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Academic Titles / Tasks

Associate Professor, California State University, Los Angeles, 2024 - Continues

Associate Professor, Yildiz Technical University, Faculty Of Mechanical Engineering, Department Of Mechanical Engineering, 2024 - Continues

Associate Professor, Duzce University, Faculty of Engineering, Department of Mechanical Engineering, 2022 - 2024

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Waste to energy: Enhancing biogas utilization in dual-fuel engines using machine learning based prognostic analysis**
Paramasivam P., Alruqi M., AĞBULUT Ü.
Fuel, vol.381, 2025 (SCI-Expanded)
- II. **Thermal assessment of Li-ion battery cells and coolant in hybrid electric vehicles system: Application of conjugate condition and response surface methodology**
Afzal A., Ramis M., Jilte R., Alwetaishi M., Park S. G., Buradi A., Al-Mdallal Q. M., AĞBULUT Ü.
Case Studies in Thermal Engineering, vol.66, 2025 (SCI-Expanded)
- III. **Production of oxy-hydrogen with an alkaline electrolyzer, and its impacts on engine behaviors fuelled with diesel/waste fish biodiesel mixtures supported by graphene nanoparticles**
El-Shafay A., AĞBULUT Ü., Shanmugan S., Gad M.
Energy, vol.314, 2025 (SCI-Expanded)
- IV. **Energy, exergy, and emission (3E) analysis of hydrogen-enriched waste biodiesel-diesel fuel blends on an indirect injection dual-fuel CI engine**
Bayramoğlu K., Bayramoğlu T., Polat F., Sarıdemir S., Alçelik N., AĞBULUT Ü.
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- V. **Hydrogen cultivation through an integrated ranking cycle and proton exchange membrane with an evacuated tube collector powered by hybrid nanofluids**
Sathish T., Giri J., AĞBULUT Ü.
Energy, vol.314, 2025 (SCI-Expanded)
- VI. **Biofuel conversion through heterogeneous solid catalysts and carbon nanotubes by biological waste material with sheep fat oil**
Sathish T., Saravanan R., Giri J., Shaikh S. F., Ubaidullah M., AĞBULUT Ü.
International Journal of Hydrogen Energy, vol.96, pp.692-702, 2024 (SCI-Expanded)
- VII. **Flashback control in supplying onboard-produced HHO to enrich gasoline-fueled motorcycle engines**
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- VIII. **Waste to Energy: Combustion, Performance, and Emission Characteristics of Waste Animal Fats/Diesel Blends Premixed with Various Alcohols as Port Fuels**
Sathish T., Giri J., Saravanan R., AĞBULUT Ü.

Global Challenges, vol.8, no.12, 2024 (SCI-Expanded)

- IX. **Experimental investigation on utilization of Sesbania grandiflora residues through thermochemical conversion process for the production of value added chemicals and biofuels**
Janardhana K., Sowmya Dhanalakshmi C., Thilagham K., Chinnaiyan S. K., Jai Shanker Pillai H., Sathish T., AĞBULUT Ü., Palani K., De Poures M. V.
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- X. **Decoding the performance of a blend of metal-oxide nanoparticles in Eichhornia crassipes biodiesel at varying injection timing through the routes of thermodynamic analysis and statistical optimization**
Jain A., Bora B. J., Kumar R., Sharma P., Paramasivam P., AĞBULUT Ü.
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- XI. **Assessment of reactive-control compression ignition engine performance and emissions using spirulina microalgae biodiesel in conjunction with methanol as low-reactive fuel**
Munimathan A., Rajendran S., AĞBULUT Ü.
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- XII. **Enhancing performance, and combustion efficiency, and reducing tailpipe emissions of an engine fuelled with hydrogen-enriched diesel and ethanol blends at varying CRs using RSM**
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- XIII. **Comparative analysis of machine learning and artificial intelligence models for optimizing mixed refrigerant characteristics in a hydrogen pre-cooling storage system**
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- XIV. **Maximizing the hydrogen content for methanol steam reforming processes by using the novel pareto-based multi-objective evolutionary algorithms**
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- XV. **Impacts of novel calotropis gigantea seed biodiesel usage as a fuel substitute along with various metal-oxide nanoparticles on the DIC engine characteristics**
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- XVI. **Detailed experimental investigation and optimization of oxygenated diglyme–diesel–n-pentanol ternary blends on compression ignition engine behaviors**
Babu J. P. R., Sivarajan C., Prasad B. D., Rajak U., Şen Y., AĞBULUT Ü.
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- XVII. **Alcohol fuels in SI engines: a comprehensive state-of-the-art review on combustion, performance, and environmental impacts**
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- XVIII. **Co-pyrolysis of furniture wood with mixed plastics and waste tyres: assessment of synergistic effect on biofuel yield and product characterization under different blend ratio**
Kumar I., Tirlangi S., Kathiresan K., Sharma V., Madhu P., Sathish T., AĞBULUT Ü., Murugan P.
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- XIX. **Artificial intelligence-based forecasting of dual-fuel mode CI engine behaviors powered with the hydrogen-diesel blends**
Reddy K. J., Prasad Rao G. A., Reddy R. M., AĞBULUT Ü.
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- XX. **Energy, exergy, environment and economic (4E) analysis of PV/T module assisted vapor compression refrigeration system: An experimental study**
Yıldız G., Gürel A. E., Katırcioğlu F., AĞBULUT Ü.
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- XXI. **Energy, exergy, environmental, and economic (4E) analyses of the usability of various nano-sized particles added lubricant in a heat pump system**
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- XXII. **Combustion, environmental, and efficiency assessment of multi-walled carbon nanotubes enriched biodiesel-**

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- XXIII. **Enhancing diesel engine performance, combustion, and emissions reductions under the effect of cerium oxide nanoparticles with hydrogen addition to biodiesel fuel**
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- XXIV. **From nickel–metal hydride batteries to advanced engines: A comprehensive review of hydrogen's role in the future energy landscape**
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- XXV. **Role of hydrogen-enrichment for in-direct diesel engine behaviours fuelled with the diesel-waste biodiesel blends**
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- XXVI. **K-means clustering optimization of various quantum dots and nanoparticles-added biofuels for engine performance, emission, vibration, and noise characteristics**
Khan F., Khan O., Parvez M., Ahmad S., Yahya Z., Alhodaib A., Kumar Yadav A., Ağbulut Ü.
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- XXVII. **Enhancing thermal efficiency in flat plate solar collectors through internal barrier optimization**
Dhairiyasamy R., Rajendran S., Khan S. A., Aziz Alahmadi A., Alwetaishi M., AĞBULUT Ü.
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- XXVIII. **A detailed thermohydraulic performance assessment of surface-modified silver nanofluids in turbulent convective heat transfer**
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- XXIX. **Exploring the performance of biodiesel-hydrogen blends with diverse nanoparticles in diesel engine: A hybrid machine learning K-means clustering approach with weighted performance metrics**
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- XXX. **Evaluation of RCCI engine combustion, performance, and emissions using spirulina micro-algae biodiesel with methane-enriched hydrogen**
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- XXXI. **Improved performance evaluation of a dual passage solar thermal collector using staggered turbulators**
Thakur A., Kumar R., Lee D., Kumar S., Kumar P., Asif M., AĞBULUT Ü.
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- XXXII. **Experimental investigation of ternary blends on performance, and emission behaviors of a modified low-heat rejection CI engine**
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- XXXIII. **Waste to fuel: A detailed combustion, performance, and emission characteristics of a CI engine fuelled with sustainable fish waste management augmentation with alcohols and nanoparticles**
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- XXXIV. **A comprehensive combustion, performance, and environmental analyses of algae biofuel, hydrogen gas, and nano-sized particles (liquid-gas-solid mix) in agricultural CRDI engines**
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- XXXV. **Investigation on the combined effect of the hydrogen premixing and nanoparticle mixed pyrolysed oil of transformer oil waste in engine characteristics**
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- XXXVI. **Computational and experimental investigations on liquid-based battery thermal management systems for electric vehicle applications under various discharge rates with different flow speeds**

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- XXXVII. **Waste-to-energy power plants: Multi-objective analysis and optimization of landfill heat and methane gas by recirculation of leachate**
Khan O., Parvez M., Yahya Z., Alhodaib A., Yadav A. K., Hoang A. T., AĞBULUT Ü.
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- XXXVIII. **Water splitting via electrocatalysis and photocatalysis: Engineering stumbling blocks and advancements**
Singh D., Kumawat S., Saini A., Sonia P., Goyal A., Sravanthi G., Saxena K. K., Shaik S., Raja V., Saleel C. A., et al.
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- XXXIX. **Impact of synthesizing surfactant-modified catalytic ceria nanoparticles on the performance and environmental behaviors of coconut oil/diesel-fueled CI engine: An optimization attempt**
George Roy R., AĞBULUT Ü., Preno Koshy C., Alex Y., Sailesh K., Afghan Khan S., Jilte R., Linul E., Asif M.
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- XL. **Investigation of numerical phase transition of nano-enhanced SiC/paraffin wax PCM in solar-assisted water desalination system**
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- XLI. **Optimizing soybean biofuel blends for sustainable urban medium-duty commercial vehicles in India: an AI-driven approach**
Rajak U., Chaurasiya P. K., Verma T. N., Dasore A., AĞBULUT Ü., Meshram K., Saleel C., Saboor S., CÜCE E., Mian Z.
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- XLII. **Artificial intelligence based-prediction of energy efficiency and tailpipe emissions of soybean methyl ester fuelled CI engine under variable compression ratios**
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- XLIII. **Exergetic and exergoeconomic assessments of a diesel engine fuelled with waste chicken fat biodiesel-diesel blends**
Gad M., Uysal C., El-Shafay A., AĞBULUT Ü.
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- XLIV. **Advances in hydrogen storage with metal hydrides: Mechanisms, materials, and challenges**
Nivedhitha K., Beena T., Banapurmath N., Umarfarooq M., Ramasamy V., Soudagar M. E. M., AĞBULUT Ü.
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- XLV. **A Taguchi-based hybrid multi-criteria decision-making approach for optimization of performance characteristics of diesel engine fuelled with blends of biodiesel-diesel and cerium oxide nano-additive**
Khanam S., Khan O., Ahmad S., Sherwani A. F., Khan Z. A., Yadav A. K., AĞBULUT Ü.
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- XLVI. **Improvement of worsened diesel and waste biodiesel fuelled-engine characteristics with hydrogen enrichment: A deep discussion on combustion, performance, and emission analyses**
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- XLVII. **Synergistic effects of hybrid nanoparticles along with conventional fuel on engine performance, combustion, and environmental characteristics**
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- XLVIII. **Machine learning for the management of biochar yield and properties of biomass sources for sustainable energy**
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- XLIX. **Different energy storage techniques: recent advancements, applications, limitations, and efficient utilization of sustainable energy**
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- L. **A comprehensive review of Trinitor components: A sustainable waste heat recovery polygenerative system for diesel vehicles**
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- LI. **Production of waste soybean oil biodiesel with various catalysts, and the catalyst role on the CI engine behaviors**
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- LII. **Analysis of bubble departure and lift-off boiling model using computational intelligence techniques and hybrid algorithms**
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- LIII. **Parametric optimization of an impingement jet solar air heater for active green heating in buildings using hybrid CRITIC-COPRAS approach**
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- LIV. **A comprehensive analysis of the emerging modern trends in research on photovoltaic systems and desalination in the era of artificial intelligence and machine learning**
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- LV. **Waste to energy: An experimental study on hydrogen production from food waste gasification**
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- LVI. **Recent advances in hydrogen production from biomass waste with a focus on pyrolysis and gasification**
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- LVII. **Optimization of the pilot fuel injection and engine load for an algae biodiesel - hydrogen run dual fuel diesel engine using response surface methodology**
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- LVIII. **Exergetic and exergoeconomic assessments of a diesel engine operating on dual-fuel mode with biogas and diesel fuel containing boron nitride nanoparticles**
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- LIX. **A hybrid RSM-GA-PSO approach on optimization of process intensification of linseed biodiesel synthesis using an ultrasonic reactor: Enhancing biodiesel properties and engine characteristics with ternary fuel blends**
Ahmad A., Yadav A. K., Singh A., Singh D. K., Ağbulut Ü. Energy, vol.288, 2024 (SCI-Expanded)
- LX. **Environmental, combustion, and performance investigation of low viscous biofuel in port fuel injection spark-ignition engine**
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- LXI. **Experimental and numerical analysis of the thermal performance of pebble solar thermal collector**
Naik N. C. K., Priya R. K., Ağbulut Ü., Gürel A. E., Shaik S., Alzaed A. N., Alwetaishi M., Alahmadi A. A. Heliyon, vol.10, no.2, 2024 (SCI-Expanded)
- LXII. **Performance enhancement and emission control through adjustment of operating parameters of a biogas-biodiesel dual fuel diesel engine: An experimental and statistical study with biogas as a hydrogen carrier**
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- LXIII. **Impact of produced oxyhydrogen gas (HHO) from dry cell electrolyzer on spark ignition engine characteristics**
Gad M., El-Shafay A., Ağbulut Ü., Panchal H. International Journal of Hydrogen Energy, vol.49, pp.553-563, 2024 (SCI-Expanded)
- LXIV. **Production of HHO gas in the water-electrolysis unit and the influences of its introduction to CI engine along with diesel-biodiesel blends at varying injection pressures**
Babu J., Kumar K. S., Kumar R. R., Ağbulut Ü., Razak A., Thakur D., Sundara V., Asif M. International Journal of Hydrogen Energy, vol.52, pp.865-885, 2024 (SCI-Expanded)
- LXV. **Hydrogen and dual fuel mode performing in engine with different combustion chamber shapes: Modelling and**

- analysis using RSM-ANN technique**
Khandal S., Razak A., Veza I., Afzal A., Alwetaishi M., Shaik S., Ağbulut Ü., Rashedi A.
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- LXVI. **Waste bull bone based reusable and biodegradable heterogeneous catalyst for alternate fuel production from WCO, and investigation of its usability as fuel substitute**
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- LXVII. **Improving the prediction of biochar production from various biomass sources through the implementation of explainable machine learning approaches**
Nguyen V. G., Sharma P., Ağbulut Ü., Le H. S., Cao D. N., Dzida M., Osman S. M., Le H. C., Tran V. D.
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- LXVIII. **Precise prognostics of biochar yield from various biomass sources by Bayesian approach with supervised machine learning and ensemble methods**
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- LXIX. **Green agro storage and electric vehicle integrated nano grid for rural livelihood improvement: a detailed review and case analysis**
Nadimuthu L. P. R., Victor K., Karthikeyan P., Premkumar I. J. I., Naavaneethakrishnan G., Palanisamy R., Saleel C. A., AĞBULUT Ü.
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- LXX. **Experimental investigation of the thermal efficiency of a new cavity receiver design for concentrator solar technology**
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- LXXI. **Use of modern algorithms for multi-parameter optimization and intelligent modelling of sustainable battery performance**
Afzal A., Buradi A., Jilte R., Sundara V., Shaik S., Ağbulut Ü., Alwetaishi M., Saleel C. A.
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- LXXII. **Technological solutions for boosting hydrogen role in decarbonization strategies and net-zero goals of world shipping: Challenges and perspectives**
Hoang A. T., Pandey A., Martinez De Osés F. J., Chen W., Said Z., Ng K. H., Ağbulut Ü., Tarekko W., Ölçer A. I., Nguyen X. P.
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- LXXIII. **Performance analysis of biofuel-ethanol blends in diesel engine and its validation with computational fluid dynamics**
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- LXXIV. **Influences of various metal oxide-based nanosized particles-added algae biodiesel on engine characteristics**
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- LXXV. **Energy recovery from waste animal fats and detailed testing on combustion, performance, and emission analysis of IC engine fueled with their blends enriched with metal oxide nanoparticles**
Sathish T., Ağbulut Ü., Kumari V., Rathinasabapathi G., Karthikumar K., Rama Jyothi N., Ratna Kandavalli S., Vijay Muni T., Saravanan R.
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- LXXVI. **PCM embedded square channel receiver for effective operation of Net Zero Emission/Energy PDC building heating system**
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- LXXVII. **Battery thermal management of a novel helical channeled cylindrical Li-ion battery with nanofluid and hybrid nanoparticle-enhanced phase change material**
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- LXXVIII. **Sustainable nano-added biofuel production from borassus flabellifer oil for conventional internal combustion engines**
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- LXXIX. **Single- and combined-source typical metrological year solar energy data modelling**

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- LXXX. **Investigations on biomass gasification derived producer gas and algal biodiesel to power a dual-fuel engines: Application of neural networks optimized with Bayesian approach and K-cross fold**
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