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## Additive Manufacturing of Alloys and Composites

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Additive manufacturing, also known as 3D printing, utilizes a layer-by-layer deposition process, offering numerous advantages over traditional manufacturing methods such as enhanced geometric versatility, reduced material wastage, and expedited production cycles. This reprint explores the significant advancements in the additive manufacturing of alloys and composites, focusing on materials like stainless steels, superalloys, CoCrMo alloys, and metal matrix composites. The unique microstructures and exceptional material properties achieved through rapid cooling rates and thermal gradients are examined in detail. This reprint includes ten pivotal contributions, providing insights into optimizing processing parameters, understanding microstructural evolution, and enhancing material properties for diverse applications in aerospace, automotive, electronics, medical, military, and architecture sectors. This collection not only presents the latest developments in high-performance additive manufacturing materials but also paves the way for future innovations in the field.

