

MAGNETIC ANISOTROPY OF 3d- AND  
4f-METALS IN THE MODEL OF CRYSTAL  
FIELD WITH CALCULATION OF COVALENT  
BONDS AND THEIR FLUCTUATIONS.  
2. MAGNETIC PROPERTIES OF HEAVY  
RARE-EARTH METALS

*A. I. Mitsek*

Institute for Metal Physics,  
Nat. Acad. of Sci. of Ukraine  
(36, Academician Vernadsky Str., Kyiv 03680, Ukraine)

The theory, developed in part I [1], is applied to explain the magnetic properties of rare-earth metals (REM). The anomalous temperature dependences of magnetization  $M_s(T)$  and magnetic anisotropy (MA) constant  $K_1(T)$  are explained. The covalent theory of REM giant magnetic anisotropy allows one to explain a change of the  $K_1(0)$  sign in the series of heavy REM.