Collection	Title
Aerospace Engineering	A comprehensive review of aerodynamic performance evaluation for aircraft wings and engines: insights into experimental, numerical, and theoretical approaches
Aerospace Engineering	A Review of Modeling and Control Techniques for Unmanned Aerial Vehicles
Aerospace Engineering	A review of liquid hydrogen aircraft and propulsion technologies
Aerospace Engineering	Hydrogen-powered aircraft: Fundamental concepts, key technologies, and environmental impacts
Aerospace Engineering	Review of the hybrid gas - electric aircraft propulsion systems versus alternative systems

Aerospace Engineering	Review of the Recent Developments About the Hybrid Propelled Aircraft
Aerospace Engineering	Challenges and opportunities in power electronics design for all- and hybrid-electric aircraft: a qualitative review and outlook
Aerospace Engineering	A comprehensive review of energy sources for unmanned aerial vehicles, their shortfalls and opportunities for improvements
Aerospace Engineering	A Review of Quadrotor Unmanned Aerial Vehicles: Applications, Architectural Design and Control Algorithms
Aerospace Engineering	Recent Advances in Unmanned Aerial Vehicles: A Review
Electrical Engineering	A comprehensive review of recent developments in smart grid through renewable energy resources integration

Electrical Engineering	An in-depth survey of latest progress in smart grids: paving the way for a sustainable future through renewable energy resources
Electrical Engineering	A comprehensive review of microgrid challenges in architectures, mitigation approaches, and future directions
Electrical Engineering	Reviewing the frontier: modeling and energy management strategies for sustainable 100% renewable microgrids
Electrical Engineering	Exploring the Intersection of Artificial Intelligence and Microgrids in Developing Economies: A Review of Practical Applications
Electrical Engineering	Energy management system in networked microgrids: an overview
Electrical Engineering	A review of electric vehicle technology: Architectures, battery technology and its management system, relevant standards, application of artificial intelligence, cyber security, and interoperability challenges

Electrical Engineering	Advancements and Challenges in Microgrid Technology: A Comprehensive Review of Control Strategies, Emerging Technologies, and Future Directions
Electrical Engineering	Review on microgrids design and monitoring approaches for sustainable green energy networks
Electrical Engineering	A review of control strategies for optimized microgrid operations
Petroleum Engineering	CO2 flooding technology for enhanced oil recovery in tight oil reservoirs: A review
Petroleum Engineering	Recent aspects of chemical enhanced oil recovery
Petroleum Engineering	Comprehensive review of enhanced oil recovery strategies for heavy oil and bitumen reservoirs in various countries: Global perspectives, challenges, and solutions

Petroleum Engineering	Recent Advances in Enhanced Oil Recovery with Low-Salinity Waterflooding and Its Hybrid Methods in Carbonate Reservoirs
Petroleum Engineering	A systematic review of CO2-enhanced oil recovery mechanisms, technologies, and future prospects
Petroleum Engineering	An in-depth insight into microbial-enhanced oil recovery: a systematic review and potential application in the Middle East and Southern Iraqi fields
Petroleum Engineering	Application of CFD technique to simulate enhanced oil recovery processes: current status and future opportunities
Petroleum Engineering	Hole Cleaning during Drilling Oil and Gas Wells: A Review for Hole-Cleaning Chemistry and Engineering Parameters
Petroleum Engineering	A Survey on the Shortcomings of the Current Rate of Penetration Predictive Models in Petroleum Engineering

Petroleum Engineering	The Prospect of Electrical Enhanced Oil Recovery for Heavy Oil: A Review

Authors	Item Type
J. K. Ajay Kumar; K. Sudheendra Prabhu; A. S. Veerendra; Y. B. Sudhir Shastry; G. Srinivas	Review Article
Elisabeth Andarge Gedefaw; Nardos Belay Abera; Chala Merga Abdissa	Review Article
Saurav Tiwari; Michael J. Pekris; John J. Doherty	Review Article
Eytan J. Adler; Joaquim R. R. A. Martins	Review Article
Agata Kuśmierek; Cezary Galiński; Wieńczysław Stalewski	Review Article

L. M. Cardone; G. Petrone; S. De Rosa; F. Franco; C. S. Greco	Review Article
Lukas Radomsky; Robert Keilmann; Dirk Ferch; Regine Mallwitz	Review Article
Ashleigh Townsend; Immanuel N. Jiya; Christiaan Martinson; Dmitri Bessarabov; Rupert Gouws	Review Article
Moad Idrissi; Mohammad Salami; Fawaz Annaz	Review Article
Faiyaz Ahmed; J. C. Mohanta; Anupam Keshari; Pankaj Singh Yadav	Review Article
Chibuike Peter Ohanu; Salihu Ahmed Rufai; Ugbe Christiana Oluchi	Review Article

Venkatraman Ethirajan; S. P. Mangaiyarkarasi	Review Article
S. Punitha; N. P. Subramaniam; P. Ajay D Vimal Raj	Review Article
Rasha Elazab; Ahmed Abo Dahab; Maged Abo Adma; Hany Abdo Hassan	Review Article
William Bodewes; Julian de Hoog; Elizabeth L. Ratnam; Saman Halgamuge	Review Article
Jhojan A. Rodriguez-Gil; Eduardo Mojica-Nava; Daniel Vargas-Medina; Miguel F. Arevalo-Castiblanco; Camilo A. Cortes; Sergio Rivera; John Cortes-Romero	Review Article
Vincent M. Macharia; Vijay K. Garg	Review Article

Ark Dev; Vineet Kumar; Gaurav Khare; Jayant Giri; Mohammad Amir; Furkan Ahmad; Prince Jain; Sumant Anand	Review Article
Ijaz Ahmed; Muhammad Rehan; Abdul Basit; Hasnain Ahmad; Waqas Ahmed; Nasim Ullah; Marian Piecha; Vojtech Blazek; Lukas Prokop	Review Article
Shaibu Ali Juma; Sarah Paul Ayeng'o; Cuthbert Z. M. Kimambo	Review Article
Wanfen Pu; Junshen Kuang; Fan Yang; Bowen Li; Jintao Li; Aoyu Wang	Review Article
Roland Nagy; Máté Hartyányi; Rebeka Bejczi; László Bartha; Sándor Puskás	Review Article
Mina Seidy-Esfahlan; Seyyed Alireza Tabatabaei-Nezhad; Elnaz Khodapanah	Review Article

Ronald Marquez	Review Article
Rufaida T. Ibrahim; Watheq J. Al-Mudhafar; Dahlia A. Alobaidi; Shadfar Davoodi	Review Article
Ahmed N. Al-Dujaili; Zahraa Ayad Mahdi; Maaly S. Asad; Mohammed Thamer; Arshad Noori Al-Dujaili; Mays Yaseen Taher	Review Article
Arezou Jafari; Mohammadreza Hasani; Mostafa Hosseini; Reza Gharibshahi	Review Article
Mohammed Al-Rubaii; Mohammed Al-Shargabi; Dhafer Al-Shehri	Review Article
Mitra Khalilidermani; Dariusz Knez	Review Article

Muhammad Khairul Afdhol; Tomi Erfando; Fiki Hidayat; Review Article
Muhammad Yudatama Hasibuan; Shania Regina

Journal / Conference Name	Publisher	Publication Date	Volume
Aerospace Systems	Springer Nature	05/22/2025	2025
Engineering Reports	Wiley	05/29/2025	2025
International Journal of Hydrogen Energy	Elsevier	02/01/2024	2024
Progress in Aerospace Sciences	Elsevier	08/01/2023	2023
Progress in Aerospace Sciences	Elsevier	08/01/2023	2023

Aerotecnica Missili & Spazio	Springer Nature	09/28/2023	2024
CEAS Aeronautical Journal	Springer Nature	09/30/2024	2024
Heliyon	Elsevier	11/05/2020	2020
Journal of Intelligent & Robotic Systems	Springer Nature	01/22/2022	2022
Arabian Journal for Science and Engineering	Springer Nature	04/25/2022	2022
Heliyon	Elsevier	02/15/2024	2024

Journal of Electrical Systems and Information Technology	Springer Nature	03/25/2025	2025
Journal of Electrical Systems and Information Technology	Springer Nature	12/17/2024	2024
Discover Applied Sciences	Springer Nature	03/26/2024	2024
Current Sustainable/Renewable Energy Reports	Springer Nature	03/26/2024	2024
Energy Systems	Springer Nature	07/04/2024	2026
IET Electrical Systems in Transportation	Wiley	2023	2023

Energy Science & Engineering	Wiley	02/21/2025	2025
Scientific Reports	Nature Portfolio	12/08/2023	2023
IET Renewable Power Generation	Wiley	07/19/2024	2024
Energy Geoscience	Elsevier	06/01/2026	2026
Chemical Papers	Springer Nature	02/20/2025	2025
Heliyon	Elsevier	09/11/2024	2024

Energy & Fuels	American Chemical Society	04/08/2025	2025
Journal of Petroleum Exploration and Production Technology	Springer Nature	04/04/2026	2026
Journal of Petroleum Exploration and Production Technology	Springer Nature	07/11/2026	2026
Petroleum Science	Springer Nature	09/21/2019	2020
Advances in Materials Science and Engineering	Wiley	12/07/2023	2023
Energies	MDPI	05/24/2023	2023

Journal of Earth Energy Engineering Universitas Islam Riau 07/14/2020 2020

Issue	Pages / Article Number	DOI	Language
N/A	107163	10.1007/s42401-025-00366-w	English
7	e70215	10.1002/eng2.70215	English
57	1174-1196	10.1016/j.ijhydene.2023.12.263	English
141	100922	10.1016/j.paerosci.2023.100922	English
141	100925	10.1016/j.paerosci.2023.100925	English

103	17-37	10.1007/s42496-023-00173-6	English
15	751-764	10.1007/s13272-024-00770-6	English
6	e05285	10.1016/j.heliyon.2020.e05285	English
104	Article 22	10.1007/s10846-021-01527-7	English
47	7963-7984	10.1007/s13369-022-06738-0	English
10	e25705	10.1016/j.heliyon.2024.e25705	English

12	Article 9	10.1186/s43067-025-00195-z	English
11	Article 60	10.1186/s43067-024-00188-4	English
6	Article 168	10.1007/s42452-024-05820-6	English
11	10-23	10.1007/s40518-024-00233-w	English
17	315-346	10.1007/s12667-024-00676-6	English
N/A	N/A	10.1049/els2.12083	English

13	2112-2134	10.1002/ese3.2095	English
13	Article 21663	10.1038/s41598-023-48985-7	English
N/A	N/A	10.1049/rpg2.13056	English
7	100545	10.1016/j.engeos.2026.100545	English
79	2695-2716	10.1007/s11696-025-03943-7	English
10	e37826	10.1016/j.heliyon.2024.e37826	English

39	8769-8799	10.1021/acs.energyfuels.4c06023	English
16	Article 34	10.1007/s13202-026-02134-8	English
16	Article 61	10.1007/s13202-026-02179-9	English
17	434-456	10.1007/s12182-019-00363-7	English
2023	6688500	10.1155/2023/6688500	English
16	4289	10.3390/en16114289	English

8	73-94	10.25299/jeee.2019.4874	English

Access Type	Embargo Lift Date
Open Access	
Open Access	
Open Access	
Open Access	
Open Access	

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Open Access

Abstract (metadata-ready paraphrase)

This review examines aerodynamic performance evaluation for aircraft wings and engines, covering experimental wind-tunnel methods, numerical approaches such as RANS and DNS, inlet and nacelle aerodynamics, flow visualization, and aerodynamic optimization.

This review surveys UAV modeling and control techniques, including Newton-Euler and quaternion models and control approaches such as sliding-mode, H-infinity, model predictive, observer-based, and neural-network control.

This review surveys hydrogen aircraft and enabling technologies, assessing fuel-cell and hydrogen-turbine propulsion, liquid-hydrogen storage, thermal management, safety, certification, infrastructure, and the feasibility of hydrogen-powered aviation.

This paper reviews the fundamental physics, technologies, aircraft-design implications, certification issues, costs, and environmental impacts of hydrogen-powered aircraft, including fuel cells, hydrogen turbofans, and liquid-hydrogen storage.

This review compares hybrid gas-electric aircraft propulsion with alternative propulsion concepts, focusing on fuel consumption, emissions, batteries, electric motors, power management, thermal management, and technology challenges.

This review surveys recent hybrid-electric, all-electric, and turbo-electric aircraft propulsion developments, including architectures, technological requirements, research programs, prototypes, demonstrators, and sustainability objectives.

This review examines power-electronics requirements for all-electric and hybrid-electric aircraft, including electric propulsion, multilevel inverters, cryogenic power electronics, reliability, thermal constraints, and system-level design challenges.

This review compares UAV energy sources including batteries, fuel cells, solar power, and hybrid systems, considering weight, charging, energy density, power density, endurance, payload, and opportunities for improved UAV power systems.

This review categorizes developments in quadrotor UAVs, covering applications, mechanical architectures, dynamic modeling, control laws, navigation, sensing, and emerging research directions.

This review surveys recent UAV developments in structure, flight mechanisms, sensing and vision, navigation, path planning, intelligent behavior, and applications including inspection, photography, search and rescue, and infrastructure monitoring.

This review examines smart-grid development and renewable-energy integration, including decentralized generation, energy management, electric vehicles, smart homes, virtual power plants, grid inertia, and challenges in modern power networks.

This survey reviews recent smart-grid progress with emphasis on renewable energy integration, intelligent electricity networks, grid modernization, distributed generation, energy management, and sustainability challenges.

This review examines microgrid architectures, control and mitigation methods, inverter topologies, communication technologies, grid-connected and islanded operation, and future research directions.

This review examines modeling and energy-management strategies for 100% renewable microgrids, including uncertainty modeling, renewable generation, storage, optimization, and sustainable operation.

This review assesses practical AI applications for microgrid electrification in developing economies and uses a social-technical-economic-political framework to examine barriers and opportunities for AI-enabled energy systems.

This overview examines energy-management systems for networked microgrids, including coordinated operation, optimization, distributed control, energy resources, demand management, and grid interaction.

This review covers EV architectures, battery technologies and management systems, standards, artificial intelligence, cybersecurity, charging interoperability, and major challenges affecting electric-vehicle deployment.

This review examines microgrid control strategies and emerging technologies, covering distributed energy resources, storage, loads, advanced control, resilience, reliability, and future directions.

This review covers microgrid design and monitoring for sustainable energy networks, including grid-connected and islanded operation, distributed resources, storage, monitoring, control, and power-quality considerations.

This review evaluates control strategies used to optimize microgrid operation, including hierarchical control, distributed control, energy management, renewable integration, stability, and coordinated operation.

This review examines CO2 flooding for enhanced oil recovery in tight oil reservoirs, including viscosity reduction, oil swelling, miscibility, wettability alteration, CO2 channeling, foam flooding, and gravity-assisted approaches.

This review surveys chemical enhanced oil recovery for mature fields, discussing surfactants, polymers, alkaline systems, formulations, displacement mechanisms, field constraints, and recent research directions.

This review evaluates enhanced-oil-recovery methods for heavy-oil and bitumen reservoirs, comparing reservoir properties, production methods, country-specific practices, challenges, and potential solutions.

This review examines low-salinity waterflooding and hybrid methods for enhanced oil recovery in carbonate reservoirs, focusing on wettability alteration, brine chemistry, mechanisms, experimental findings, and field applicability.

This systematic review examines CO2-enhanced oil recovery mechanisms and technologies, including miscible and immiscible displacement, injection strategies, storage interactions, reservoir conditions, and future research needs.

This systematic review examines microbial enhanced oil recovery, including microbial mechanisms, laboratory and field evidence, reservoir screening conditions, and potential application to Middle Eastern and Iraqi oilfields.

This review examines computational-fluid-dynamics applications for simulating enhanced oil recovery, including multiphase flow, displacement processes, chemical and thermal EOR, modeling challenges, and future opportunities.

This review examines hole cleaning during oil and gas drilling, focusing on drilling-fluid chemistry, flow conditions, cuttings transport, rheology, hydraulics, and engineering parameters affecting wellbore cleanliness.

This review evaluates rate-of-penetration predictive models in petroleum engineering, identifies limitations in existing approaches, and discusses data, modeling, drilling-parameter, and generalization challenges.

This review examines electrical heating for heavy-oil recovery, covering electrical EOR methods, viscosity reduction, heating mechanisms, energy efficiency, historical approaches, and future prospects.

Keywords

aircraft aerodynamics; wing aerodynamics; engine aerodynamics; computational fluid dynamics; wind tunnel testing; supersonic inlet; hypersonic inlet; nacelle; aerodynamic optimization

unmanned aerial vehicles; UAV modeling; UAV control; nonlinear dynamics; model predictive control; sliding mode control; neural networks; autonomous flight

net zero; sustainable aviation; aircraft propulsion; fuel cell; gas turbine; hydrogen; liquid hydrogen; cryogenic storage tank; fuel system; thermal management; safety; certification

hydrogen-powered aircraft; civil aviation; hydrogen propulsion; fuel cells; hydrogen turbofan; liquid hydrogen; aircraft design; environmental impact

aircraft propulsion system; hybrid gas-electric propulsion; electric propulsion; alternative propulsion; batteries; power management; aviation emissions

hybrid propulsion; electric aircraft; turbo-electric propulsion; aircraft electrification; sustainable aviation; propulsion architecture

electric propulsion; all-electric aircraft; power electronics; cryogenic power electronics; multilevel inverters; reliability

aerospace engineering; electrical engineering; energy; electric power transmission; fuel cell; energy storage technology; hydrogen energy; lithium-polymer; super-capacitor; UAV

UAV; quadrotor; review; control laws; dynamic modelling; unmanned aerial vehicles; flight control

unmanned aerial vehicles; UAV; drones; aerial robots; navigation; path planning; sensing; computer vision; intelligent behavior

smart grid; renewable energy sources; smart homes; energy management system; electric vehicles; virtual power plants

smart grid; renewable energy; power systems; distributed generation; energy management; sustainable energy; grid modernization

microgrid; smart grid; MG/SG infrastructure; control methodologies; inverter topologies; communication technologies

100% renewable energy; microgrid; energy management; uncertainty modelling; renewable generation; energy storage; optimization

microgrids; artificial intelligence; electrification; developing economies; energy access; intelligent energy systems

networked microgrids; energy management system; distributed energy resources; optimization; distributed control; demand management

electric vehicles; battery technology; battery management system; artificial intelligence; cybersecurity; interoperability; EV standards

microgrid; control strategies; distributed energy resources; energy storage; power systems; resilience; reliability

microgrids; sustainable energy; distributed generation; energy storage; monitoring; control; smart grids; power quality

microgrid control; energy management; renewable energy; distributed control; hierarchical control; power system stability

tight oil; CO2; mechanism; composite flooding; enhanced oil recovery

enhanced oil recovery; chemical EOR; surfactants; polymers; alkaline flooding; mature oil fields

enhanced oil recovery; heavy oil; bitumen; thermal recovery; reservoir properties; production methods

enhanced oil recovery; low-salinity waterflooding; carbonate reservoirs; wettability alteration; hybrid EOR; brine chemistry

CO2-EOR; enhanced oil recovery; carbon dioxide; miscible flooding; immiscible flooding; reservoir engineering; carbon storage

microbial enhanced oil recovery; MEOR; reservoir screening; microorganisms; oil mobilization; Iraqi oilfields

computational fluid dynamics; enhanced oil recovery; multiphase flow; reservoir simulation; chemical EOR; thermal EOR

hole cleaning; drilling; cuttings transport; drilling fluids; rheology; hydraulics; oil and gas wells

rate of penetration; ROP; drilling; predictive models; petroleum engineering; machine learning; drilling parameters

electrical heating; heavy oil; viscosity; energy efficiency; enhanced oil recovery; EOR

Authors (repeatable field value)

J. K. Ajay Kumar; K. Sudheendra Prabhu; A. S. Veerendra; Y. B. Sudhir Shastry; G. Srinivas

Elisabeth Andarge Gedefaw; Nardos Belay Abera; Chala Merga Abdissa

Saurav Tiwari; Michael J. Pekris; John J. Doherty

Eytan J. Adler; Joaquim R. R. A. Martins

Agata Kuśmierek; Cezary Galiński; Wieńczysław Stalewski

L. M. Cardone; G. Petrone; S. De Rosa; F. Franco; C. S. Greco

Lukas Radomsky; Robert Keilmann; Dirk Ferch; Regine Mallwitz

Ashleigh Townsend; Immanuel N. Jiya; Christiaan Martinson; Dmitri Bessarabov; Rupert Gouws

Moad Idrissi; Mohammad Salami; Fawaz Annaz

Faiyaz Ahmed; J. C. Mohanta; Anupam Keshari; Pankaj Singh Yadav

Chibuike Peter Ohanu; Salihu Ahmed Rufai; Ugbe Christiana Oluchi

Venkatraman Ethirajan; S. P. Mangaiyarkarasi

S. Punitha; N. P. Subramaniam; P. Ajay D Vimal Raj

Rasha Elazab; Ahmed Abo Dahab; Maged Abo Adma;
Hany Abdo Hassan

William Bodewes; Julian de Hoog; Elizabeth L. Ratnam;
Saman Halgamuge

Jhojan A. Rodriguez-Gil; Eduardo Mojica-Nava; Daniel
Vargas-Medina; Miguel F. Arevalo-Castiblanco; Camilo
A. Cortes; Sergio Rivera; John Cortes-Romero

Vincent M. Macharia; Vijay K. Garg

Ark Dev; Vineet Kumar; Gaurav Khare; Jayant Giri; Mohammad Amir; Furkan Ahmad; Prince Jain; Sumant Anand

Ijaz Ahmed; Muhammad Rehan; Abdul Basit; Hasnain Ahmad; Waqas Ahmed; Nasim Ullah; Marian Piecha; Vojtech Blazek; Lukas Prokop

Shaibu Ali Juma; Sarah Paul Ayeng'o; Cuthbert Z. M. Kimambo

Wanfen Pu; Junshen Kuang; Fan Yang; Bowen Li; Jintao Li; Aoyu Wang

Roland Nagy; Máté Hartyányi; Rebeka Bejczi; László Bartha; Sándor Puskás

Mina Seidy-Esfahlan; Seyyed Alireza Tabatabaei-Nezhad; Elnaz Khodapanah

Ronald Marquez

Rufaida T. Ibrahim; Watheq J. Al-Mudhafar; Dahlia A. Alobaidi; Shadfar Davoodi

Ahmed N. Al-Dujaili; Zahraa Ayad Mahdi; Maaly S. Asad; Mohammed Thamer; Arshad Noori Al-Dujaili; Mays Yaseen Taher

Arezou Jafari; Mohammadreza Hasani; Mostafa Hosseini; Reza Gharibshahi

Mohammed Al-Rubaii; Mohammed Al-Shargabi; Dhafer Al-Shehri

Mitra Khalilidermani; Dariusz Knez

Muhammad Khairul Afdhol; Tomi Erfando; Fiki Hidayat;
Muhammad Yudatama Hasibuan; Shania Regina

Author Affiliations (repeatable field value)

J. K. Ajay Kumar — Manipal Academy of Higher Education, Manipal Institute of Technology, Manipal, India; K. Sudheendra Prabhu — Manipal Academy of Higher Education, Manipal Institute of Technology, Manipal, India; A. S. Veerendra — Manipal Academy of Higher Education, Manipal Institute of Technology, Manipal, India; Y. B. Sudhir Shastry — Department of Aerospace Engineering, Jain University, Bangalore, India; G. Srinivas — Manipal Academy of Higher Education, Manipal Institute of Technology, Manipal, India.

Elisabeth Andarge Gedefaw — School of Electrical and Computer Engineering, Addis Ababa University, Addis Ababa, Ethiopia; Nardos Belay Abera — School of Electrical and Computer Engineering, Addis Ababa University, Addis Ababa, Ethiopia; Chala Merga Abdissa — School of Electrical and Computer Engineering, Addis Ababa University, Addis Ababa, Ethiopia.

Saurav Tiwari; Michael J. Pekris; John J. Doherty — affiliations should be copied from the publisher PDF/article metadata before submission.

Eytan J. Adler; Joaquim R. R. A. Martins — Department of Aerospace Engineering, University of Michigan, Ann Arbor, United States.

Agata Kuśmierek — Warsaw University of Technology, Poland; Cezary Galiński — Warsaw University of Technology, Poland; Wieńczysław Stalewski — Łukasiewicz Research Network – Institute of Aviation, Poland.

L. M. Cardone; G. Petrone; S. De Rosa; F. Franco; C. S. Greco — Department of Industrial Engineering, Università di Napoli Federico II, Naples, Italy.

Lukas Radomsky; Robert Keilmann; Dirk Ferch; Regine Mallwitz — Institute for Electrical Machines, Traction and Drives, Technische Universität Braunschweig, Germany; Robert Keilmann and Regine Mallwitz also — Cluster of Excellence SE2A, Technische Universität Braunschweig, Germany.

Ashleigh Townsend; Rupert Gouws — School of Electrical, Electronic and Computer Engineering, North-West University, South Africa; Immanuel N. Jiya — Department of Engineering and Science, University of Agder, Norway; Christiaan Martinson; Dmitri Bessarabov — HySA Infrastructure Center of Competence, Faculty of Engineering, North-West University, South Africa.

Moad Idrissi; Mohammad Salami; Fawaz Annaz — Faculty of Computing, Engineering and the Built Environment, Birmingham City University, Birmingham, UK.

Faiyaz Ahmed; J. C. Mohanta; Anupam Keshari; Pankaj Singh Yadav — affiliation should be copied from the publisher/PubMed record before submission.

Chibuike Peter Ohanu; Ugbe Christiana Oluchi — Department of Electrical Engineering, Faculty of Engineering, University of Nigeria, Nsukka, Nigeria; Ohanu and Oluchi also — African Centre of Excellence for Sustainable Power and Energy Development, University of Nigeria, Nsukka, Nigeria; Salihu Ahmed Rufai — Department of Electrical Engineering, Faculty of Engineering, University of Nigeria, Nsukka, Nigeria.

Venkatraman Ethirajan — University College of Engineering Villupuram, Tamil Nadu, India; S. P. Mangaiyarkarasi — University College of Engineering Panruti, Tamil Nadu, India.

S. Punitha — Department of Electrical and Electronics Engineering, Sri Venkateshwaraa College of Engineering and Technology, Puducherry, India; N. P. Subramaniam; P. Ajay D Vimal Raj — Department of Electrical and Electronics Engineering, Puducherry Technological University, Puducherry, India.

Rasha Elazab; Ahmed Abo Dahab; Maged Abo Adma; Hany Abdo Hassan — Electrical Engineering Department, Faculty of Engineering, Helwan University, Cairo, Egypt.

William Bodewes; Julian de Hoog; Saman Halgamuge — University of Melbourne, Australia; Elizabeth L. Ratnam — University of Wollongong, Australia. Verify exact department names against the publisher PDF before submission.

Jhojan A. Rodriguez-Gil; Eduardo Mojica-Nava; Daniel Vargas-Medina; Miguel F. Arevalo-Castiblanco; Camilo A. Cortes; Sergio Rivera; John Cortes-Romero — National University of Colombia, Colombia. Verify exact department names against the article PDF.

Vincent M. Macharia; Vijay K. Garg — affiliation should be copied from the publisher PDF before submission.

Ark Dev; Vineet Kumar; Gaurav Khare; Jayant Giri; Mohammad Amir; Furkan Ahmad; Prince Jain; Sumant Anand — affiliation should be copied from the publisher PDF before submission.

Authors and affiliations should be copied from the Scientific Reports article PDF/HTML before submission.

Shaibu Ali Juma; Sarah Paul Ayeng'o; Cuthbert Z. M. Kimambo — affiliation should be copied from the publisher PDF before submission.

Rufaida T. Ibrahim; Dahlia A. Alobaidi — Department of Petroleum Engineering, College of Engineering, University of Baghdad, Baghdad, Iraq; Watheq J. Al-Mudhafar — Basrah Oil Company, Basrah, Iraq; Shadfar Davoodi — School of Earth Sciences and Engineering, Tomsk Polytechnic University, Russia; also Artificial Intelligence Center, Skolkovo Institute of Science and Technology, Moscow, Russia.

Roland Nagy; Máté Hartyányi; Rebeka Bejczi; László Bartha — Department of MOL Hydrocarbon and Coal Processing, University of Pannonia, Veszprém, Hungary; Sándor Puskás — Group-Level Oil Industry Business Development, MOL Plc, Szeged, Hungary.

Mina Seidy-Esfahlan — Faculty of Chemical & Petroleum Engineering, University of Tabriz, Iran; also Faculty of Petroleum and Natural Gas Engineering, Sahand Oil and Gas Research Institute, Sahand University of Technology, Iran; Seyyed Alireza Tabatabaei-Nezhad; Elnaz Khodapanah — Faculty of Petroleum and Natural Gas Engineering, Sahand Oil and Gas Research Institute, Sahand University of Technology, Iran.

Ronald Marquez — Department of Chemical Engineering, University of Girona, Spain; LEPAMAP-PRODIS Research Group, University of Girona; Hongna Ding — Key Laboratory of Enhanced Oil Recovery, Northeast Petroleum University, China; Ramon E. Vera — Department of Forest Biomaterials, North Carolina State University, United States; verify remaining author affiliations from the publisher PDF.

Ahmed N. Al-Dujaili — Petroleum Engineering Department, Amirkabir University of Technology, Iran; Zahraa Ayad Mahdi; Maaly S. Asad; Mohammed Thamer — Petroleum Engineering Department, College of Engineering, University of Kerbala, Iraq; Arshad Noori Al-Dujaili — Department of Biology, Faculty of Science, University of Kufa, Iraq; Mays Yaseen Taher — Missan Oil Company/Iraqi Ministry of Oil; also Petroleum Engineering Department, Al-Manara University, Iraq.

Arezou Jafari; Mohammadreza Hasani; Mostafa Hosseini; Reza Gharibshahi — affiliation should be copied from the article PDF before submission.

Mohammed Al-Rubaii — Department of Petroleum Engineering; Mohammed Al-Shargabi — School of Earth Sciences and Engineering; Dhafer Al-Shehri — Department of Petroleum Engineering. Verify institution names from the article PDF before submission.

Mitra Khalilidermani; Dariusz Knez — affiliation should be copied from the publisher PDF before submission.

Muhammad Khairul Afdhol; Tomi Erfando; Fiki Hidayat; Muhammad Yudatama Hasibuan; Shania Regina — affiliation should be copied from the journal PDF before submission.

See article author affiliations; verify exact department/institution names against the publisher PDF before submission.

Keywords / Subjects

aircraft aerodynamics; wing aerodynamics; engine aerodynamics; computational fluid dynamics; wind tunnel testing; supersonic inlet; hypersonic inlet; nacelle; aerodynamic optimization

unmanned aerial vehicles; UAV modeling; UAV control; nonlinear dynamics; model predictive control; sliding mode control; neural networks; autonomous flight

net zero; sustainable aviation; aircraft propulsion; fuel cell; gas turbine; hydrogen; liquid hydrogen; cryogenic storage tank; fuel system; thermal management; safety; certification

hydrogen-powered aircraft; civil aviation; hydrogen propulsion; fuel cells; hydrogen turbofan; liquid hydrogen; aircraft design; environmental impact

aircraft propulsion system; hybrid gas-electric propulsion; electric propulsion; alternative propulsion; batteries; power management; aviation emissions

hybrid propulsion; electric aircraft; turbo-electric propulsion; aircraft electrification; sustainable aviation; propulsion architecture

electric propulsion; all-electric aircraft; power electronics; cryogenic power electronics; multilevel inverters; reliability

aerospace engineering; electrical engineering; energy; electric power transmission; fuel cell; energy storage technology; hydrogen energy; lithium-polymer; super-capacitor; UAV

UAV; quadrotor; review; control laws; dynamic modelling; unmanned aerial vehicles; flight control

unmanned aerial vehicles; UAV; drones; aerial robots; navigation; path planning; sensing; computer vision; intelligent behavior

smart grid; renewable energy sources; smart homes; energy management system; electric vehicles; virtual power plants

smart grid; renewable energy; power systems; distributed generation; energy management; sustainable energy; grid modernization

microgrid; smart grid; MG/SG infrastructure; control methodologies; inverter topologies; communication technologies

100% renewable energy; microgrid; energy management; uncertainty modelling; renewable generation; energy storage; optimization

microgrids; artificial intelligence; electrification; developing economies; energy access; intelligent energy systems

networked microgrids; energy management system; distributed energy resources; optimization; distributed control; demand management

electric vehicles; battery technology; battery management system; artificial intelligence; cybersecurity; interoperability; EV standards

microgrid; control strategies; distributed energy resources; energy storage; power systems; resilience; reliability

microgrids; sustainable energy; distributed generation; energy storage; monitoring; control; smart grids; power quality

microgrid control; energy management; renewable energy; distributed control; hierarchical control; power system stability

tight oil; CO2; mechanism; composite flooding; enhanced oil recovery

enhanced oil recovery; chemical EOR; surfactants; polymers; alkaline flooding; mature oil fields

enhanced oil recovery; heavy oil; bitumen; thermal recovery; reservoir properties; production methods

enhanced oil recovery; low-salinity waterflooding; carbonate reservoirs; wettability alteration; hybrid EOR; brine chemistry

CO2-EOR; enhanced oil recovery; carbon dioxide; miscible flooding; immiscible flooding; reservoir engineering; carbon storage

microbial enhanced oil recovery; MEOR; reservoir screening; microorganisms; oil mobilization; Iraqi oilfields

computational fluid dynamics; enhanced oil recovery; multiphase flow; reservoir simulation; chemical EOR; thermal EOR

hole cleaning; drilling; cuttings transport; drilling fluids; rheology; hydraulics; oil and gas wells

rate of penetration; ROP; drilling; predictive models; petroleum engineering; machine learning; drilling parameters

electrical heating; heavy oil; viscosity; energy efficiency; enhanced oil recovery; EOR

Rich Keywords (3+)	Rights / License
aircraft aerodynamics; wing aerodynamics; engine aerodynamics; computational fluid dynamics; wind tunnel testing; supersonic inlet; hypersonic inlet; nacelle; aerodynamic optimization	CC BY 4.0
unmanned aerial vehicles; UAV modeling; UAV control; nonlinear dynamics; model predictive control; sliding mode control; neural networks; autonomous flight	CC BY (Wiley Open Access)
net zero; sustainable aviation; aircraft propulsion; fuel cell; gas turbine; hydrogen; liquid hydrogen; cryogenic storage tank; fuel system; thermal management; safety; certification	Open access — verify exact Creative Commons license on publisher page
hydrogen-powered aircraft; civil aviation; hydrogen propulsion; fuel cells; hydrogen turbofan; liquid hydrogen; aircraft design; environmental impact	CC BY 4.0
aircraft propulsion system; hybrid gas-electric propulsion; electric propulsion; alternative propulsion; batteries; power management; aviation emissions	CC BY-NC-ND 4.0

hybrid propulsion; electric aircraft; turbo-electric propulsion; aircraft electrification; sustainable aviation; propulsion architecture	CC BY 4.0
electric propulsion; all-electric aircraft; power electronics; cryogenic power electronics; multilevel inverters; reliability	CC BY 4.0
aerospace engineering; electrical engineering; energy; electric power transmission; fuel cell; energy storage technology; hydrogen energy; lithium-polymer; super-capacitor; UAV	CC BY-NC-ND 4.0
UAV; quadrotor; review; control laws; dynamic modelling; unmanned aerial vehicles; flight control	CC BY 4.0
unmanned aerial vehicles; UAV; drones; aerial robots; navigation; path planning; sensing; computer vision; intelligent behavior	Open access — verify exact license on publisher page
smart grid; renewable energy sources; smart homes; energy management system; electric vehicles; virtual power plants	CC BY-NC-ND 4.0

smart grid; renewable energy; power systems; distributed generation; energy management; sustainable energy; grid modernization	CC BY 4.0
microgrid; smart grid; MG/SG infrastructure; control methodologies; inverter topologies; communication technologies	CC BY 4.0
100% renewable energy; microgrid; energy management; uncertainty modelling; renewable generation; energy storage; optimization	CC BY 4.0
microgrids; artificial intelligence; electrification; developing economies; energy access; intelligent energy systems	CC BY 4.0
networked microgrids; energy management system; distributed energy resources; optimization; distributed control; demand management	CC BY 4.0
electric vehicles; battery technology; battery management system; artificial intelligence; cybersecurity; interoperability; EV standards	Open access — verify exact license on publisher page

microgrid; control strategies; distributed energy resources; energy storage; power systems; resilience; reliability	CC BY 4.0
microgrids; sustainable energy; distributed generation; energy storage; monitoring; control; smart grids; power quality	CC BY 4.0
microgrid control; energy management; renewable energy; distributed control; hierarchical control; power system stability	Open access — verify exact license on publisher page
tight oil; CO2; mechanism; composite flooding; enhanced oil recovery	CC BY-NC-ND 4.0
enhanced oil recovery; chemical EOR; surfactants; polymers; alkaline flooding; mature oil fields	CC BY 4.0
enhanced oil recovery; heavy oil; bitumen; thermal recovery; reservoir properties; production methods	CC BY-NC-ND 4.0

enhanced oil recovery; low-salinity waterflooding; carbonate reservoirs; wettability alteration; hybrid EOR; brine chemistry	CC BY 4.0
CO2-EOR; enhanced oil recovery; carbon dioxide; miscible flooding; immiscible flooding; reservoir engineering; carbon storage	CC BY-NC-ND 4.0
microbial enhanced oil recovery; MEOR; reservoir screening; microorganisms; oil mobilization; Iraqi oilfields	CC BY 4.0
computational fluid dynamics; enhanced oil recovery; multiphase flow; reservoir simulation; chemical EOR; thermal EOR	CC BY 4.0
hole cleaning; drilling; cuttings transport; drilling fluids; rheology; hydraulics; oil and gas wells	CC BY 4.0
rate of penetration; ROP; drilling; predictive models; petroleum engineering; machine learning; drilling parameters	CC BY 4.0

electrical heating; heavy oil; viscosity; energy efficiency; enhanced oil recovery; EOR

Formal Identifier Type	Formal Identifier Value	Uploaded File	PDF / Full-text Source
DOI	10.1007/s42401-025-00366-w	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1002/eng2.70215	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1016/j.ijhydene.2023.12.263	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1016/j.paerosci.2023.100922	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1016/j.paerosci.2023.100925	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field

DOI	10.1007/s42496-023-00173-6	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1007/s13272-024-00770-6	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1016/j.heliyon.2020.e05285	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1007/s10846-021-01527-7	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1007/s13369-022-06738-0	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1016/j.heliyon.2024.e25705	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field

DOI	10.1186/s43067-025-00195-z	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1186/s43067-024-00188-4	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1007/s42452-024-05820-6	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1007/s40518-024-00233-w	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1007/s12667-024-00676-6	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1049/els2.12083	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field

DOI	10.1002/ese3.2095	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1038/s41598-023-48985-7	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1049/rpg2.13056	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1016/j.engeos.2026.100545	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1007/s11696-025-03943-7	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1016/j.heliyon.2024.e37826	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field

DOI	10.1021/acs.energyfuels.4c06023	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1007/s13202-026-02134-8	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1007/s13202-026-02179-9	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1007/s12182-019-00363-7	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.1155/2023/6688500	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field
DOI	10.3390/en16114289	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field

DOI	10.25299/jeee.2019.4874	Attach the open-access article PDF/full text	Use the publisher/ DOI page shown in the DOI field