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(71) Applicant: **NANYANG TECHNOLOGICAL
UNIVERSITY** [SG/SG]; 50 Nanyang Avenue, Singapore
639798 (SG).

(72) Inventors: **LIM, Chu Keong Gerard Joseph**; c/o
Nanyang Technological University, 50 Nanyang Avenue,
Singapore 639798 (SG). **MURAPAKA, Chandrasekhar**;
c/o Nanyang Technological University, 50 Nanyang Ave-
nue, Singapore 639798 (SG). **LEW, Wen Siang**; c/o
Nanyang Technological University, 50 Nanyang Avenue,
Singapore 639798 (SG).

(74) Agent: **MCLAUGHLIN, Michael Gerard et al.**; #14-01,
112 Robinson Road, Singapore 068902 (SG).

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LING THE MAGNETIC LOGIC DEVICE AND THE CIRCUIT

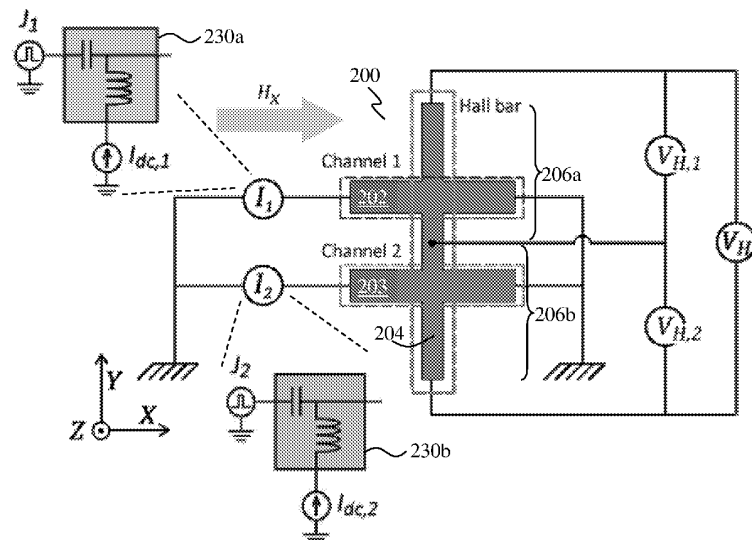


FIG. 2A

(57) Abstract: A magnetic logic device having two magnetic elements and a conductive element coupled to the two magnetic elements and arranged at least substantially perpendicular to the magnetic elements, wherein the device is configured, for each magnetic element, to have a magnetisation state with a perpendicular easy axis, and to switch the magnetisation state in response to a spin current generated in the magnetic element in response to a write current applied to the magnetic element, and configured to generate, as an output, a Hall voltage across the conductive element in response to a respective read current applied to each magnetic element, wherein a magnitude of the Hall voltage is variable, depending on a direction of the magnetisation state of each magnetic element and a direction of the respective read current applied to each magnetic element, for the device to provide outputs corresponding to one of a plurality of logical operations.

[Continued on next page]

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