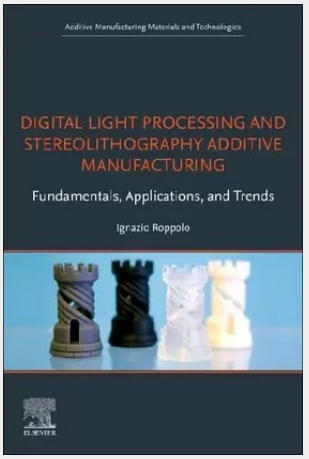
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Digital Light Processing and Stereolithography Additive Manufacturing

Fundamentals, Applications, and Trends



231,50 €
231,50 € (zzgl. MwSt.)

vorbestellbar, Erscheinungstermin ca. November 2026

Digital Light Processing and Stereolithography Additive Manufacturing: Fundamentals, Applications, and Trends overviews these cutting-edge 3D-printing techniques, the materials they can produce, and applications for these techniques and materials. Sections cover the fundamentals, with chapters discussing the core principles of vat photopolymerization, related technological requirements, the characteristics of digital light processing (DLP) and stereolithography (SL) compared to other light-induced methods, as well as the chemistry and materials used, including how to formulate a resin. Section two covers applications, such as design for structural applications, as well as DLP and SL use in dentistry, soft robotics, sensors, biomedicine, microfluidics, catalysis and chemical engineering, and more. The book concludes with a section discussing current trends and future directions for the technology, with chapters analyzing sustainable materials, including efforts to substitute synthetic materials with bio-based ones, vitrimers, controlled polymers, and 4D printing and DLP and SL in hybrid AM.

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Artikelnummer: 9780443301612
Medium: Buch
ISBN: 978-0-443-30161-2
Verlag: Elsevier - Health Sciences Division
Erscheinungstermin: 03.11.2026
Sprache(n): Englisch
Auflage: Erscheinungsjahr 2026
Serie: Additive Manufacturing Materials and Technologies
Produktform: Kartoniert
Gewicht: 450 g
Seiten: 408
Format (B x H): 152 x 229 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)