1. Record Nr. UNINA9911019156203321 Autore Singh Chandan Deep Titolo Solar Electric Water and Air Tribrid Auto Engine Pubbl/distr/stampa Newark:,: John Wiley & Sons, Incorporated,, 2025 ©2025 **ISBN** 1-394-16689-3 1-394-16688-5 Edizione [1st ed.] Descrizione fisica 1 online resource (247 pages) Altri autori (Persone) SinghKanwaljit SinghDavinder SinghTalwinder SinghJasvinder SinghRajdeep Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Cover -- Series Page -- Title Page -- Copyright Page -- Contents --Chapter 1 Revolutionizing Transportation: A Comprehensive Review of Electricity-Run Engines -- Introduction -- Importance and Applications of Electricity-Run Engines -- Conclusion -- References -- Chapter 2 A Review of Water-Run Engines: A Sustainable Solution for Transportation -- Introduction -- Theory and Design of Water-Run Engines --Working of Water-Run Engine -- Hydrogen Electrolysis Set Up -- Fuel Efficiency and Environmental Impact -- Environmental Impact --Practical Applications of Water-Run Engines -- Benefits -- Current Developments in Water-Run Engines -- Future Developments in Water-Run Engines -- References -- Chapter 3 Compressed-Air-Run Engine -- Introduction -- Need for Compressed-Air-Run Engine --Compressed-Air Energy Technology: Scope, Issues, and Opportunities -- Various Compressed-Air Engine Parts -- Working Theory --Transmission Aspects of Compressed-Air Engines -- Outcomes --

Advantages -- Disadvantages -- Applications -- Conclusion --

References -- Chapter 4 Hybrid Electric Water Engine (Solar Charged) -- 4.1 Introduction -- 4.2 Why Hybrid? -- 4.2.1 How are Hybrid Water

Air Solar-Charged Engines Different? -- 4.2.1.1 Hybrid Water Air Engines Will Have Compact Size -- 4.2.1.2 Priority to Safety -- 4.2.1.3 Commercialization of Product -- 4.3 Hybrid Water Air Engine Vehicle Structure -- 4.3.1 Types of Hybrid Engines -- 4.3.1.1 Driveline Topologies -- 4.3.1.2 Hybridization Level -- 4.3.2 Other Types of Hybrid Electric Vehicles -- 4.3.2.1 Plug-In Hybrid Electric Vehicle (PHEV) -- 4.3.2.2 Hybrid Electric Vehicles with In-Wheel Motors -- 4.4 Solar-Charged Hybrid Vehicles -- 4.5 Solar Charging System for Hybrid Engines -- 4.5.1 Types of Solar Cells -- 4.5.1.1 Flexible Solar Panels: Pros and Cons -- 4.5.1.2 Power Management -- 4.6 Conclusions --

References. Chapter 5 Hybrid Water-Air Engine -- 5.1 Introduction -- 5.2 Technical and Environmental Needs -- 5.3 Concept of Hybrid Water-Air Engines -- 5.3.1 Technology Background -- 5.3.2 Water-Air Hybrid Solution --5.3.2.1 Derivative Uses -- 5.3.3 Electronic Control and Measurement --5.4 Potential Applications and Societal Values -- 5.4.1 Effect of Water-Air Hybrid Engine on NOx Emissions -- 5.4.2 Effect of Water-Air Hybrid Engine on CO and CO2 Emissions -- 5.4.3 Effect of Water-Air Hybrid Engine on HC Emissions -- 5.5 Conclusions -- References -- Chapter 6 Hybrid Electric-Air Engine (Solar Charged) -- 6.1 Introduction -- 6.2 History of Hybrid Air Engines -- 6.2.1 History of Electric Engines (Solar Energy Operated) -- 6.3 Need for Hybrid Air Engines -- 6.3.1 Benefits of Hybrid Air Engines -- 6.4 Concept of Hybrid Air Engines -- 6.4.1 Air Engine Powered by Solar Energy -- 6.4.2 Air Compressors -- 6.4.2.1 Theoretical Modelling of Compressor Mode -- 6.5 Hybrid Solutions --6.5.1 The Pneumatic-Combustion Hybrid -- 6.5.2 Air Engine Hybrid --6.5.3 Electric and Compressed Air Hybrid Engines -- 6.6 Hybrid Engine Electrical Charged -- 6.6.1 Hybrid Electric Engine Vehicles -- 6.6.1.1 Series Hybrid Engine Vehicles -- 6.6.1.2 Parallel Hybrid Engine Vehicles -- 6.6.1.3 Plug-In Hybrid Electric Engines -- 6.7 Hybrid Air Engines Solar Charged -- 6.8 Conclusions -- References -- Chapter 7 Tribrid Engine -- Introduction -- Electric Tribrid Engine -- Types by Drivetrain Structure -- References -- Chapter 8 Analysis of Hybrid and Tribrid Engines -- 8.1 Introduction -- 8.2 Design of Hybrid Engine -- 8.3 Design of Tribrid Engine -- 8.4 Operation of Hybrid Engines -- 8.5 Operation of Tribrid Engines -- 8.6 Benefits of Hybrid Engines -- 8.7 Benefits of Tribrid Engines -- 8.8 Conclusion -- References. Chapter 9 Assessing the Impact of Tribrid Technology on Automobile Performance and Sustainability -- Introduction -- Historical Development of Hybrid and Tribid Engines -- Comparison Between Conventional Combustion Engines and Other Alternative Powertrain Technologies -- Types By Drivetrain Structure -- Series Hybrid --Introduction to Tribrid Engine Architectures and Classifications --Performance Analysis and Evaluation -- Performance Metrics for Hybrid and Tribrid Engines -- Conclusion -- Key Insights and Implications --Suggestions for Further Research -- References -- Chapter 10 Exploring Future Implications for Tribrid Vehicles: Opportunities and Challenges for Sustainable Transportation -- 10.1 Introduction -- 10.2 Environmental Implications of Tribrid Vehicle -- 10.3 Energy Efficiency -- 10.4 Battery Technology -- 10.5 Hydrogen Infrastructure -- 10.6 Consumer Adoption -- 10.7 Tribrid Vehicles in Emerging Markets --10.8 Government Policies and Incentives for Tribrid Vehicles -- 10.8.1 Tax Incentives -- 10.9 Research and Development Grants -- 10.10 Infrastructure Investment -- 10.11 Subsidies for Fleet Vehicles --10.12 Emissions Regulations on Tribrid Vehicle -- 10.13 Rebates for Scrappage of Older Vehicles -- References -- Index -- Also of Interest -- EULA.

anyone in the automotive industry, as it offers a comprehensive analysis of cutting-edge technologies that could revolutionize vehicle design and fuel efficiency, paving the way for a more sustainable future. This book analyzes the performance of solar electric, water, and air-based engines. These technologies can be combined to create the revolutionary tribrid engine that combines the three technologies to create an environmentally friendly automobile. Electric motors are known for their low emissions, and solar has the potential to amplify this ability. Water powered engines react with oxygen in the air to create fuel, causing fewer emissions and improved fuel economy. Compressed-air motors are pressure-driven, diminishing our reliance on fossil fuels. Their combined potential in the tribrid model presents revolutionary innovations for how we power automobiles. This volume provides an in-depth exploration of these technologies, providing an advanced understanding of their fundamentals and potential for combination in a tribrid model, making it essential for innovators in the automotive sector.