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(54) **METHODS FOR FABRICATING MAGNETORESISTIVE RANDOM ACCESS MEMORY**

(71) Applicant: **HeFeChip Corporation Limited**, Hong Kong (CN)

(72) Inventors: **Wei-Chuan CHEN**, Scarsdale, NY (US); **Hong-Hui HSU**, Zhubei City (TW); **Chih-Yuan LEE**, Taoyuan City (TW); **Yiheng XU**, Clifton Park, NY (US)

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(57) **ABSTRACT**

Methods for fabricating a magnetoresistive random access memory are disclosed. In this method, an MTJ stack is formed over a lower metal layer on a semiconductor substrate, and a first etching is then performed to form an MTJ component and to expose a portion of a bottom electrode layer or via beneath the MTJ stack. An oxidation process is then carried out to oxidize both a conductive redeposition on sidewalls of the MTJ component and a partial thickness of the exposed portion of the bottom electrode layer or via around the MTJ component. Subsequently, a second etching is conducted at an incident etching angle of smaller than 45°, which facilitates complete removal of the resulting sidewall oxide layer on the MTJ component, as well as damaged portions thereof which may degrade the performance of the MTJ component, ensuring reliability of the MTJ component.