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DAFTAR PUSTAKA

Alsaqoor, S., Marashli, A., At-Tawarah, R., Borowski, G., Alahmer, A., Aljabarin, N., and Beithou, N., 2022, Evaluation of Wind Energy Potential in View of the Wind Speed Parameters – A Case Study for the Southern Jordan, *Adv. Sci. Technol. Res. J.*, 16(6), 275–285.

Angelbratt, J., Mellqvist, J., Simpson, D., Jonson, J.E., Blumenstock, T., Borsdorff, T., Duchatelet, P., Forster, F., Hase, F., Mahieu, E., De Mazière, M., Notholt, J., Petersen, A.K., Raffalski, U., Servais, C., Sussmann, R., Warneke, T., and Vigouroux, C., 2011, Carbon Monoxide (CO) and Ethane (C_2 H_6) Trends from Ground-Based Solar FTIR Measurements at Six European Stations, Comparison and Sensitivity Analysis with the EMEP Model, *Atmos. Chem. Phys.*, 11(17), 9253–9269.

Ariati, A., Arifin, M.Z., Sutikno, F.R., Bowoputro, H., and Miftahulkhair, M., 2024, Identifying the Influence of Traffic Management on Vehicle Emissions and the Distribution of Air Dispersion in the Makassar Port Area, *East.-Eur. J. Enterp. Technol.*, 3(10), 84–91.

Ramadhina, A., and Najicha, F.U., 2022, Regulasi Kendaraan Listrik di Indonesia Sebagai Upaya Pengurangan Emisi Gas, *Jurnal Hukum To-ra*, 8(2), 201–208.

Bady, M., 2017, Evaluation of Gaussian Plume Model against CFD Simulations through the Estimation of CO and NO Concentrations in an Urban Area, *Am. J. Environ. Sci.*, 13(2), 93–102.

Bays, D., Bennett, E., and Finnie, T., 2020, Applying Probability-Weighted Incubation Period Distributions to Traditional Wind Rose Methodology to Improve Public Health Investigations of Legionnaires' Disease Outbreaks, *Epidemiol. Infect.*, 148, 1–6.

Bellini, A., Golzio, A., Magri, T., Ferrarese, S., Pession, G., and Manfrin, M., 2022, Sensitivity of Pollutant Concentrations to the Turbulence Schemes of a Dispersion Modelling Chain over Complex Orography, *Atmosphere*, 13(2), 167.

Benestad, R.E., 2017, A Mental Picture of the Greenhouse Effect: A Pedagogic Explanation, *Theor. Appl. Climatol.*, 128(3–4), 679–688.

Bertrand, L., Dawkins, L., Jayaratne, R., and Morawska, L., 2020, How to Choose Healthier Urban Biking Routes: CO as a Proxy of Traffic Pollution, *Heliyon*, 6(6), e04195.

Birchill, A.J., Beaton, A.D., Hull, T., Kaiser, J., Mowlem, M., Pascal, R., Schaap, A., Voynova, Y.G., Williams, C., and Palmer, M., 2021, Exploring Ocean Biogeochemistry Using a Lab-on-Chip Phosphate Analyser on an Underwater Glider, *Front. Mar. Sci.*, 8, 698102.

UNIVERSITAS GADJAH MADA
PEMODELAN DISPERSI POLUTAN CO, NO2, DAN O3 AKIBAT EMISI KENDARAAN BERMOTOR MENGGUNAKAN AERMOD PADA JALAN TOL SOLO-YOGYAKARTA DI ATAS JALAN PADJAJARAN
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Briant, R., Seigneur, C., Gadrat, M., and Bugajny, C., 2013, Evaluation of Roadway Gaussian Plume Models with Large-Scale Measurement Campaigns, *Geosci. Model Dev.*, 6(2), 445–456.

Çakir, A., SiPahi, H., Tezcan, H., and Akpancar, S., 2020, Design of Carbon Monoxide (CO) and Smoke Sensor, and Creation of Warning System with Fixed Telephone Call Using These Sensors, *Resilience*, 4(1), 23–32.

Chambers, S.D., Wang, F., Williams, A.G., Xiaodong, D., Zhang, H., Lonati, G., Crawford, J., Griffiths, A.D., Ianniello, A., and Allegrini, I., 2015, Quantifying the Influences of Atmospheric Stability on Air Pollution in Lanzhou, China, Using a Radon-Based Stability Monitor, *Atmos. Environ.*, 107, 233–243.

Chien, Y.-C., Escofet-Martin, D., and Dunn-Rankin, D., 2016, CO Emission from an Impinging Non-Premixed Flame, *Combust. Flame*, 174, 16–24.

Chauhan, A. and Singh, R.P., 2021, Effect of Lockdown on HCHO and Trace Gases over India during March 2020, *Aerosol Air Qual. Res.*, 21(4), 200445.

Chen, Y., Ma, Q., Lin, W., Xu, X., Yao, J., and Gao, W., 2020, Measurement Report: Long-Term Variations in Carbon Monoxide at a Background Station in China's Yangtze River Delta Region, *Atmos. Chem. Phys.*, 20(24), 15969–15982.

Croitoru, C. and Nastase, I., 2018, A State of the Art Regarding Urban Air Quality Prediction Models, *E3S Web Conf.*, 32(01010), 1–5.

Demirarslan, K.O., 2025, Effects of Topographic Variables on Traffic-Related Pollutant Concentrations: Comparison of AERMOD and CAL3QHCR Models, *Front. Environ. Sci.*, 13, 1577330.

Dhyani, R. and Sharma, N., 2017, Sensitivity Analysis of CALINE4 Model under Mix Traffic Conditions, *Aerosol Air Qual. Res.*, 17(1), 314–329.

Donzelli, G. and Suarez-Varela, M.M., 2024, Tropospheric Ozone: A Critical Review of the Literature on Emissions, Exposure, and Health Effects, *Atmosphere*, 15(7), 779.

Downey, N., Emery, C., Jung, J., Sakulyanontvittaya, T., Hebert, L., Blewitt, D., and Yarwood, G., 2015, Emission Reductions and Urban Ozone Responses under More Stringent US Standards, *Atmos. Environ.*, 101, 209–216.

Erickson, L.E., Newmark, G.L., Higgins, M.J., and Wang, Z., 2020, Nitrogen Oxides and Ozone in Urban Air: A Review of 50 plus Years of Progress, *Env. Prog. and Sustain Energy*, 39(6), e13484.

Estévez, S., Hernández, V., Hernández-Sancho, F., Feijoo, G., and Moreira, M.T., 2024, Life-Cycle Assessment, Carbon-Footprint and Techno-Economic

UNIVERSITAS
GADJAH MADA
PEMODELAN DISPERSI POLUTAN CO, NO2, DAN O3 AKIBAT EMISI KENDARAAN BERMOTOR MENGGUNAKAN AERMOD PADA JALAN TOL SOLO-YOGYAKARTA DI ATAS JALAN PADJAJARAN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Analysis, in *Anaerobic Treatment of Domestic Wastewater*, IWA Publishing, London, pp. 293–328.

Farhane, M. and Souhar, O., 2023, *A Novel Development in Three-Dimensional Analytical Solutions for Air Pollution Dispersion Modeling*, IntechOpen, London.

Gauss, M., Myhre, G., Pitari, G., Prather, M.J., Isaksen, I.S.A., Berntsen, T.K., Brasseur, G.P., Dentener, F.J., Derwent, R.G., Hauglustaine, D.A., Horowitz, L.W., Jacob, D.J., Johnson, M., Law, K.S., Mickley, L.J., Müller, J. -F., Plantevin, P. -H., Pyle, J.A., Rogers, H.L., Stevenson, D.S., Sundet, J.K., Van Weele, M., and Wild, O., 2003, Radiative Forcing in the 21st Century Due to Ozone Changes in the Troposphere and the Lower Stratosphere, *J. Geophys. Res.*, 108(D9), 2002JD002624.

Ge, S., Wang, S., Zhang, J., Xu, Q., and Ho, T., 2021, Ozone Pollution Control Strategies Examined by Empirical Kinetics Modeling Approach over the Beaumont-Port Arthur Region in Texas of USA, *Atmos. Pollut. Res.*, 12(1), 403–413.

Glarborg, P., Miller, J.A., Ruscic, B., and Klippenstein, S.J., 2018, Modeling Nitrogen Chemistry in Combustion, *Prog. Energy Combust. Sci.*, 67, 31–68.

Guo, D., Zhao, J., Xu, Y., Sun, F., Li, K., Wang, J., and Sun, Y., 2020, The Impact of Driving Conditions on Light-Duty Vehicle Emissions in Real-World Driving, *Transport*, 35(4), 379–388.

Hanna, S. and Chang, J., 2012, Acceptance Criteria for Urban Dispersion Model Evaluation, *Meteorol Atmos Phys*, 116(3–4), 133–146.

Harrison, R.M. and Beddows, D.C., 2017, Efficacy of Recent Emissions Controls on Road Vehicles in Europe and Implications for Public Health, *Sci. Rep.*, 7(1), 1152.

He, H., Liang, X.-Z., Sun, C., Tao, Z., and Tong, D.Q., 2020, The Long-Term Trend and Production Sensitivity Change in the US Ozone Pollution from Observations and Model Simulations, *Atmos. Chem. Phys.*, 20(5), 3191–3208.

Heriyanto, E., Kadarsah, K., and Pradana, R.P., 2020, Distribusi Pola Aerosol di Wilayah Industri Balongan dan Suralaya, *Jurnal Manusia & Lingkungan*, 25(2), 45.

Hidajat, D., Tilana, F.G., and Kusuma, I.G.B.S.A., 2023, Dampak Polusi Udara terhadap Kesehatan Kulit, *Unram Med. J.*, 12(4), 371–378.

Huboyo, H.S., Tohno, S., and Cao, R., 2011, Indoor PM2.5 Characteristics and CO Concentration Related to Water-Based and Oil-Based Cooking Emissions Using a Gas Stove, *Aerosol Air Qual. Res.*, 11(4), 401–411.

UNIVERSITAS GADJAH MADA
PEMODELAN DISPERSI POLUTAN CO, NO2, DAN O3 AKIBAT EMISI KENDARAAN BERMOTOR MENGGUNAKAN AERMOD PADA JALAN TOL SOLO-YOGYAKARTA DI ATAS JALAN PADJAJARAN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Huertas, J.I., Martinez, D.S., and Prato, D.F., 2021, Numerical Approximation to the Effects of the Atmospheric Stability Conditions on the Dispersion of Pollutants over Flat Areas, *Sci. Rep*., 11(1), 11566.

Ibrahim, R.A., Inan, H., and Fahim, I.S., 2023, A Comparative Cradle-to-Gate Life Cycle Assessment of Three Cotton Stalk Waste Sustainable Applications, *Sci. Rep.*, 13(1), 20781.

Ionescu, G.L. and Ionescu, Gh.C., 2023, Atmospheric Pollutant Dispersion Modeling Methods, *J. Appl. Eng. Sci.*, 13(2), 297–302.

Istirokhatun, T., Agustini, I.T., and Sudarno, S., 2016, Investigasi Pengaruh Kondisi Lalu Lintas dan Aspek Meteorologi Terhadap Konsentrasi Pencemar SO_2 di Kota Semarang, *Presipitasi*, 13(1), 21.

Javed, Z., Mehmood, K., Liu, C., Zheng, X., Xu, C., Tanvir, A., Ajmal Khan, M., Siddique, N., and Du, D., 2023, Examining Current Research Trends in Ozone Formation Sensitivity: A Bibliometric Analysis, *Processes*, 11(8), 2240.

Kaczmarczyk, M., 2019, Methodology and Impact Categories of Environmental Life Cycle Assessment in Geothermal Energy Sector, *E3S Web Conf.*, 100, 00032.

Kamiński, A. and Koziczyński, P., 2019, The Use of Dedicated System Tools in Integrated Management in Environmental Protection on the Example of LDAR Program, *J. Ecol. Eng.*, 20(3), 172–178.

Khalil, M.A.K., 2018, Steady States and Transport Processes in Urban Ozone Balances, *npj Clim. Atmos. Sci.*, 1(1), 22.

Khan, N. and Koromyslova, E., 2019, Location Optimization of a Coal Power Plant to Balance Costs against Plant's Emission Exposure, *Am. J. Oper. Res.*, 09(01), 31–58.

Koepke, P., Garhammer, M., Hess, M., and Roeth, E.-P., 2010, NO_2 Photolysis Frequencies in Street Canyons, *Atmos. Chem. Phys.*, 10(15), 7457–7466.

Kumar, P., Singh, S.K., Ngae, P., Feiz, A.-A., and Turbelin, G., 2017, Assessment of a CFD Model for Short-Range Plume Dispersion: Applications to the Fusion Field Trial 2007 (FFT-07) Diffusion Experiment, *Atmos. Res.*, 197, 84–93.

Kwiecień, J. and Szopińska, K., 2020, Mapping Carbon Monoxide Pollution of Residential Areas in a Polish City, *Remote Sens.*, 12(18), 2885.

Lapere, R., 2021, Observation and modeling of pollution events in Chile, *Thesis* Institut Polytechnique de Paris, Paris.

UNIVERSITAS
GADJAH MADA
PEMODELAN DISPERSI POLUTAN CO, NO2, DAN O3 AKIBAT EMISI KENDARAAN BERMOTOR MENGGUNAKAN AERMOD PADA JALAN TOL SOLO-YOGYAKARTA DI ATAS JALAN PADJAJARAN
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Lebourgeois, T., Sauvage, B., Wolff, P., Josse, B., Marécal, V., Bennouna, Y., Blot, R., Boulanger, D., Clark, H., Cousin, J.-M., Nedelec, P., and Thouret, V., 2024, Seasonal, Regional, and Vertical Characteristics of High-Carbon-Monoxide Plumes along with Their Associated Ozone Anomalies, as Seen by IAGOS between 2002 and 2019, *Atmos. Chem. Phys.*, 24(24), 13975–14004.

Li, J., Wang, Y., Zhang, R., Smeltzer, C., Weinheimer, A., Herman, J., Boersma, K.F., Celarier, E.A., Long, R.W., Szykman, J.J., Delgado, R., Thompson, A.M., Knepp, T.N., Lamsal, L.N., Janz, S.J., Kowalewski, M.G., Liu, X., and Nowlan, C.R., 2021, Comprehensive Evaluations of Diurnal NO_2 Measurements during DISCOVER-AQ 2011: Effects of Resolution-Dependent Representation of NO_x Emissions, *Atmos. Chem. Phys.*, 21(14), 11133–11160.

Li, P., Yang, Y., Wang, H., Li, S., Li, K., Wang, P., Li, B., and Liao, H., 2023, Source Attribution of Near-Surface Ozone Trends in the United States during 1995–2019, *Atmos. Chem. Phys.*, 23(9), 5403–5417.

Liu, L., Zhuang, Q., Zhu, Q., Liu, S., Van Asperen, H., and Pihlatie, M., 2018, Global Soil Consumption of Atmospheric Carbon Monoxide: An Analysis Using a Process-Based Biogeochemistry Model, *Atmos. Chem. Phys.*, 18(11), 7913–7931.

Mair-Bauernfeind, C., Zimek, M., Lettner, M., Hesser, F., Baumgartner, R.J., and Stern, T., 2020, Comparing the Incomparable? A Review of Methodical Aspects in the Sustainability Assessment of Wood in Vehicles, *Int. J. Life Cycle Assess.*, 25(11), 2217–2240.

Makwana, V., 2024, Efficiency Enhancement in Automotive Catalytic Converters: Recent Developments and Future Directions, *Int. J. Res. Appl. Sci. Eng. Technol.*, 12(4), 2451–2455.

Mao, S., Lang, J., Chen, T., Cheng, S., and Hu, F., 2022, Comparative Study of Source Inversion Under Multiple Atmospheric Pollutant Emission Scenarios, *Front. Environ. Sci.*, 10, 857701.

Matara, C., Osano, S., Yusuf, A., and Akech, E., 2024, An Assessment of the Contribution of Vehicular Traffic to Ambient Air Quality - A Case Study of Nairobi Expressway Corridor, *Civ. Environ. Eng.*, 20(1), 54–67.

Matthaios, V.N., Triantafyllou, A.G., Albanis, T.A., Sakkas, V., and Garas, S., 2018, Performance and Evaluation of a Coupled Prognostic Model TAPM over a Mountainous Complex Terrain Industrial Area, *Theor. Appl. Climatol.*, 132(3–4), 885–903.

Metrangolo, C., Dinoi, A., Esposito, A., Pappaccogli, G., Donateo, A., Santiago, J.L., and Buccolieri, R., 2024, Assessing Urban Air Pollution Dynamics: The

UNIVERSITAS
GADJAH MADA
PEMODELAN DISPERSI POLUTAN CO, NO2, DAN O3 AKIBAT EMISI KENDARAAN BERMOTOR MENGGUNAKAN AERMOD PADA JALAN TOL SOLO-YOGYAKARTA DI ATAS JALAN PADJAJARAN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Impact of Traffic Emissions and Urban Morphology in Lecce and Bari, Italy, *Bull. of Atmos. Sci.& Technol.*, 5(1), 13.

Milando, C., 2018, Evaluation and Application of Current Methods Used to Estimate Exposure to Traffic-Related Air Pollutants at High Spatial or Temporal Resolutions., *Thesis*, University of Michigan, Ann Arbor.

Mohammad Ebrahimi, S. and Koh, L., 2021, Manufacturing Sustainability: Institutional Theory and Life Cycle Thinking, *J. Clean. Prod.*, 298, 126787.

Mohammadnazar, A., Khattak, Z.H., and Khattak, A.J., 2024, Assessing Driving Behavior Influence on Fuel Efficiency Using Machine-Learning and Drive-Cycle Simulations, *Transp. Res. Part D Transp. Environ.*, 126, 104025.

Mokhtar, A., Saifullah, A., and Rahmandhika, A., 2021, Honeycomb-Shaped Brass Plate Catalyst to Reduce Motor Vehicle Emissions, *J. Energy Mech. Mater. Manuf. Eng.*, 6(1), 25–32.

Monbureau, E.M., Heist, D.K., Perry, S.G., Brouwer, L.H., Foroutan, H., and Tang, W., 2018, Enhancements to AERMOD's Building Downwash Algorithms Based on Wind-Tunnel and Embedded-LES Modeling, *Atmos. Environ.*, 179, 321–330.

Monks, P.S., Archibald, A.T., Colette, A., Cooper, O., Coyle, M., Derwent, R., Fowler, D., Granier, C., Law, K.S., Mills, G.E., Stevenson, D.S., Tarasova, O., Thouret, V., Von Schneidemesser, E., Sommariva, R., Wild, O., and Williams, M.L., 2015, Tropospheric Ozone and Its Precursors from the Urban to the Global Scale from Air Quality to Short-Lived Climate Forcer, *Atmos. Chem. Phys.*, 15(15), 8889–8973.

Namrata and Wagh, N.D., 2022, A Review on Atmospheric Dispersion System for Air Pollutants Integrated with GIS in Urban Environment, *Nat. Env. Poll. Tech*, 21(4), 1553–1563.

Nawaz, M.O., Henze, D.K., Anenberg, S.C., Ahn, D.Y., Goldberg, D.L., Tessum, C.W., and Chafe, Z.A., 2023, Sources of Air Pollution-Related Health Impacts and Benefits of Radially Applied Transportation Policies in 14 US Cities, *Front. Sustain. Cities*, 5, 1102493.

Ngo, K.Q., Hoang, L.A., Ho, B.Q., Harris, N.R.P., Drew, G.H., and Mead, M.I., 2023, Street-Scale Dispersion Modelling Framework of Road-Traffic Derived Air Pollution in Hanoi, Vietnam, *Environ. Res.*, 233, 116497.

Nishitateno, S., Burke, P.J., and Arimura, T.H., 2024, Road Traffic Flow and Air Pollution Concentrations: Evidence from Japan, *Int. J. Econ. Policy Stud.*, 18(2), 357–385.

UNIVERSITAS
GADJAH MADA
PEMODELAN DISPERSI POLUTAN CO, NO2, DAN O3 AKIBAT EMISI KENDARAAN BERMOTOR MENGGUNAKAN AERMOD PADA JALAN TOL SOLO-YOGYAKARTA DI ATAS JALAN PADJAJARAN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Nitoiu, C., Cofaru, C., and Popescu, M., 2025, Influence of Road and Traffic Conditions on Emissions and Fuel Consumption of Light Vehicles in a Real Urban Driving Cycle, *Environ. Sci. Pollut. Res.*, 32(25), 15050–15065.

Nuraini, T.A., Permana, D.S., Satyaningsih, R., Anggraeni, R., and Aldrian, E., 2020, Comparison of Total Suspended Particulate (TSP) Measurement in Urban and Suburban Areas of Bali during Nyepi Day 2015, *For. Geo.*, 33(2), 173–183.

Orina, F., Amukoye, E., Bowyer, C., Chakaya, J., Das, D., Devereux, G., Dobson, R., Dragosits, U., Gray, C., Kiplimo, R., Lesosky, M., Loh, M., Meme, H., Mortimer, K., Ndombi, A., Pearson, C., Price, H., Twigg, M., West, S., and Semple, S., 2024, Household Carbon Monoxide (CO) Concentrations in a Large African City: An Unquantified Public Health Burden?, *Environ. Pollut.*, 351, 124054.

Pan, S., Roy, A., Choi, Y., Sun, S., and Gao, H.O., 2019, The Air Quality and Health Impacts of Projected Long-Haul Truck and Rail Freight Transportation in the United States in 2050, *Environ. Int.*, 130, 104922.

Pandey, G., Venkatram, A., and Arunachalam, S., 2024, Modeling the Air Quality Impact of Aircraft Emissions: Is Area or Volume the Appropriate Source Characterization in AERMOD?, *Air Qual. Atmos. Health*, 17(7), 1425–1434.

Patiño, W.R., Vlček, O., Bauerová, P., Belda, M., Bureš, M., Eben, K., Fuka, V., Geletič, J., Jareš, R., Karel, J., Keder, J., Krč, P., Radović, J., Řezníček, H., Šindelářová, A., and Resler, J., 2024, On the Suitability of Dispersion Models of Varying Degree of Complexity for Air Quality Assessment and Urban Planning, *Build. Environ.*, 264, 111892.

Patton, A.P., Milando, C., Durant, J.L., and Kumar, P., 2017, Assessing the Suitability of Multiple Dispersion and Land Use Regression Models for Urban Traffic-Related Ultrafine Particles, *Environ. Sci. Technol.*, 51(1), 384–392.

Plejdrup, M.S., Nielsen, O.-K., and Nielsen, M., 2015, *Emission Inventory for Fugitive Emissions from Fuel in Denmark*, Aarhus University, DCE – Danish Centre for Environment and Energy, Aarhus.

Poerna, S.O., Sudharto, P.H., and Haryono, S.H., 2018, Dispersion Model of Total Suspended Particulate from Tanjung Jati B Jepara Coal-Fired Power Plant's Chimneys, *E3S Web Conf.*, 73, 05024.

Popoola, A.O., Jimoda, L.A., Olu-Arotiowa, O.A., Adebanjo, S.A., Raji, W.A., and Adepoju, T.T., 2022, Modelling of Pollutants Dispersion from Open Burning of Solid Waste Using AERMOD, *Sci. Eng. Technol.*, 2(2), 14–22.

UNIVERSITAS
GADJAH MADA
PEMODELAN DISPERSI POLUTAN CO, NO2, DAN O3 AKIBAT EMISI KENDARAAN BERMOTOR MENGGUNAKAN AERMOD PADA JALAN TOL SOLO-YOGYAKARTA DI ATAS JALAN PADJAJARAN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Pramadhani, E.G., Lestariningsih, D.S., and Mataburu, I.B., 2023, Analisis Sebaran Spasial Penderita ISPA Wilayah Sekitar Lapak Pengepul Sampah Anorganik di Desa Setiamekar, *Jurnal Penelitian Geografi*, 11(2), 143–150.

Pryciński, P., Pielecha, J., Korzeb, J., Jachimowski, R., and Pielecha, P., 2025, Impact of Vehicle Aging and Mileage on Air Pollution Emissions, *Energies*, 18(4), 939.

Purwanto, C.P., 2015, Inventarisasi Emisi Sumber Bergerak di Jalan (On Road) Kota Denpasar, *Ecotrophic J. Environ. Sci.*, 9(1), 1.

Purwanto, P., Susanto, A., Hasari, A.A., Putro, E.K., and Manuel, A.A., 2024, Modelling of Air Pollution Dispersion in the Utilization of Used Oil as a Fuel, *E3S Web Conf.*, 503, 04005.

Radović, B., Ilić, P., Popović, Z., Vuković, J., and Smiljanić, S., 2022, Air Quality in the Town of Bijeljina - Trends and Levels of So2 and No2 Concentrations, *Qual. Life*, 22(1), 46–57.

Rahman, B., 2018, The Impact of Canyon Design on the Thermal Environment of the Coastal Area of Selatpanjang City, *Int. J. Eng. Res. Technol.*, 7(7), 98–104.

Ramadan, B.S., Rosmalina, R.T., Khair, H., Rachman, I., and Matsumoto, T., 2023, Potential Risks of Open Waste Burning at the Household Level: A Case Study of Semarang, Indonesia, *Aerosol Air Qual. Res.*, 23(5), 220412.

Ravi, S.S., Osipov, S., and Turner, J.W.G., 2023, Impact of Modern Vehicular Technologies and Emission Regulations on Improving Global Air Quality, *Atmosphere*, 14(7), 1164.

Rzeszutek, M., 2023, Accuracy Assessment of WRF Model in the Context of Air Quality Modeling in 2 Complex Terrain, .

Sadanaga, Y., Kawasaki, S., Tanaka, Y., Kajii, Y., and Bandow, H., 2017, New System for Measuring the Photochemical Ozone Production Rate in the Atmosphere, *Environ. Sci. Technol.*, 51(5), 2871–2878.

Sbahieh, S., Mckay, G., and Al-Ghamdi, S.G., 2023, A Comparative Life Cycle Assessment of Fiber-Reinforced Polymers as a Sustainable Reinforcement Option in Concrete Beams, *Front. Built Environ.*, 9, 1194121.

Shamsuddin, S.D., Omar, N., and Koh, M.H., 2017, Development of Radionuclide Dispersion Modeling Software Based on Gaussian Plume Model, *Matematika*, 33(2), 149–157.

UNIVERSITAS
GADJAH MADA
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Sharifi, F., Meitiv, A., Shelton, J., Xu, X., Burris, M., Vallamsundar, S., and Xu, Y.A., 2022, Regional Traffic Operation and Vehicle Emission Impact Assessment of Lane Management Policies, *Res. Transp. Econ.*, 91, 101067.

Sindhwani, R. and Goyal, P., 2014, Assessment of Traffic-Generated Gaseous and Particulate Matter Emissions and Trends over Delhi (2000–2010), *Atmos. Pollut. Res.*, 5(3), 438–446.

Skeie, R.B., Myhre, G., Hodnebrog, Ø., Cameron-Smith, P.J., Deushi, M., Hegglin, M.I., Horowitz, L.W., Kramer, R.J., Michou, M., Mills, M.J., Olivié, D.J.L., Connor, F.M.O., Paynter, D., Samset, B.H., Sellar, A., Shindell, D., Takemura, T., Tilmes, S., and Wu, T., 2020, Historical Total Ozone Radiative Forcing Derived from CMIP6 Simulations, *Clim. Atmos. Sci.*, 3(1), 32.

Snoun, H., Krichen, M., and Chérif, H., 2023, A Comprehensive Review of Gaussian Atmospheric Dispersion Models: Current Usage and Future Perspectives, *Euro-Mediterr. J. Environ. Integr.*, 8(1), 219–242.

Song, J., Lei, W., Bei, N., Zavala, M., de Foy, B., Volkamer, R., Cardenas, B., Zheng, J., Zhang, R., and Molina, L.T., 2010, Ozone Response to Emission Changes: A Modeling Study during the MCMA-2006/MILAGRO Campaign, *Atmos. Chem. Phys.*, 10, 3827–3846.

Štěpánek, V., Kříž, J., Hyšplerová, L., Keder, J., Ziembik, Z., and Lyčka, A., 2022, Environmental Emissions Dispersion Modelling, Principles and Algorithms; Cross-Border CZ-PL Course for Master's Students, *Chem. Didact. Ecol. Metrol.*, 27(1–2), 165–181.

Stewart, I.T., Clow, G.L., Graham, A.E., and Bacon, C.M., 2020, Disparate Air Quality Impacts from Roadway Emissions on Schools in Santa Clara County (CA), *Appl. Geogr.*, 125, 102354.

Sugiarto, B.L.M., Widiarti, I.W., Kristanto, W.A.D., and Yudono, A.R.A., 2024, Pemodelan Dispersi Gas SO2 dan NO2 Dari Cerobong PLTSa Merah Putih, Bantargebang, Bekasi, Jawa Barat Menggunakan AERMOD View, *Prosiding Seminar Nasional Teknik Lingkungan Kebumian SATU BUMI*, Yogyakarta, Indonesia.

Sun, Z., Zhao, X., Li, Z., Tang, G., and Miao, S., 2021, Boundary Layer Structure Characteristics under Objective Classification of Persistent Pollution Weather Types in the Beijing Area, *Atmos. Chem. Phys*., 21(11), 8863–8882.

Szafranko, E., 2019, Selected Problems of the Environmental Impact Analysis of Investment Projects Based on Life Cycle Assessment Procedure, *J. Ecol. Eng.*, 20(9), 87–94.

Szumska, E.M. and Jurecki, R., 2020, The Effect of Aggressive Driving on Vehicle Parameters, *Energies*, 13(24), 6675.

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GADJAH MADA
PEMODELAN DISPERSI POLUTAN CO, NO2, DAN O3 AKIBAT EMISI KENDARAAN BERMOTOR MENGGUNAKAN AERMOD PADA JALAN TOL SOLO-YOGYAKARTA DI ATAS JALAN PADJAJARAN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Tafesse, D. and Nallamothu, R.B., 2025, Experimental Investigation on Impact of Fuel Jet Size on Performance of Gasoline-Ethanol Blend in a SI Engine Vehicle, *Sci. Rep.*, 15(1), 30092.

Taha, S.S., Idoudi, S., Alhamdan, N., Ibrahim, R.H., Surkatti, R., Amhamed, A., and Alrebei, O.F., 2025, Comprehensive Review of Health Impacts of the Exposure to Nitrogen Oxides (NOx), Carbon Dioxide (CO2), and Particulate Matter (PM), *J. Hazard. Mater. Adv.*, 19, 100771.

Teymoori, M., Chitsaz, I., Zarei, A., Ajami Kashani, N., and Davazdah Emami, M., 2022, Conceptualizing and Evaluating a Novel Method to Reduce Gasoline-Powered Vehicles' Cold-Start Emissions, *Transp. Res. Part D Transp. Environ.*, 111, 103444.

Tezel-Oguz, M.N., Sari, D., Ozkurt, N., and Keskin, S.S., 2020, Application of Reduction Scenarios on Traffic-Related NOx Emissions in Trabzon, Turkey, *Atmos. Pollut. Res.*, 11(12), 2379–2389.

Tögel, M., Čampula, R., and Špička, L., 2019, Measured impacts of low emission zones on air quality changes in German cities. A lesson for the Czech Republic, *Hygiena*, 64(4), 154–163.

Turyanti, A., June, T., and Aldrian, E., 2017, Analisis Pola Dispersi Partikulat dan Sulfurdioksida Menggunakan Model WRFCHEM di Sekitar Wilayah Industri Tangerang dan Jakarta, *Jurnal Manusia dan Lingkungan*, 23(2), 169–178.

Verones, F., Bare, J., Bulle, C., Frischknecht, R., Hauschild, M., Hellweg, S., Henderson, A., Jolliet, O., Laurent, A., Liao, X., Lindner, J.P., Maia De Souza, D., Michelsen, O., Patouillard, L., Pfister, S., Posthuma, L., Prado, V., Ridoutt, B., Rosenbaum, R.K., Sala, S., Ugaya, C., Vieira, M., and Fantke, P., 2017, LCIA Framework and Cross-Cutting Issues Guidance within the UNEP-SETAC Life Cycle Initiative, *J. Clean. Prod.*, 161, 957–967.

Wang, X., Firouzkouhi, H., Chow, J.C., Watson, J.G., Carter, W., and De Vos, A.S.M., 2023, Characterization of Gas and Particle Emissions from Open Burning of Household Solid Waste from South Africa, *Atmos. Chem. Phys.*, 23(15), 8921–8937.

Winkler, S.L., Anderson, J.E., Garza, L., Ruona, W.C., Vogt, R., and Wallington, T.J., 2018, Vehicle Criteria Pollutant (PM, NOx, CO, HCs) Emissions: How Low Should We Go?, *Clim. Atmos. Sci.*, 1(1), 26.

World Health Organization (Eds.), 2010, *WHO Guidelines for Indoor Air Quality: Selected Pollutants*, World Health Organization, Regional Office for Europe, Copenhagen, Denmark.

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GADJAH MADA
PEMODELAN DISPERSI POLUTAN CO, NO2, DAN O3 AKIBAT EMISI KENDARAAN BERMOTOR MENGGUNAKAN AERMOD PADA JALAN TOL SOLO-YOGYAKARTA DI ATAS JALAN PADJAJARAN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Yudison, A., Driejana, D., K. Reksowardojo, I., and Sulaeman, A., 2017, The Role of Vehicle Speed Management in Urban Air Pollutant Emission Reduction, *IPTEK Journal of Proceedings Series*, Surabaya, Indonesia.

Zhang, J., Wei, Y., and Fang, Z., 2019, Ozone Pollution: A Major Health Hazard Worldwide, *Front. Immunol.*, 10, 2518.

Zhang, K. and Batterman, S., 2013, Air Pollution and Health Risks Due to Vehicle Traffic, *Sci. Total Environ.*, 450–451, 307–316.

Zhang, S., Wu, Y., Huang, R., Wang, J., Yan, H., Zheng, Y., and Hao, J., 2016, High-Resolution Simulation of Link-Level Vehicle Emissions and Concentrations for Air Pollutants in a Traffic-Populated Eastern Asian City, *Atmos. Chem. Phys.*, 16(15), 9965–9981.