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Titolo	Advanced propulsion systems and technologies, today to 2020 / / edited by Claudio Bruno, Antonio G. Accettura
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Descrizione fisica	1 online resource (506 p.)
Collana	Progress in astronautics and aeronautics ; ; v. 223
Altri autori (Persone)	BrunoClaudio AccetturaAntonio G
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Soggetti	Space vehicles - Propulsion systems Propulsion systems
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Livello bibliografico	Monografia
Note generali	"Commissioned by the European Space Agency"--P. [4] of cover.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Advanced solid rocket motors -- Advanced cryogenic engines -- Advanced LOX-HC engines for boosters and upper stages -- LOX-hydrocarbon engines in Russia -- Green propellants -- Green propellants in Russia -- Miniaturized propulsion -- Solar thermal propulsion for upper stages -- Electric-propulsion systems -- Superconductivity -- The case for nuclear propulsion : the Rubbia's engine -- VASIMR prefeasibility analysis -- Laser propulsion systems -- Mass accelerators : Maglev and Railguns -- Solar sails : propellantless propulsion for near- and medium-term deep-space missions -- In situ resource utilization.
Sommario/riassunto	Commissioned by the European Space Agency, this book details specific propulsion technologies as envisioned by 2020. Each technology has been considered in terms of concept, associated key technologies, development status and proposed roadmaps. The 16 chapters are organized in such a way as to follow a developmental logic. The material starts with the future of SRM, grounded on R&D done at present, goes through the development of LOX/HC liquid rocket engines, a technology based on the U.S. and Russian work of the 60s and 70s. It then looks into future technologies and systems just beginning to make their impact felt now, such as superconductivity

applied to electric propulsion, MW-class ion engines (perhaps utilizing a nuclear power source), solar sails, laser propulsion, nuclear propulsion (such as the promising VASIMR), and ISRU.