This Sheet Has Been Replaced

ABSTRACT

METHOD AND APPARATUS FOR MANUFACTURING MAGNETORESISTIVE ELEMENT, SOFTWARE AND SYSTEM FOR CONTROLLING MANUFACTURING OF MAGNETORESISTIVE ELEMENT, SOFTWARE FOR ESTIMATING RESISTANCE VALUE OF MAGNETORESISTIVE ELEMENT, AND COMPUTER SYSTEM

Provided are a method and an apparatus for manufacturing a magnetoresistive element and a method and an apparatus for manufacturing a magnetic head which can reduce variation in properties of an magnetoresistive element and variation in the median of distribution.

Before starting polishing, wafer information containing various types of factors in a wafer stage which may have an influence on a resistance value of a final MR film is obtained, and an S value is calculated from the information by using a statistical scheme. During a polishing step, ongoing-work-information containing various types of factors in a polishing stage which may have an influence on the resistance value of the final MR film is obtained at regular intervals. A K value is calculated from the information by using the statistical scheme. Then, an MR resistance estimate during the polishing step is calculated from the S value and the K value. When the MR resistance estimate reaches a target resistance value , polishing is stopped.