

# Preface

The Additive Manufacturing (3D printing) process builds a three-dimensional object from a computer-aided design (CAD) model, usually by successively adding material layer by layer, which is why it is also called additive manufacturing, and unlike conventional machining, casting and forging processes, where material is removed from a stock item or poured into a mold and shaped by means of dies, presses and hammers. The umbrella term additive manufacturing (AM) gained popularity in the 2000s, inspired by the theme of material being added together (in any of various ways). In contrast, the term subtractive manufacturing appeared as a retronym for the large family of machining processes with material removal as their common theme. The term 3D printing still referred only to the polymer technologies in most minds, and the term AM was more likely to be used in metal-working and end use part production contexts than among polymer, ink-jet, or stereo lithography enthusiasts.<sup>1</sup>

In the present book, thirty typical literatures about additive manufacturing published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on Rapid Prototyping, 3D printing and Solid Free-form Fabrication, etc. We hope this book can demonstrate advances in Additive Manufacturing as well as give references to the researchers, students and other related people.

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<sup>1</sup>[https://en.wikipedia.org/wiki/3D\\_printing#cite\\_note-1](https://en.wikipedia.org/wiki/3D_printing#cite_note-1)