



Ab initio lattice stability and elastic properties of Fe-Mn based alloys

By Thomas Gebhardt

Shaker Verlag Feb 2012, 2012. Taschenbuch. Book Condition: Neu. 210x148x mm. Neuware - Fe-Mn based alloys exhibit fascinating properties for a wide range of applications. Fe-Mn alloys can be seen as prototypes for high-Mn steels, featuring high strength and exceptional plasticity due to various metal-physical deformation mechanisms under mechanical load, providing therefore great potential for structural components in automotive engineering. The stacking fault energy (SFE) of the face-centered-cubic (fcc) phase, strongly affected by the chemical composition, governs the deformation behavior and hence the mechanical properties. In a first part of this thesis, the influence of the magnetic state on the lattice stability of fcc vs. hcp Fe-Mn random alloys with and without additions of Al and Si was studied using ab initio calculations. The ab initio results are consistent with thermodynamic calculations, obtained with Calphad. With room temperature magnetic configurations, the cross-over between Ehcp and Efcc of binary Fe-Mn alloys is in the expected Mn range and the increase of SFE below the Néel temperature due to additions of Mn is well displayed. The addition of Al strongly stabilizes the fcc lattice below the fcc Néel temperature, which is consistent with an increase in SFE, whereas adding Si yields a...



READ ONLINE
[1.47 MB]

Reviews

The most effective pdf i ever go through. It is probably the most incredible book i have got study. You wont sense monotony at at any time of the time (that's what catalogs are for relating to if you check with me).

-- **Ahmad Heaney**

I just started reading this article pdf. it was actually writtern very properly and useful. You wont really feel monotony at whenever you want of your respective time (that's what catalogs are for relating to in the event you question me).

-- **Brandt Koss III**

Other PDFs



[Crochet: Learn How to Make Money with Crochet and Create 10 Most Popular Crochet Patterns for Sale: \(Learn to Read Crochet Patterns, Charts, and Graphs, Beginner s Crochet Guide with Pictures\)](#)

Createspace, United States, 2015. Paperback. Book Condition: New. 229 x 152 mm. Language: English . Brand New Book ***** Print on Demand *****.Getting Your FREE Bonus Download this book, read it to the end and see BONUS: Your FREE Gift chapter after...



[The Trouble with Trucks: First Reading Book for 3 to 5 Year Olds](#)

Anness Publishing. Paperback. Book Condition: new. BRAND NEW, The Trouble with Trucks: First Reading Book for 3 to 5 Year Olds, Nicola Baxter, Geoff Ball, This is a super-size first reading book for 3-5 year olds, with an engaging story, colourful pictures...



[Joey Green's Rainy Day Magic: 1258 Fun, Simple Projects to Do with Kids Using Brand-name Products](#)

Fair Winds Press, 2006. Paperback. Book Condition: New. Brand new books and maps available immediately from a reputable and well rated UK bookseller - not sent from the USA; despatched promptly and reliably worldwide by Royal Mail;



[Games with Books : 28 of the Best Childrens Books and How to Use Them to Help Your Child Learn - From Preschool to Third Grade](#)

Book Condition: Brand New. Book Condition: Brand New.



[Games with Books : Twenty-Eight of the Best Childrens Books and How to Use Them to Help Your Child Learn - from Preschool to Third Grade](#)

Book Condition: Brand New. Book Condition: Brand New.



[I Am Reading: Nurturing Young Children s Meaning Making and Joyful Engagement with Any Book](#)

Heinemann Educational Books, United States, 2015. Paperback. Book Condition: New. 234 x 185 mm. Language: English . Brand New Book. It s vital that we support young children s reading in ways that nurture healthy reading identities, that foster an attraction to...