

# **Emerging Techniques in Crystal Engineering for Enhanced Material Performance**

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**Abstract:** *Crystal engineering, a subfield of materials science, focuses on the design and manipulation of crystalline materials to achieve desired properties and performances. This paper explores the recent advancements and emerging techniques in crystal engineering aimed at enhancing material performance. From pharmaceuticals to electronics, crystal engineering holds the potential to revolutionize various industries by tailoring crystal structures and properties at the atomic level. This paper highlights key techniques such as co-crystallization, polymorphism control, and bottom-up synthesis, along with their applications and potential impacts on the development of novel materials with improved performance characteristics.*

**Keywords:** Crystal engineering.

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