

1. Record Nr.	UNINA9910484007503321
Autore	De Iaco Veris Alessandro
Titolo	Fundamental concepts of liquid-propellant rocket engines // Alessandro de Iaco Veris
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-54704-3
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (IX, 747 p. 456 illus., 57 illus. in color.)
Collana	Springer Aerospace Technology, , 1869-1730
Disciplina	621.4356
Soggetti	Liquid propellant rocket engines
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preface -- Chapter 1: Fundamental concepts on liquid-propellant rocket Engines -- Chapter 2: The thrust chamber assembly -- Chapter 3: Feed systems using gases under pressure -- Chapter 4: Feed systems using turbo-pumps -- Chapter 5: Control systems and valves -- Chapter 6: Tanks for propellants -- Chapter 7: Interconnecting components and structures.
Sommario/riassunto	This book is intended for students and engineers who design and develop liquid-propellant rocket engines, offering them a guide to the theory and practice alike. It first presents the fundamental concepts (the generation of thrust, the gas flow through the combustion chamber and the nozzle, the liquid propellants used, and the combustion process) and then qualitatively and quantitatively describes the principal components involved (the combustion chamber, nozzle, feed systems, control systems, valves, propellant tanks, and interconnecting elements). The book includes extensive data on existing engines, typical values for design parameters, and worked-out examples of how the concepts discussed can be applied, helping readers integrate them in their own work. Detailed bibliographical references (including books, articles, and items from the "gray literature") are provided at the end of each chapter, together with information on valuable resources that can be found online. Given its scope, the book will be of particular interest to undergraduate and graduate students of aerospace engineering.

