

Abstract Submitted
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Finding new structures in hexagonal-close-packed alloys¹ GUS HART, RODNEY FORCADE, Brigham Young University — Because of their exceptional strength-to-weight ratios, magnesium-based alloys could play a critical role in increasing the fuel efficiency of automobiles. But much of the materials science of magnesium alloys is unknown. One particularly important question is how to improve the creep resistance of the alloys by precipitate hardening. Finding new compounds and structures that form in magnesium alloys could provide the key to developing a new material. We have developed several new approaches to explore all possible structures in hexagonal-close-packed systems (such as magnesium) and determine which are promising.

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