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(71) Applicant *(for all designated States except US)*: SEAGATE TECHNOLOGY, INC. [US/US]; 920 Disc Drive, Scotts Valley, CA 95067–0360 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: XUE, Song, Sheng [CN/US]; 7150 Cahill Road, Edina, MN 55439 (US). RYAN, Patrick, J. [US/US]; 1249 Scheffer Avenue, Saint–Paul, MN 55116 (US). DOLEJSI, James, F. [US/US]; 9260 Kiowa Trail, Chanhassen, MN 55317 (US).

(74) Agents: ANGUS, Robert, M. et al.; Kinney & Lange, P.A., Suite 1500, 625 Fourth Avenue South, Minneapolis, MN 55415–1659 (US).

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(54) Title: IMPROVED MAGNETORESISTIVE READ SENSOR AND METHOD OF FABRICATING A MAGNETORESISTIVE READ SENSOR

(57) Abstract

An improved magnetoresistive read sensor (100) and a method of fabricating magnetoresistive read sensor (100) that eliminates film removal are disclosed. The magnetoresistive sensor (100) is formed by positioning a first mask (128) on a gap layer (104) split into three regions due to subsequent layers. A first mask (128) is positioned on the central region of the gap layer (104) and a first hard–biasing material (106) is deposited onto the outside regions of the gap layer (104). The first mask (128) is removed and a magnetoresistive element (116) is deposited onto the outside regions of the first hard–biasing material (106) and the central region of gap layer (104), thereby forming an active region (122), a first passive region (124) and a second passive region (126) of the magnetoresistive sensor (100). A spacer layer (118) is deposited onto the magnetoresistive element (116) in all three regions and a soft adjacent layer (120) is deposited onto the spacer layer (118) in all three regions. A second mask (134) is positioned over the active region (122) of the sensor and a second hard–biasing material (110) is deposited onto the soft adjacent layer (120) in the first passive region (124) and the second passive region (126). The second mask (134) is removed and contacts (112, 114) are positioned onto the second hard–biasing material (110).

