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Abstract

MAGNETIC POLE CONFIGURATION FOR HIGH DENSITY THIN FILM
RECORDING HEAD

A thin film magnetic recording head for high-density recording applications. The head includes a pole formed from at least two ferromagnetic material layers with one layer having high anisotropy (H_k) and low permeability (μ), and the other layer having low H_k and high μ . The high H_k layer provides the lower magnetic impedance flux path in the tip region and the low H_k layer provides the lower magnetic impedance path in the yoke region of the head. A non-magnetic film may be disposed between the layers, with a thickness chosen to minimize domain flux coupling of the two magnetic layers, while allowing magnetic signal flux transfer between layers at an appropriate point between the tip and the yoke. The pole may be sculpted so that the low H_k layer extends only partially into the tip region, or so that the high H_k layer extends only partially into the yoke. Alternatively, the invention may use a laminated, high permeability layer and a homogeneous layer in place of the high H_k and low H_k layers.

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