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Titolo	Advances in lightweight materials and structures : select proceedings of ICALMS 2020 // edited by A. Praveen Kumar, Tatacipta Dirgantara, P. Vamsi Krishna
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Descrizione fisica	1 online resource (XVIII, 827 p. 537 illus., 422 illus. in color.)
Collana	Springer proceedings in materials ; ; Volume 8
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Soggetti	Lightweight materials
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Nota di contenuto	Chapter 1: Mechanical Behaviour of lightweight Materials -- Chapter 2: Composite materials and processing -- Chapter 3: Nano composites for light-weight structures -- Chapter 4:Material behavior (light-weight alloys, polymers, metals, foams, ceramics, biological materials) -- Chapter 5: Behaviour of materials under impact and blast loading -- Chapter 6: Biomechanics and Biomedical Engineering -- Chapter 7: Nanotechnology and Micro-engineering. Chapter 8: Design and manufacturing for lightweight components & structures -- Chapter 9: Tool design and manufacture for producing lightweight components -- Chapter 10: Impact and failure of structures -- Chapter 11: Joining techniques for lightweight structures for similar and dissimilar materials -- Chapter 12: Friction stir welding in light-weight sandwich structures -- Chapter 13: Applications: Aerospace, Automotive, Marine, Defence, Offshore, Civil -- Chapter 14: Design for manufacturing, reliability and Safety -- Chapter 15: Robotics, Automation and Control -- Chapter 16: Fatigue and Fracture Mechanics.
Sommario/riassunto	This book presents select proceedings of the International Conference on Advanced Lightweight Materials and Structures (ICALMS) 2020, and discusses the triad of processing, structure, and various properties of lightweight materials. It provides a well-balanced insight into materials science and mechanics of both synthetic and natural composites. The book includes topics such as nano composites for lightweight

structures, impact and failure of structures, biomechanics and biomedical engineering, nanotechnology and micro-engineering, tool design and manufacture for producing lightweight components, joining techniques for lightweight structures for similar and dissimilar materials, design for manufacturing, reliability and safety, robotics, automation and control, fatigue and fracture mechanics, and friction stir welding in lightweight sandwich structures. The book also discusses latest research in composite materials and their applications in the field of aerospace, construction, wind energy, automotive, electronics and so on. Given the range of topics covered, this book can be a useful resource for beginners, researchers and professionals interested in the wide ranging applications of lightweight structures.
