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Electron diffraction analysis of dislocation- induced substructure evolution of Al crystals in compression

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Figure Captions

1. Fig. 1. Deformation – induced substructure in a [002] – oriented Al single crystal after compression to ε =0.5, is taken from [1]
2. Fig. 2. Eyolution of the disorientation distribution $f(|\Theta|)$ in dependence on the strain
3. Fig. 3. Apparent disorientation distribution $f(|\Theta|_{irr})$ measured with a dislocation – free Si single crystal
4. Fig. 4 Disorientations $<|\Theta|>$ and $<|\Theta|>_{rel}$ of compressed Al crystals in dependence on the strain
5. Fig. 5 Mean chord lengths of the meso-scale substructure of compressed Al substructure as determined by TEM, EBSD, and XRD
6. Fig. 6. Determination of the number of correlated dislocation walls and the saturation disorientation $<|\Theta_\infty|>$ (Example: ε = 1.92)
7. Fig. 7. Distributions $f(n_{BC})$ of the band – contrast number n_{BC} of the compressed Al in comparison with that of a perfect Si single crystal
8. Fig. 8 . Integrated widths B_{BC} of the distributions $f(n_{BC})$ and mean total dislocation densities ρ_d of Al in dependence on the strain

Figures

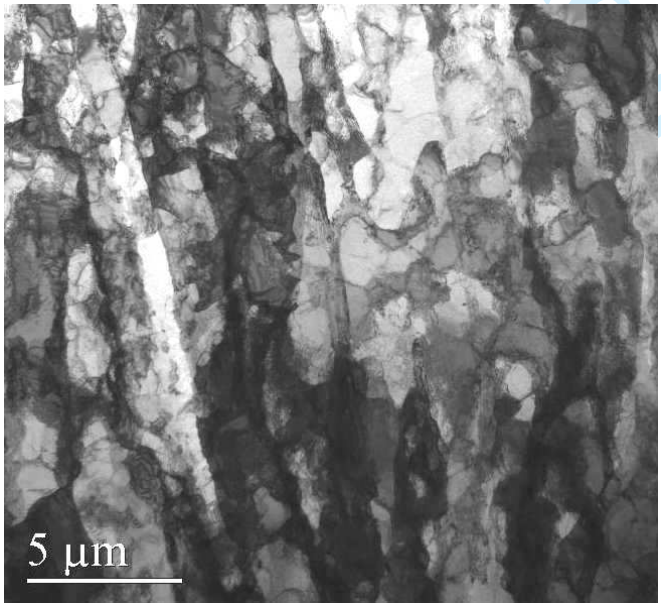

Fig. 1

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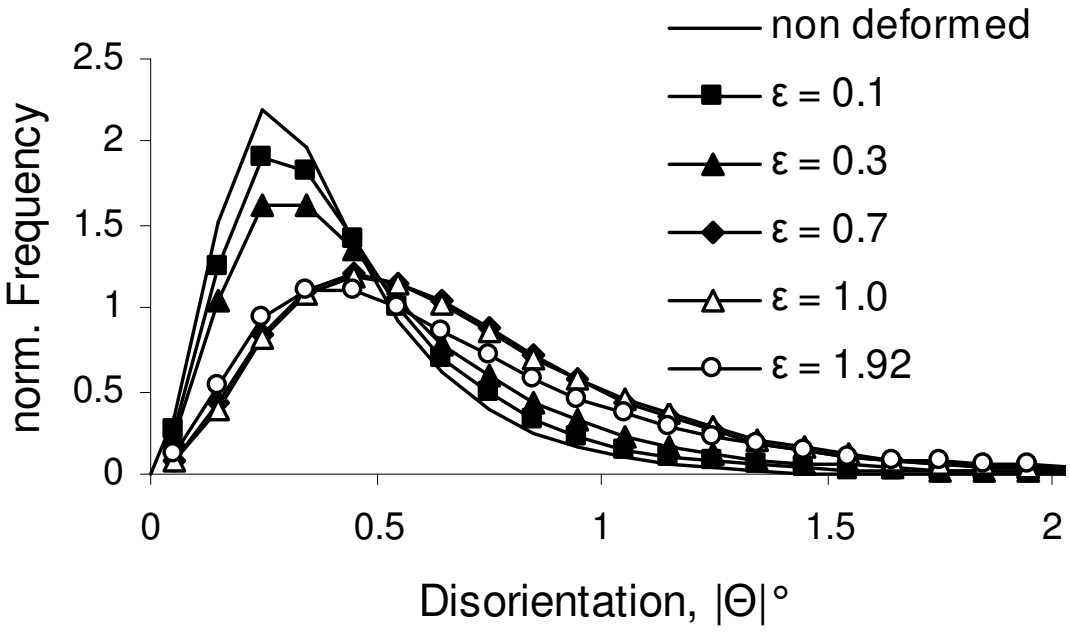

Fig. 2

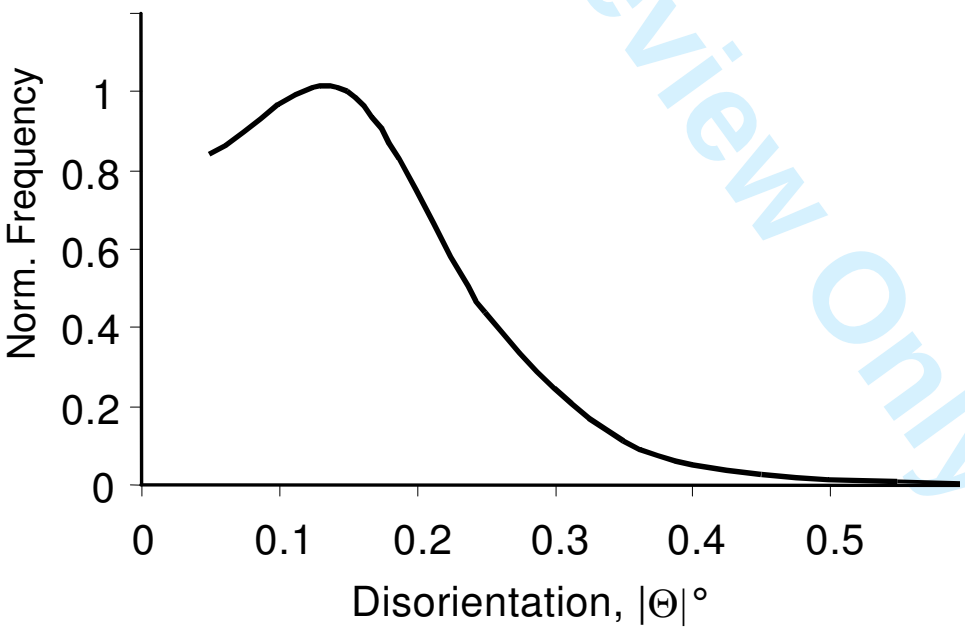

Fig. 3

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Fig. 4

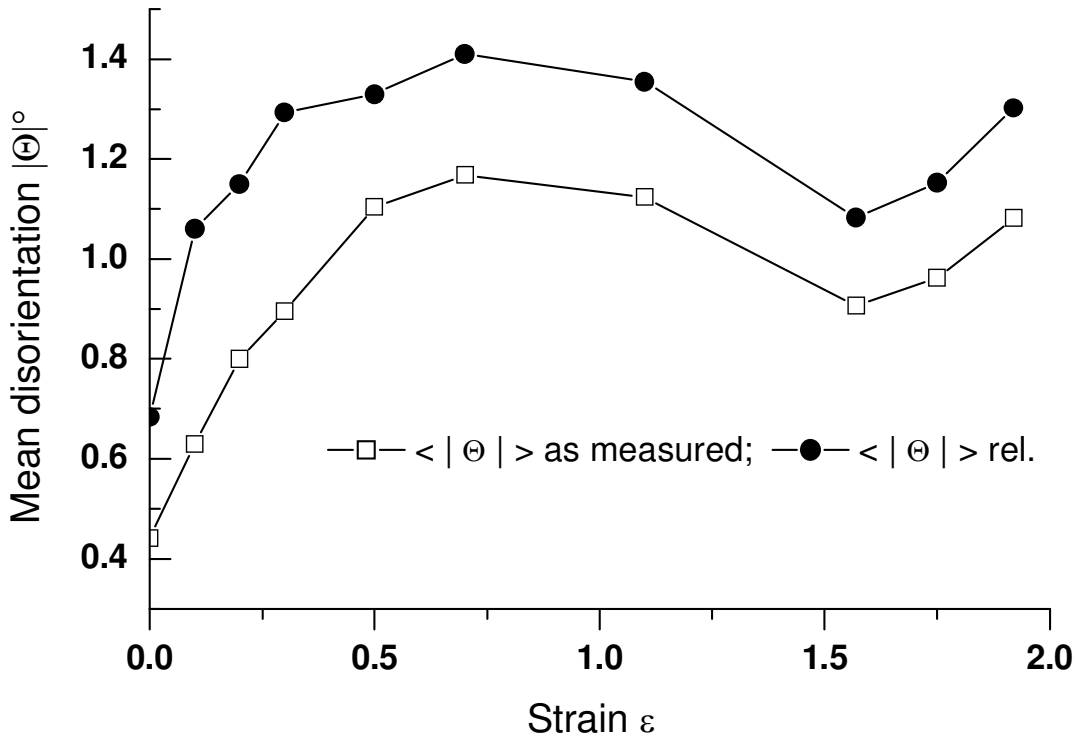


Fig. 4

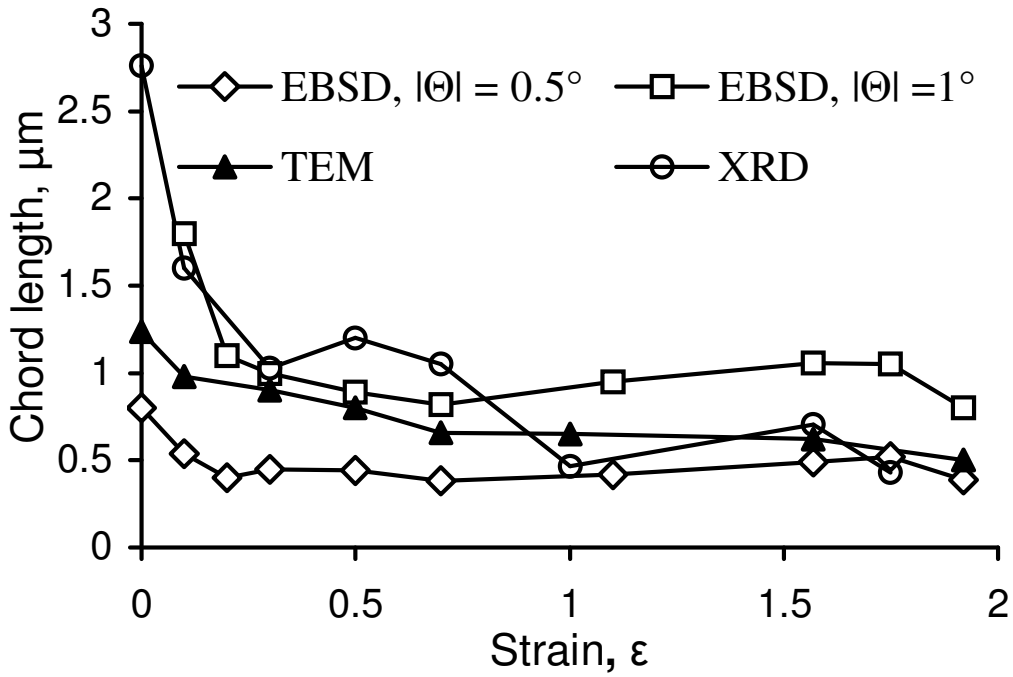
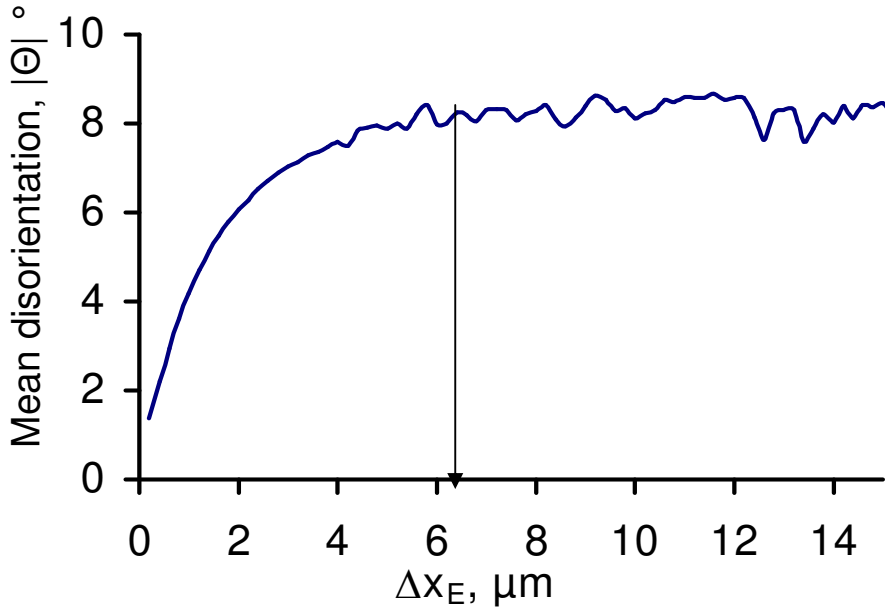


Fig. 5



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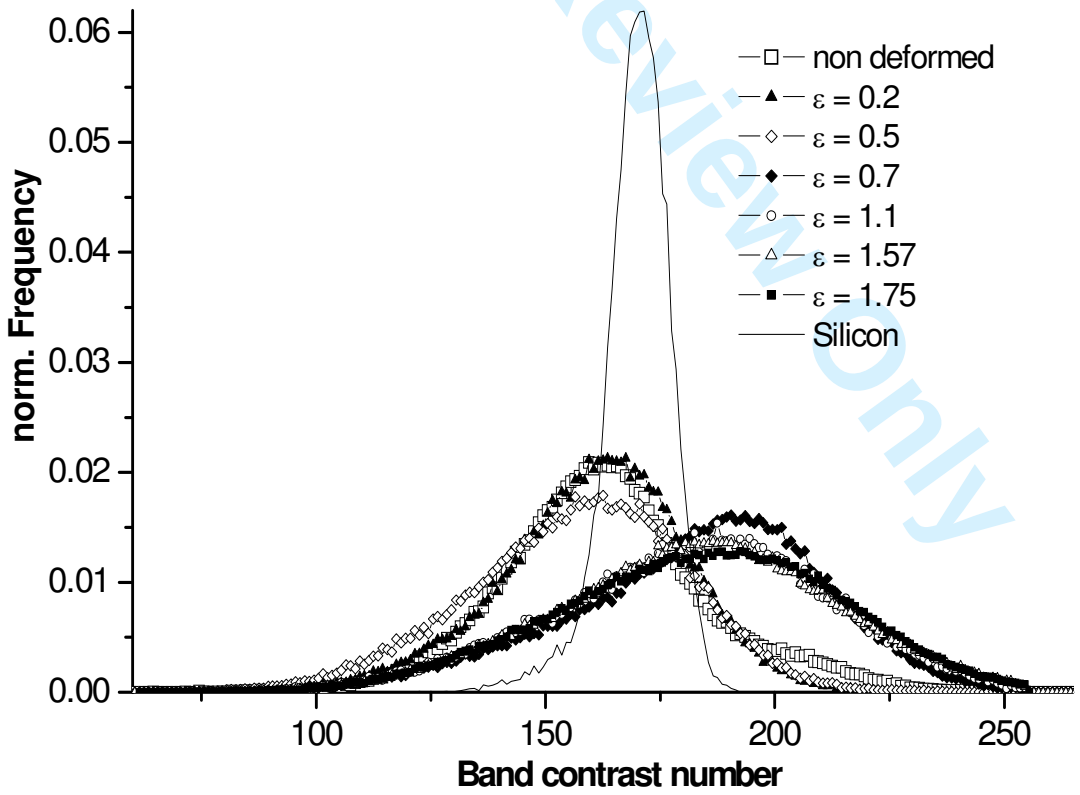

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Fig. 7

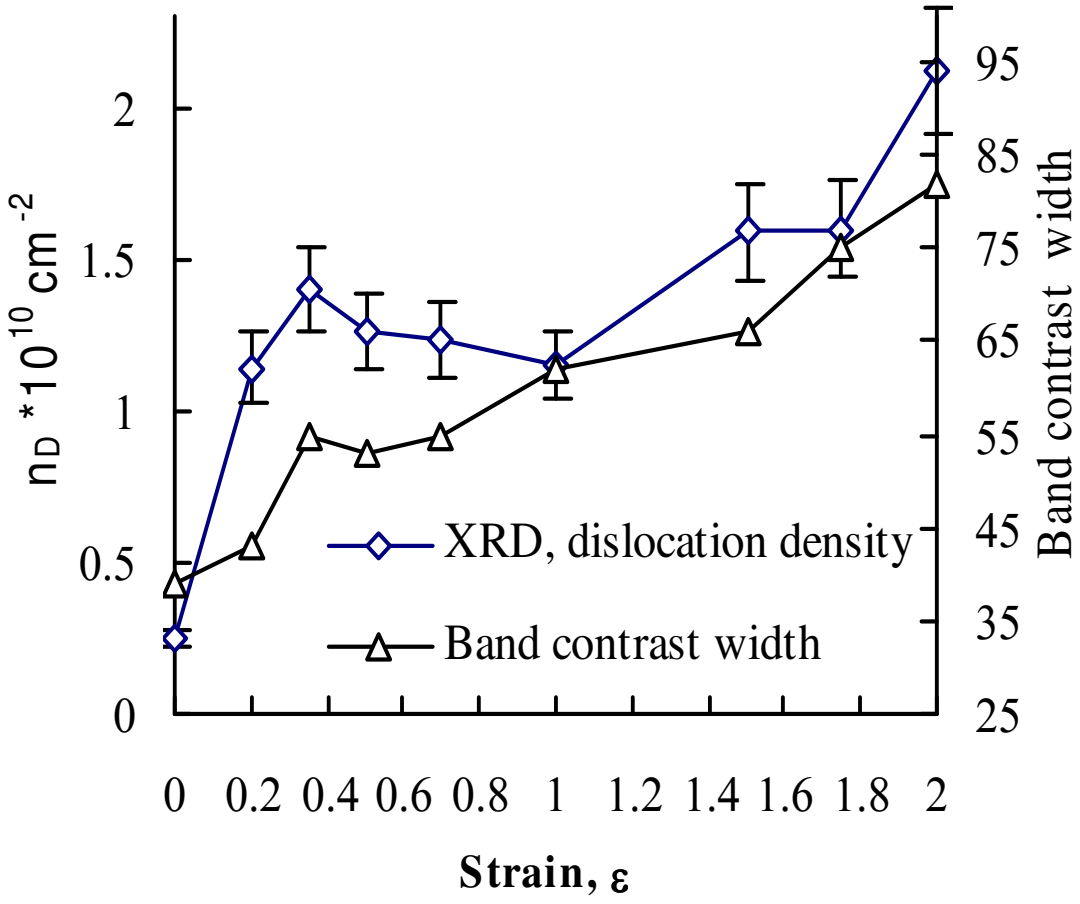

Fig. 8

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