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**FABRICATION OF SELF-ALIGNED REFLECTIVE/PROTECTIVE
OVERLAYS ON MAGNETORESISTANCE SENSORS,
AND THE SENSORS**

ABSTRACT

The invention relates to the fabrication of magnetoresistance sensors and in particular to the oxide structure that overlies the free layer.

A magnetoresistance sensor (50) is fabricated using a sensor structure (70) including a free layer (74) deposited upon a lower layered structure (72) and depositing an oxide structure (76) overlying the free layer (74). The depositing of the oxide structure (76) includes the steps of depositing a buffer layer (78) overlying the free layer (74), wherein the buffer layer (78) is a buffer layer metal when deposited, depositing an overlayer (80) overlying and contacting the buffer layer (78), the overlayer (80) being an overlayer metallic oxide of an overlayer metal, and oxidizing the buffer layer (78) to form a buffer layer metallic oxide.

FIG. 5