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The Magnetic Behaviour of the Surface and Bulk Components of Tb(0001)Films

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**Abstract:** The use of circularly polarised light in photoemission from ferromagnetically ordered rare earth's (RE) shows large magnetic circular dichroism in angular dependence (MCDAD) effect. Therefore MCDAD in photoemission from RE's provides new perspectives for surface magnetism studies within the view of the recently postulated sum rules. This allows to probe magnitude and orientation of the sample magnetisation without time-consuming electron-spin analysis. The well-resolved multiplet structures have been obtained in 5p photoemission of Tb using circularly polarised light. This multiplet structure is caused by the interaction between the core level photohole and those partially filled subshell, i.e. as result of the unpaired 4f and 5p electrons. In 4f levels of Tb(0001) films, the well-resolved surface component of the Tb  $^8S_{7/2}$  has been observed a separation of magnetic circular dichroism in the angular dependence effect for the surface layer and for the bulk.

**Key Words:** Magnetic Circular Dichroism in Angular Dependence, Magnetic Measurements, Terbium, Growth, Magnetic films, Tungsten.

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