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**Lambeth**

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(54) **MAGNETIC MATERIAL STRUCTURES,  
DEVICES AND METHODS**

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patent is extended or adjusted under 35  
U.S.C. 154(b) by 325 days.

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**G11B 5/66** (2006.01)  
**G11B 5/70** (2006.01)

(52) **U.S. Cl.** ..... **428/831.2**

(58) **Field of Classification Search** ..... 428/828,  
428/831.2, 832, 815

See application file for complete search history.

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(57) **ABSTRACT**

A thin film magnetic structure, magnetic devices, and  
method of producing the same, wherein (110) textured,  
symmetry broken body centered cubic or body centered  
cubic derivative crystalline structures epitaxially grown on  
hexagonal shaped templates, in the presence of a symmetry  
breaking mechanism is provided to promote oriented  
uniaxial magnetic properties from a series of successively  
deposited film layers, result in new oriented magnetic layer  
structures and microstructures and thus improved magnetic  
devices and device performance.

**41 Claims, 15 Drawing Sheets**

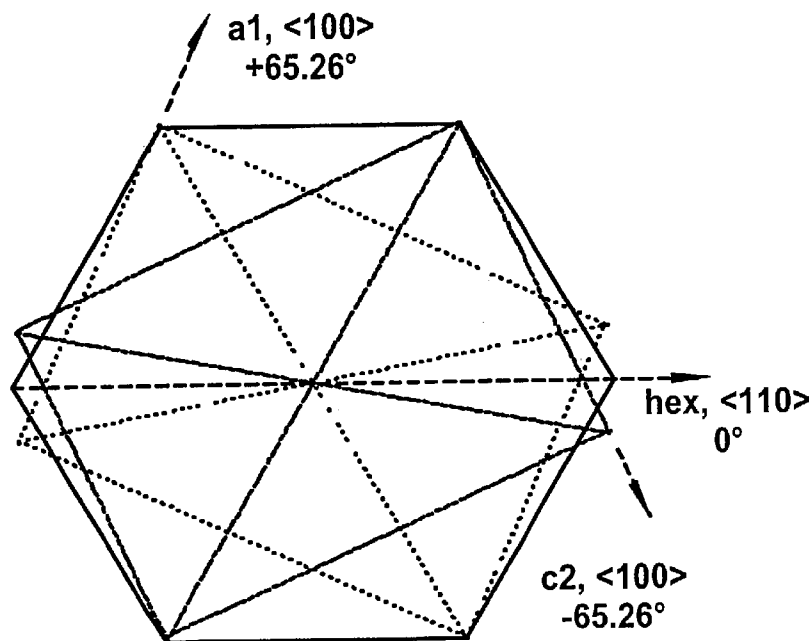
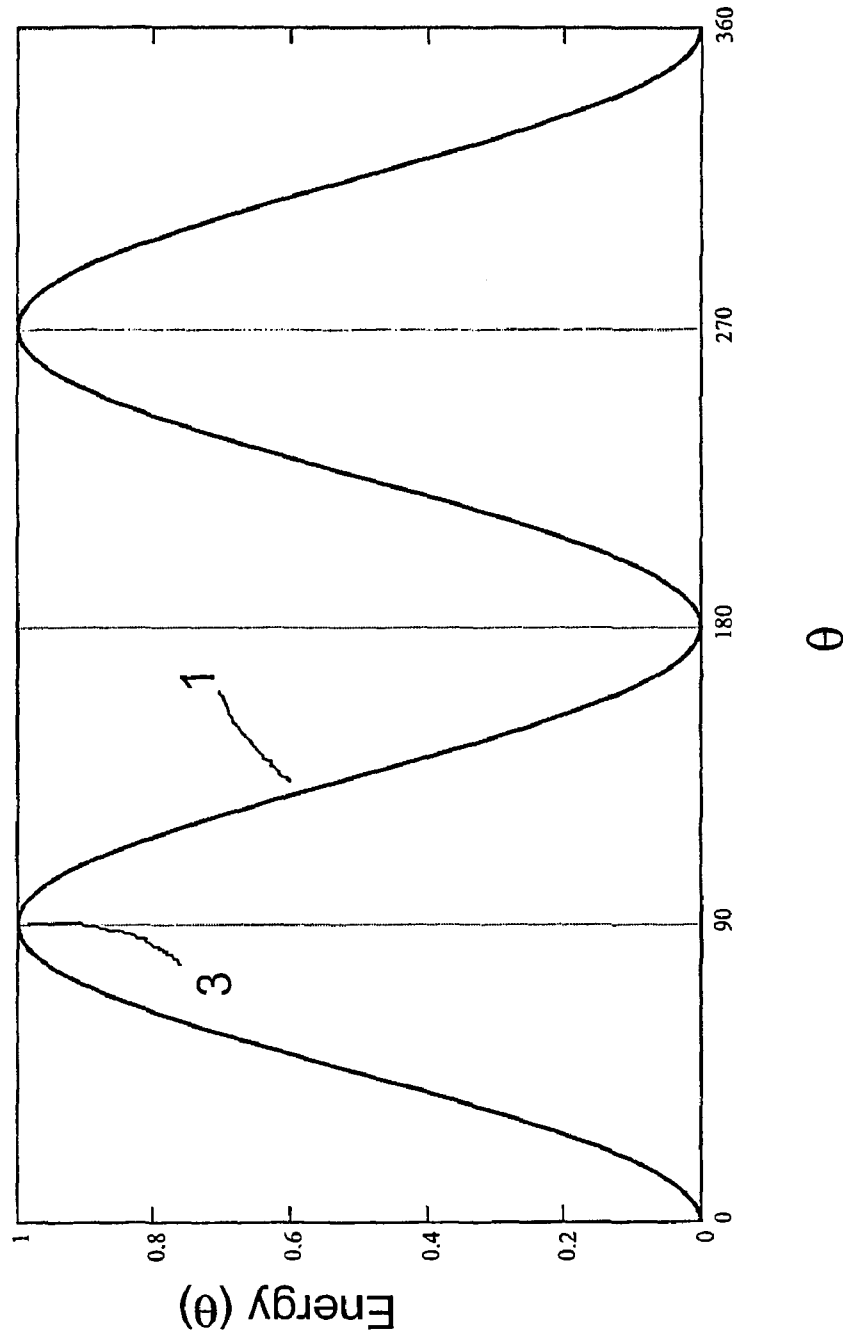


Figure 1



PRIOR ART

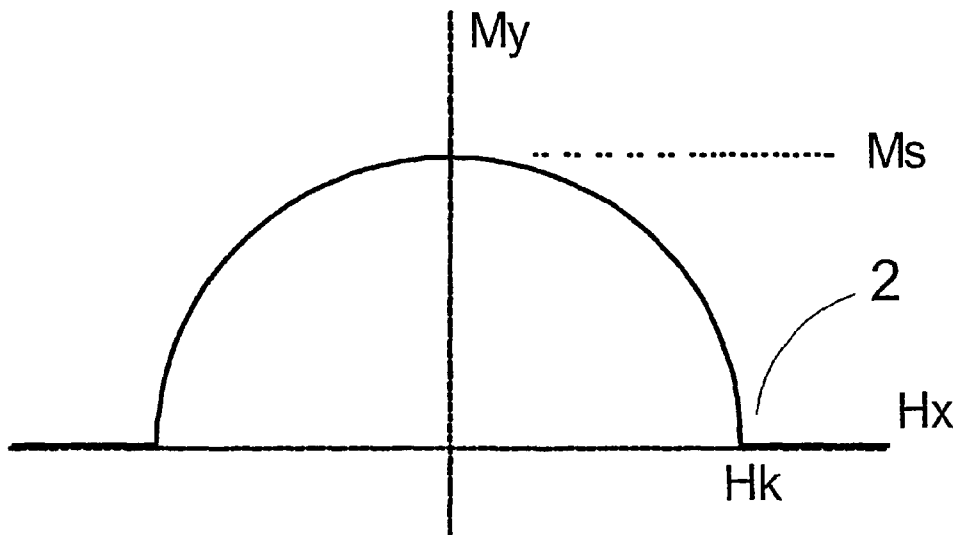
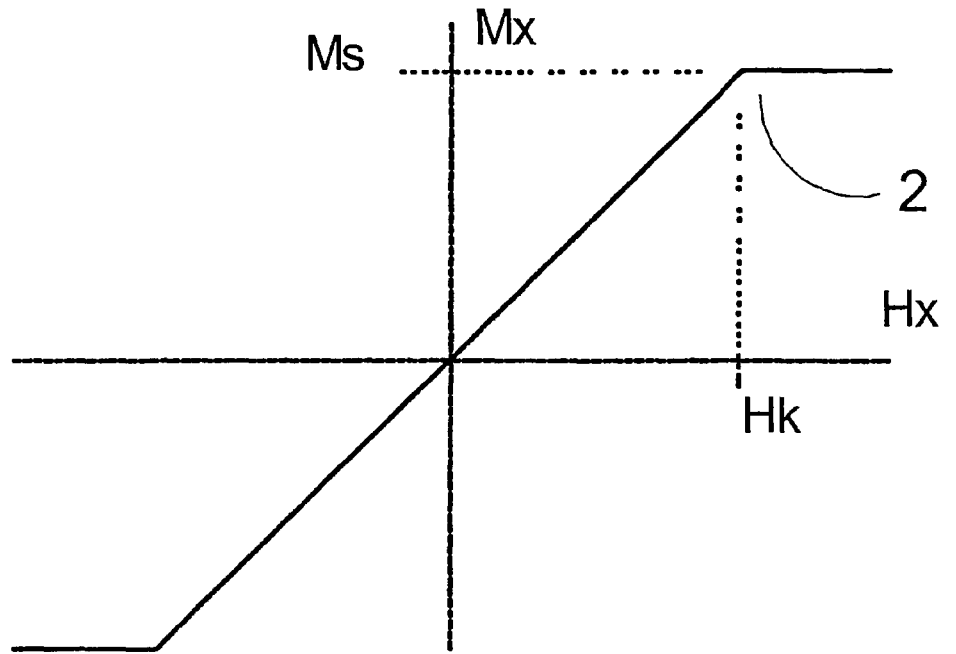


Figure 2

PRIOR ART

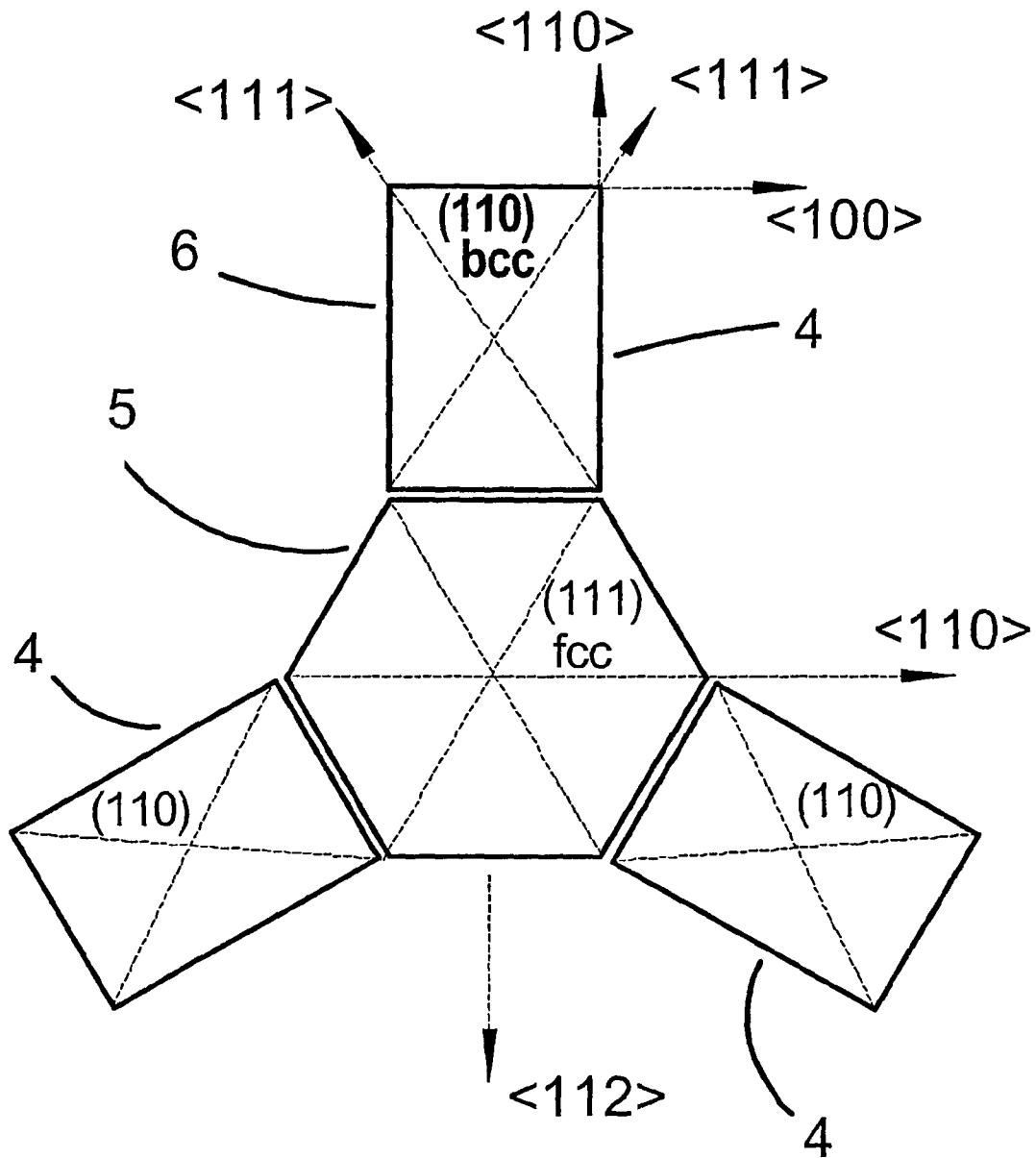
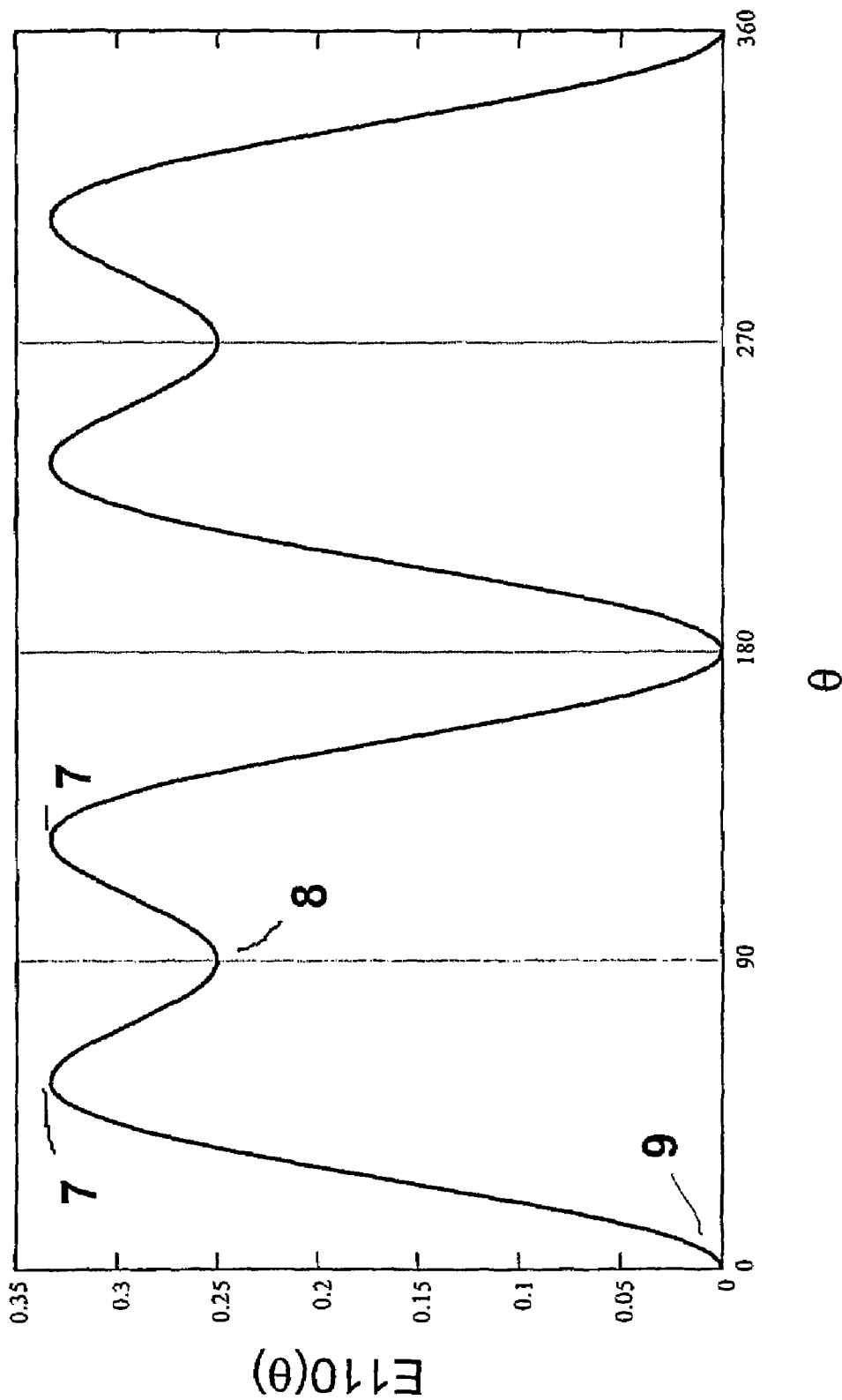


Figure 3

PRIOR ART

Figure 4



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