

1. Record Nr.	UNINA9910731473303321
Autore	Zou Shikun
Titolo	Laser Shock Peening : Fundamentals and Advances // by Shikun Zou, Junfeng Wu, Ziwei Cao, Zhigang Che
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	981-9911-17-6
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (398 pages)
Altri autori (Persone)	WuJunfeng CaoZiwei CheZhigang
Disciplina	671.7
Soggetti	Lasers Materials - Fatigue Aerospace engineering Astronautics Laser Materials Fatigue Aerospace Technology and Astronautics Laser Technology Laser-Matter Interaction
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Characteristics and current situation of laser shock peening -- Laser shock peening system for industrial application -- Process stability factors and safety protection of laser shock peening -- Numerical analysis of mechanical effect of laser shock peening -- Evaluations of strengthening effect of the metals with laser shock peening.
Sommario/riassunto	This book highlights the fundamentals and latest progresses in the research and applications of laser shock peening (LSP). As a novel technology for surface treatment, LSP greatly improves the resistance of metallic materials to fatigue and corrosion. The book presents the mechanisms, techniques, and applications of LSP in a systematic way. It discusses a series of new progresses in fatigue performance improvement of metal parts with LSP. It also introduces lasers,

equipment, and techniques of newly developed industry LSP, with a detailed description of the novel LSP blisk. The book demonstrates in details numerical analysis and simulation techniques and illustrates process stability control, quality control, and analysis determination techniques. It is a valuable reference for scientists, engineers, and students in the fields of laser science, materials science, astronautics, and aeronautics who seek to understand, develop, and optimize LSP processes.

---