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	Autore	Fahner Sebastian
	Titolo	Politics of Pasts and Futures in (Post-)Imperial Contexts
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2.	Record Nr.	UNINA9910683342603321
	Autore	Moynihan Matthew
	Titolo	Fusion's Promise : How Technological Breakthroughs in Nuclear Fusion Can Conquer Climate Change on Earth (And Carry Humans To Mars, Too) // by Matthew Moynihan, Alfred B. Bortz
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	ISBN	9783031229060 9783031229053
	Edizione	[1st ed. 2023.]
	Descrizione fisica	1 online resource (xxvii, 272 pages) : illustrations
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	Soggetti	Electric power production Plasma (Ionized gases) Nuclear engineering Nuclear fusion Energy policy Mechanical Power Engineering Plasma Physics Nuclear Energy Nuclear Fusion Energy Policy, Economics and Management
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Introduction: Fusion Basics -- 2. Exciting Fusion Developments -- 3. Pinches -- 4. Mirrors -- 5. Cusps -- 6. Tokamaks & Stellarators -- 7. Field Reversed Configuration -- 8. Inertial Electrostatic Confinement -- 9. Ion Beams -- 10. Plasma Cannons -- 11. Inertial Confinement Fusion -- 12. Liquid Metal -- 13. Conclusion: Achieving a Fusion-Powered Future.
Sommario/riassunto	<p>For over 60 years, scientists and engineers have been trying to crack a seemingly intractable problem: how to build practical devices that exploit nuclear fusion. Access to electricity has facilitated a standard of living that was previously unimaginable, but as the world's population grows and developing nations increasingly reap the benefits of electrification, we face a serious global problem: burning fossil fuels currently produces about eighty percent of the world's energy, but it produces a greenhouse effect that traps outgoing infrared radiation and warms the planet, risking dire environmental consequences unless we reduce our fossil fuel consumption to near zero in the coming decades. Nuclear fusion, the energy-producing process in the sun and stars, could provide the answer: if it can be successfully harnessed here on Earth, it will produce electricity with near-zero CO₂ byproduct by using the nuclei in water as its main fuel. The principles behind fusion are understood, but the technology is far from being fully realized, and governments, universities, and venture capitalists are pumping vast amounts of money into many ideas, some highly speculative, that could lead to functioning fusion reactors. This book puts all of these attempts together in one place, providing clear explanations for readers who are interested in new energy technologies, including those with no formal training in science or engineering. For each of the many approaches to fusion, the reader will learn who pioneered the approach, how the concept works in plain English, how experimental tests were engineered, the future prospects, and comparison with other approaches. From long-established fusion technologies to emerging and exotic methods, the reader will learn all about the idea that could eventually constitute the single greatest engineering advance in human history.</p>