Handbook of Space Technology

Five decades after the launch of the first satellite – Sputnik 1 – in October 1957, this *Handbook of Space Technology* is intended to provide a comprehensive overview of this exciting field.

The handbook, with four-color printing throughout, provides not only students, engineers and scientists but also nonprofessionals who have a serious interest in space activities with detailed insights into the fascinating world of space technology.

The chapters

- Introduction (historical overview, space missions)
- Fundamentals (orbit mechanics, aerothermodynamics/reentry, space debris, etc.)
- Launch Vehicles (stage technology, propulsion systems, launch infrastructure, etc.)
- Spacecraft Subsystems (structure, energy supply, thermal regulation, attitude control, communication, etc.)
- Aspects of Human Space Flight (humans in space, life support systems, rendezvous and docking, etc.)
- Mission Operations (satellite operations, control center, ground station networks)
- Utilization of Space (earth observation, communication, navigation, astronomy, material sciences, space medicine, robotics, etc.)
- Configuration and Design of a Space System (mission concept, system concept, environmental simulation, system design, Galileo satellites, etc.)
- Management of Space Missions (project management, quality management, cost management, space law, etc.)

together with their 42 "subchapters" describe the processes and methodologies behind the development, construction, operation and utilization of space systems.

The individual chapters and subchapters of this handbook, written by leading experts from universities, research institutions and the space industry, enable the reader who wants information about a selected field to quickly gain a substantial overview. Those who wish to deepen their understanding of individual topics can refer to selected bibliographies as well as an extensive keyword index. The editors have taken care to structure the book in such a way that readers may also find it convenient to read it from cover to cover, thereby accessing a thorough presentation of the current status of space activities.

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