

**MAGNETIC PROPERTIES OF Fe₃Si/GaAs(001)
HYBRID-STRUCTURES**

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The magnetic properties of Fe₃Si/GaAs(001) hybrid structures are studied. These epitaxial ferromagnetic films of 33 and 39 nm thickness show a high crystalline and interfacial perfection [1]. Structural characterization and SQUID magnetometry has been done [2]. We present ferromagnetic resonance (FMR) studies determining the uniaxial and fourfold anisotropy fields. The easy axis of magnetization is the in-plane [010] direction. The full angular dependence of the resonance field reveals a small uniaxial in-plane anisotropy field of -6 to -34 Oe which increases with the Fe concentration. Thus, the [1 $\bar{1}$ 0] direction is not equivalent to the [110] direction, anymore. Moreover, these samples show an exceptional narrow linewidth (≈ 5 Oe) confirming the high structural quality. Supported by DFG (Sfb 290, TP A2).

[1] J. Herfort *et al.*, Appl. Phys. Lett. **83**, 3912 (2003).

[2] J. Herfort *et al.*, J. Vac. Sci. Technol. B **22**, 2073 (2004).

9.7 cm

13.4 cm

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