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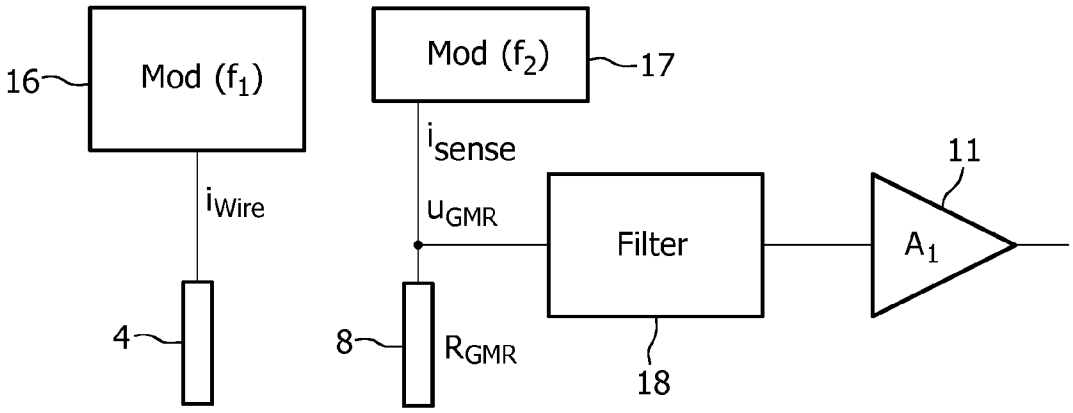
(54) Title: MAGNETORESISTIVE NANOPARTICLE SENSOR



(57) Abstract: A magnetic sensor device is suggested. The magnetic sensor device comprises at least one magnetic field generator, a magnetic sensor element (8), means (17) for supplying a frequency modulated sense current to the magnetic sensor element (8). A rejection means (18) is arranged in the signal path between the magnetic sensor element (8) and an amplifier (11). The rejection means (18) is apt for rejecting a signal component at the modulation frequency. The rejection means (18) allows reducing the required dynamic range of the amplifier (11) significantly because a large part of the sensed signal carrying no measurement information is not transmitted to the amplifier (11).

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. G01N15/06 G01N33/543 G01N35/00 G01R33/09 G01R33/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G01N G01R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BASELT D R ET AL: "A biosensor based on magnetoresistance technology" BIOSENSORS & BIOELECTRONICS, ELSEVIER SCIENCE PUBLISHERS, BARKING, GB, vol. 13, no. 7-8, 3 June 1998 (1998-06-03), pages 731-739, XP002285269 ISSN: 0956-5663 page 735, right-hand column, last paragraph - page 737, left-hand column, paragraph 1; figure 8	1-5
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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
10 May 2007	21/05/2007

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	BERGADO COLINA, J

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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X	LI GUANXIONG ET AL: "Detection of single micron-sized magnetic bead and magnetic nanoparticles using spin valve sensors for biological applications" JOURNAL OF APPLIED PHYSICS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 93, no. 10, 15 May 2003 (2003-05-15), pages 7557-7559, XP012058215 ISSN: 0021-8979 page 7558; figure 2	1-5
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INTERNATIONAL SEARCH REPORT

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