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Original Articles

Strain hardening behaviour and the Taylor factor of pure magnesium

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Acknow

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Notes

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1. Kelley and Hosford 13 showed that the yield surface of textured polycrystals of pure Mg is highly non-equiaxed due to the stress asymmetry of twinning; however, it takes a nearly equiaxed shape after the first 6–8% strain, once twinning is over.

2. Preserving the yield surface's initial shape requires strain hardening proportional to the current flow stress, an assumption which is not easy to justify by dislocation theory 3.

3. The scales in Figures 1 through 4 are related by the Taylor factors $M_{\sigma} = M_{\varepsilon} = 4.5$. A higher or lower M value, respectively, decreases or increases the relative slope of the polycrys

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Source: Springer Science and Business Media LLC

Effect of deformation temperature on Hall–Petch relationship registered for polycrystalline magnesium

Source: Elsevier BV

Pair interaction of pyramidal dislocations and its contribution to flow stresses in Mg crystals during slip in system {1122}

Source: Elsevier BV

Application of texture simulation to understanding mechanical behavior of Mg and solid solution alloys containing Li or Y

Source: Elsevier BV

Texture Evolution and Ultrafine Grain Formation in Cross-Cryo-Rolled Zircaloy-2

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Microscopic observations of glide in non close-packed planes in aluminium, and comparison with magnesium

Source: Elsevier BV

The Influence of Temperature and Strain Rate on the Flow Stress of Magnesium Single Crystals

Source: CSIRO Publishing

The deformation of magnesium single crystals

Source: Informa UK Limited

Electron-microscopic Investigation of Low Temperature Work Hardening of Mg Single Crystals

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Source: Elsevier BV

Deformation modes in γ-TiAl as derived from the single crystal yield surface
Source: Elsevier BV
Microstructure evolution under compressive plastic deformation of magnesium at different temperatures and strain rates
Source: Elsevier BV
The plastic deformation of polycrystalline aggregates
Source: Informa UK Limited
Substitutional solution hardening of magnesium single crystals
Source: Informa UK Limited
Effect of temperature and shear direction on yield stress by {11 $$\bar 2$$ 2}□ $$\overline {11} $$ 23□ slip in HCP metals23□ slip in HCP metals
Source: Springer Science and Business Media LLC
The crystallography and deformation modes of hexagonal close-packed metals
Source: Informa UK Limited
Anisotropic Mechanical Behavior of Additive Manufactured AISI 316L Steel
Source: Springer Science and Business Media LLC
The yield surface of h.c.p. crystals
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Development of gradient concentrated single phase fine Mg-Zn particles and effect on structure and mechanical properties
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Effects of pressure and aging treatment on microstructures and mechanical properties of rhe
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Etude en microscopie electronique du glissement pyramidal {1122} □1123□ dans le magnesium

Source: Informa UK Limited

Self-consistent modelling of the plastic deformation of F.C.C. polycrystals and its implications for diffraction measurements of internal stresses

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Taylor factors in materials with many deformation modes

Source: Elsevier BV

Physics and phenomenology of strain hardening: the FCC case

Source: Elsevier BV

Advancing towards constitutive equations for the metal industry via the LEDS theory

Source: Springer Science and Business Media LLC

Polyslip in single crystals

Source: Elsevier BV

Effect of „Forest" Dislocations in the {1122} □1123□ system on hardening in Mg single crystals under basal slip

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{1122}□1123□ Slip system in magnesium

Source: Elsevier BV

Validating a polycrystal model for the elastoplastic response of magnesium alloy AZ31 using in situ neutron diffraction

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