

## Strain detwinning of NaFeAs single crystals: Resistivity and magnetic susceptibility study

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Transport properties like resistivity and magnetic susceptibility have been studied on the mechanically detwinned single crystals of NaFeAs. The anisotropy of resistivity has been found obviously along the lattice parameter  $a$  (direction of the antiferromagnetic chains) and  $b$  (direction of the ferromagnetic chains) as direction  $a$  shows a smaller resistivity compared to direction  $b$ . The anisotropy occurs above the structural temperature ( $T_N$ ). This behavior is the same as  $\text{BaFe}_2\text{As}_2$  [1],  $\text{Ba}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$  and  $\text{Eu}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$ [2] while different from  $\text{CaFe}_2\text{As}_2$ [1] in which the anisotropy vanishes immediately at  $T_N$ . Moreover, we observed an enhancement of  $T_N$  for about 10K. The magnetic susceptibility also shows very interesting behaviors from twinned to detwinned samples, which we are now focusing on.

[1] M. A. Tanatar, R. Prozorov, et al. Phys. Rev. B 81, 184508 (2010).

[2] J. J. Ying, X. H. Chen, et al. e-print arXiv:1012.2731 (to be published).