

## Documents

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**Advancements and Limitations in 3D Printing Materials and Technologies: A Critical Review**  
(2023) *Polymers*, 15 (11), art. no. 2519, .

**DOI:** 10.3390/polym15112519

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**Abstract**

3D printing has revolutionized various industries by enabling the production of complex designs and shapes. Recently, the potential of new materials in 3D printing has led to an exponential increase in the technology's applications. However, despite these advancements, the technology still faces significant challenges, including high costs, low printing speeds, limited part sizes, and strength. This paper critically reviews the recent trends in 3D printing technology, with a particular focus on the materials and their applications in the manufacturing industry. The paper highlights the need for further development of 3D printing technology to overcome its limitations. It also summarizes the research conducted by experts in this field, including their focuses, techniques, and limitations. By providing a comprehensive overview of the recent trends in 3D printing, this review aims to provide valuable insights into the technology's prospects. © 2023 by the authors.

**Author Keywords**

3D printing; additive manufacturing; engineering applications; materials

**Index Keywords**

3-D printing, 3D-printing, Complex designs, Complex shapes, Critical review, Engineering applications, Materials and technologies, Printing materials, Printing technologies, Recent trends; 3D printing

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Trans Tech Publications Ltd., Bâch, Switzerland

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**Publisher:** MDPI



**ISSN:** 20734360  
**Language of Original Document:** English  
**Abbreviated Source Title:** Polym.  
2-s2.0-85161545376  
**Document Type:** Review  
**Publication Stage:** Final  
**Source:** Scopus

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