Application of AMR sensors to vehicle detection

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Abstract: A vehicle detector with an anisotropic magnetoresistive (AMR) sensor was developed. The vehicle detector consisted of a three-axis AMR sensor and related signal processing circuit. When a vehicle was moving over the detector, the surrounding magnetic field changed due to vehicle disturbance, and the output of the three-axis AMR sensor changed accordingly. Whether a vehicle was present or not could be judged based on the AMR sensor's output. The detector's characteristic was tested. When the vehicle being detected was moving over the detector along different directions (south-north, east-west), the output changes were different. The results show that this detector can realize the function of vehicle detection.
Author Keywords: AMR sensor; Geomagnetic field; Magnetic resistance; Vehicle detection

Year: 2006
Source title: Beijing Keji Daxue Xuebao/Journal of University of Science and Technology Beijing
Volume: 28
Issue: 6
Page : 587-590
Cited by: 2
Link: Scorpus Link
Document Type: Article
Source: Scopus
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