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[54] **METHODS AND COMPOSITIONS FOR OPTIMIZING INTERFACIAL PROPERTIES OF MAGNETORESISTIVE SENSORS**

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[75] Inventor: **Daniel A. Nepela**, San Jose, Calif.

[73] Assignee: **Read-Rite Corporation**, Milpitas, Calif.

[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Primary Examiner—Peter S. Wong
Assistant Examiner—Rajnikant B. Patel
Attorney, Agent, or Firm—Nathan N. Kallman

[57] ABSTRACT

A method for maximizing the interfacial properties of magnetoresistive sensors, such as spin valve and GMR sensors used in storage devices, comprises selecting the materials for ferromagnetic layers and for electrically conductive spacers that are interposed between the ferromagnetic layers. The electronegativities of the selected materials are substantially matched so that an absolute value of the differences in electronegativities is minimized. The conductive spacer material provides a relatively low resistivity and a large mean free path. The sensors experience greater chemical and thermal stability, are corrosion resistant, and realize an increased signal output.

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[58] Field of Search 338/32 R; 427/130, 427/131, 132, 404; 204/192 EC; 324/252, 207.21; 360/113, 75, 128

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25 Claims, 5 Drawing Sheets

