Design Propulsion Electric Power Generation Systems

Right here, we have countless book **design propulsion electric power**

generation systems and collections to check out. We additionally offer variant types and next type of the books to browse. The tolerable book, fiction, history, novel, scientific research, as capably as

various extra sorts of books are readily welcoming here.

As this design propulsion electric power generation systems, it ends going on swine one of the favored book design propulsion

electric power generation systems collections that we have. This is why you remain in the best website to look the incredible book to have.

Power Generation

NASA and the U.S. Department of Energy (DOE) have teamed up to fund three design concepts for reactors that could become part of a nuclear thermal propulsion system, a next-generation

technology that ...

NASA, DOE fund three nuclear thermal space propulsion concepts

Blue Origin and General Electric Hitachi Nuclear

Energy have won contracts by NASA to develop nuclear-powered spacecraft that can travel faster and farther, to Mars and beyond. The Department of ...

Blue Origin, General Electric win NASA contracts to build nuclear-powered spacecrafts
Ultra Safe Nuclear Technologies and its partners are among three

teams winning $5 million contracts to develop designs for space nuclear propulsion systems.

USNC-Tech and Blue Origin win a contract for nuclear

thermal propulsion design NASA is leading an effort, working with the Department of Energy (DOE), to advance space nuclear technologies. The government team has selected three reactor ...

NASA Announces Nuclear Thermal Propulsion Reactor Concept Awards

PPE is the foundational element of NASA's lunar Gateway Maxar Technologies a trusted partner and

innovator in Earth Intelligence and Space Infrastructure, today announced that the Power and Propulsion ...

Maxar Completes Power and

Propulsion Element Preliminary Design Review NASA has selected three teams of companies to perform concept studies of nuclear thermal propulsion (NTP) reactors.

NASA issues contracts for nuclear thermal propulsion studies

A battery-electric ... propulsion is based on several precedents. Electric traction motors in diesel

locomotives operate at the continuous power rating. To achieve maximum energy conversion efficiency ...

Battery-Electric Tender for Modern Railway Propulsion

future-proof alternative.The conventional approach in ship design has been to use 2-stroke engines for propulsion and 4-stroke engines for electric power generation. The Wärtsilä / RINA ...

Novel Propulsion Arrangement by Wärtsilä and RINA or by generating onboard electrical power by use of a fuel cell, the focus of GKN Aerospace's 'H2GEAR' program

launched earlier this year. Whilst H2GEAR is exploring a liquid hydrogen propulsion ...

GKN Aerospace leads new Swedish National project on

hydrogen propulsion

Collins Aerospace completes design review and begins fabrication of a 500-kilowatt electric motor for the composites-intensive aircraft, with flight qualification testing to

occur in 2023.

Collins Aerospace ramps up electric motor development for Airlander 10 airship future-proof alternative.The conventional approach in

ship design has been to use 2-stroke engines for propulsion and 4-stroke engines for electric power generation. The Wärtsilä RINA ...

Novel Propulsion by Wärtsilä & RINA Can Deliver Immediate Benefits

IndyGo is now running Allison-equipped electric hybrid buses for Indianapolis Public Transport. (Photo: Business

Wire) Allison’s H 40 EP TM electric hybrid propulsion system is paired with the Cummins ...

Allison Transmission and IndyGo Partner to Bring

Electric Hybrid Buses to Indianapolis Public Transit The conventional approach in ship design has been to use 2-stroke engines for propulsion and 4-stroke engines for electric power generation. The

Wartsila/RINA arrangement, however, requires just ...

Wartsila: Novel LNG Propulsion Arrangement Can Meet Emission Targets

GLOBAL ANNOUNCEMENT Rapidly

moving towards becoming a fully electric car company, Volvo Cars is bringing battery cell technology development and production closer to home and aims to tailor its future ...

Tech Moment - Battery propulsion
Michael Ricci, LaunchPoint CTO, explains how their new hybrid-electric drone battery system regulates a smooth even flow of power to

motors.

LaunchPoint Debuts New Hybrid Power Solution to Extend Drone Ranges

Nuclear energy has lost favor in much of the world,

but the sky’s the limit when it comes to outer space. The U.S. government is drawing on the expertise of Jeff Bezos’s Blue Origin space venture, ...

Bezos, GE, Lockheed Are Tapped by NASA for Nuclear Space Flight

Enedym, the technology company that develops next generation electric propulsion and electrified powertrains, today announced

a $15 million financing round from an international group of strategic ...

Sustainable Electric Motor Company Enedym Inc. Secures $15 Million Investment to

Accelerate Business Plan

DUBLIN, June 29, 2021 /PRNewswire/ -- The "Next-Gen Aircraft Propulsion System ... the investments in alternative electric power sources, advancements in next-generation

electronic components ...

The primary human activities that release carbon dioxide (CO_2) into the atmosphere are the combustion of fossil fuels (coal, natural gas, and oil) to generate electricity, the provision of energy for

transportation, and as a consequence of some industrial processes. Although aviation CO2 emissions only make up approximately 2.0 to 2.5 percent of total global annual CO2 emissions,

research to reduce CO2 emissions is urgent because (1) such reductions may be legislated even as commercial air travel grows, (2) because it takes new technology a long time to propagate into and through

the aviation fleet, and (3) because of the ongoing impact of global CO2 emissions. Commercial Aircraft Propulsion and Energy Systems Research develops a national research agenda for reducing CO2

emissions from commercial aviation. This report focuses on propulsion and energy technologies for reducing carbon emissions from large, commercial aircraftâ€" single-aisle and twin-aisle aircraft that

carry 100 or more passengersâ€"because such aircraft account for more than 90 percent of global emissions from commercial aircraft. Moreover, while smaller aircraft also emit CO2, they make only a minor

contribution to global emissions, and many technologies that reduce CO2 emissions for large aircraft also apply to smaller aircraft. As commercial aviation continues to grow in terms of revenue-

passenger miles and cargo ton miles, CO2 emissions are expected to increase. To reduce the contribution of aviation to climate change, it is essential to improve the effectiveness of ongoing efforts to reduce emissions

and initiate research into new approaches.

The future national security environment will present the naval forces with operational challenges that can best be met through the

development of military capabilities that effectively leverage rapidly advancing technologies in many areas. The panel envisions a world where the naval forces will perform missions in the future

similar to those they have historically undertaken. These missions will continue to include sea control, deterrence, power projection, sea lift, and so on. The missions will be accomplished through the use

of platforms (ships, submarines, aircraft, and spacecraft), weapons (guns, missiles, bombs, torpedoes, and information), manpower, materiel, tactics, and processes (acquisition, logistics,and so on.).

Accordingly, the Panel on Technology attempted to identify those technologies that will be of greatest importance to the future operations of the naval forces and to project trends in their development out to

the year 2035. The primary objective of the panel was to determine which are the most critical technologies for the Department of the Navy to pursue to ensure U.S. dominance in future naval operations and to

determine the future trends in these technologies and their impact on Navy and Marine Corps superiority. A vision of future naval operations ensued from this effort. These technologies form the base from which

products, platforms, weapons, and capabilities are built. By combining multiple technologies with their future attributes, new systems and subsystems can be envisioned. Technology for the United States Navy

and Marine Corps, 2000-2035 Becoming a 21st-Century Force:Volume 2: Technology indentifies those technologies that are unique to the naval forces and whose development the Department of the Navy

clearly must fund, as well as commercially dominated technologies that the panel believes the Navy and Marine Corps must learn to adapt as quickly as possible to naval applications. Since the development of many of the

critical technologies is becoming global in nature, some consideration is given to foreign capabilities and trends as a way to assess potential adversaries' capabilities. Finally, the panel assessed the current

state of the science and technology (S&T) establishment and processes within the Department of the Navy and makes recommendations that would improve the efficiency and effectiveness of this vital

area. The panel's findings and recommendations are presented in this report.

U.S. Air Force (USAF) planners have envisioned

that uninhabited air vehicles (UAVs), working in concert with inhabited vehicles, will become an integral part of the future force structure. Current plans are based on the premise that UAVs have the

potential to augment, or even replace, inhabited aircraft in a variety of missions. However, UAV technologies must be better understood before they will be accepted as an alternative to inhabited

aircraft on the battlefield. The U.S. Air Force Office of Scientific Research (AFOSR) requested that the National Research Council, through the National Materials Advisory Board and the Aeronautics and Space

Engineering Board, identify long-term research opportunities for supporting the development of technologies for UAVs. The objectives of the study were to identify technological developments that would

improve the performance and reliability of â€œgeneration-after-nextâ€ UAVs at lower cost and to recommend areas of fundamental research in materials, structures, and aeronautical technologies. The study focused on

innovations in technology that would â€œleapfrogâ€ current technology development and would be ready for scaling-up in the post-2010 time frame (i.e., ready for use on aircraft by 2025).

Download Ebook Design Propulsion Electric Power Generation Systems

The only book that covers fundamental shipboard design and verification concepts from individual devices to the system level Shipboard

electrical system design and development requirements are fundamentally different from utility-based power generation and distribution requirements. Electrical engineers who are engaged in shipbuilding must understand

various design elements to build both safe and energy-efficient power distribution systems. This book covers all the relevant technologies and regulations for building shipboard power systems, which include

commercial ships, naval ships, offshore floating platforms, and offshore support vessels. In recent years, offshore floating platforms have been frequently discussed in exploring deep-water

resources such as oil, gas, and wind energy. This book presents step-by-step shipboard electrical system design and verification fundamentals and provides information on individual electrical devices and

practical design examples, along with ample illustrations to back them. In addition, Shipboard Power Systems Design and Verification Fundamentals: Presents real-world examples and supporting drawings for

shipboard electrical system design Includes comprehensive coverage of domestic and international rules and regulations (e.g. IEEE 45, IEEE 1580) Covers advanced devices such as VFD (Variable Frequency Drive)

in detail This book is an important read for all electrical system engineers working for shipbuilders and shipbuilding subcontractors, as well as for power engineers in general.

High power nuclear electric propulsion systems have the capability to enable many next-generation space exploration applications. To date, use of electric primary propulsion in flight systems has been limited to

low-power, solar electric missions. There is a need for a large-scale research and development effort to field systems capable of meeting the demands of future high-power electric propulsion missions,

especially missions utilizing nuclear power plants to power electric propulsion systems. In formulating such an effort, it is first important to identify the likely requirements around which

such a system might be designed. These requirements can be effectively cast in terms of required thruster lifetime, thrust, specific impulse, output power, and power plant specific power. Projected requirements can

be derived based on the mass characteristics of space-borne nuclear power plants, and the optimized trajectories of spacecraft missions enabled by the use of megawatt-level nuclear electric power systems.

Detailed mass modeling of space-based Rankine cycle nuclear power plants is conducted to evaluate the achievable specific power of these systems. Based on the figures for specific power so obtained, mission

modeling is next conducted using the Mission Analysis Low-Thrust Optimization software package. Optimized thrust, specific impulse and lifetime figures are derived for several missions of interest. A survey of

available electric propulsion thrusters is conducted and thruster configurations presenting the lowest developmental risks in migrating to high thruster output power are identified. Design

evolutions are presented for three thrusters that would enhance or enable operation at the megawatt level. First, evaluation of projected lifetime for dual-stage gridded ion thrusters is conducted using the CEX2D

simulation tool to evaluate the utility of multi-stage gridded ion engines in obtaining the required thruster lifetime for operation at high specific impulse. Next, to evaluate the utility of Hall

thrusters operating at high propellant mass flow rate, a numerical thruster model is developed that incorporates the effects of the neutral fluid in predicting thruster performance. Using this code, numerical simulations

are conducted to investigate the effects of variations in propellant mass flow rate, magnetic field topology, and thruster channel geometry on achievable performance. Finally, the effects of variations in the channel

contour of magnetoplasmadynamic thrusters on performance and efficiency are evaluated using the MACH2 software package. Incremental variations in thruster channel contour are

implemented, and the effects of these variations on the performance onset condition, and electrode current distributions are observed. Conclusions regarding the utility of each of these three design evolutions in

developing thrusters for multi-megawatt electric propulsion systems are discussed. Contributions stemming from this research include, first, the establishment of an appropriate requirements

space for the design of advanced highpower electric power and propulsion systems. This design space is comprised of projected requirements for power plant specific power, derived from power plant mass modeling,

and thruster output power, specific impulse and lifetime derived from mission modeling. Additionally, this work provides evaluation, using state-of-the-art simulation suites, of several electric

thruster design evolutions of potential utility in developing electric propulsion systems designed to operate at the megawatt level.

An in-depth exploration of

shipboard power generation and distribution system design that utilizes variable frequency drives The variable frequency drive (VFD) application is a proven technology for shore-based applications. However,

shore-based VFDs often are unsuitable for shipboard applications because the power generation and distribution fundamentals are completely different. VFD Challenges for Shipboard Electrical Power System

Design explores the problems presented by variable frequency drives as they are applied in shipboard power generation and distribution system design and offers solutions for meeting these challenges. VFDs with

configurations such as six pulse drive, 12 pulse drive, 18 pulse drive, active front end, pulse width modulation and many others generate many different levels of harmonics. These harmonics are often much higher than

the regulations allow. This book covers a range of techniques used to provide ships with efficient energy that minimizes mechanical and electrical stress. This important book: Offers a comparison of shipboard

grounding and VFD grounding Contains an analysis of the VFD effect in terms of shipboard power quality Includes specific examples of Department of Transportation standards regarding VFDs Written for

commercial and naval engineers designing ships and/or shipboard power systems, VFD Challenges for Shipboard Electrical Power System Design is a comprehensive resource that addresses the problems and

solutions associated with shipboard applications of VFD.