Fuada *et al.*, "Studi EasyEDA sebagai Alternatif Simulator Rangkaian Listrik: Pengujian pada Rangkaian Mesh dan Pembuktiannya dengan Eksperimen Aktual," 2023.
- [65] V. A. Kusuma, H. Arof, S. S. Suprpto, B. Suharto, R. A. Sinulingga, and F. Ama, "An Onternet of Things-Based Touchless Parking System Using ESP32-CAM," 2023.
- [66] C. E. R. Colunga *et al.*, "Optoelectronic System for Measuring The Sugar Content in Citrus Fruits," 2024.
- [67] M. Ramdhani, "Desain Dan Cetak Printed Circuit Board Pada Pelatihan Elektronika Lanjutan Di Balai Pelatihan Teknik Sintelis Pt Kereta Api Indonesia," *Pros. COSECANT Community Serv. Engagem. Semin.*, vol. 2, no. 2, 2023, doi: 10.25124/cosecant.v2i2.18580.
- [68] L. Saor and J. De Torre-cantero, "Cloud-Based Collaborative 3D Modeling to Train Engineers for The Industry 4.0," vol. 0, 2019.
- [69] H. K. Mahto *et al.*, "Design and Analysis of The Component of Glass Cleaning Robot Using Generative Designing Module," 2023.
- [70] M. Kiew-ong-art *et al.*, "Comparative Study of Takagi-Sugeno-Kang and Madani Algorithms in Type-1 and Interval Type-2 Fuzzy Control for Self-Balancing Wheelchairs," *Int. J. Robot. Control Syst.*, vol. 3, no. 4, pp. 643–

- 657, 2023, doi: 10.31763/ijrcs.v3i4.1154.
- [71] E. S. Rahayu, A. Ma'arif, and A. Cakan, "Particle Swarm Optimization (PSO) Tuning of PID Control on DC Motor," *Int. J. Robot. Control Syst.*, vol. 2, no. 2, pp. 435–447, 2022, doi: 10.31763/ijrcs.v2i2.476.
- [72] S. W. Shneen, H. S. Dakheel, and Z. B. Abdullah, "Simulation and modeling for controlling stepper motor with tuned PID by GWO: comparative study," *Int. J. Adv. Appl. Sci.*, vol. 13, no. 2, pp. 234–248, 2024, doi: 10.11591/ijaas.v13.i2.pp234-248.
- [73] J. Chen *et al.*, "A Comparison of Linear Regression, Regularization, and Machine Learning Algorithms to Develop Europe-Wide Spatial Models of Fine Particles and Nitrogen Dioxide," *Environ. Int.*, vol. 130, no. June, 2019, doi: 10.1016/j.envint.2019.104934.
- [74] M. Badura, P. Batog, A. Drzeniecka-Osiadacz, and P. Modzel, "Regression Methods in The Calibration of Low-Cost Sensors for Ambient Particulate Matter Measurements," *SN Appl. Sci.*, vol. 1, no. 6, 2019, doi: 10.1007/s42452-019-0630-1.
- [75] A. V. Rachmawati, M. Yantidewi, and Penelitian, "Analisis Kalibrasi Sensor BME280 dengan Pendekatan Regresi Linear pada Pengukuran Temperatur, Kelembaban Relatif, dan Titik Embun," *J. Kolaboratif Sains*, vol. 7, no. 5, pp. 1589–1597, 2024, doi: 10.56338/jks.v7i5.5272.