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(54) Title: ATOMIC MAGNETOMETER SENSOR ARRAY MAGNETOENCEPHALOGRAPH SYSTEMS AND METHODS

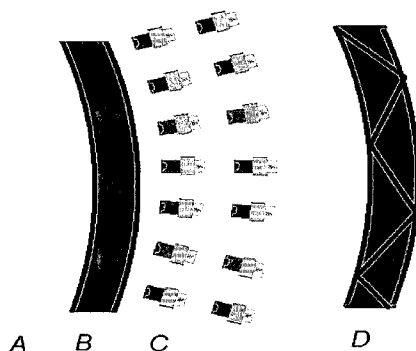


FIG. 1A

(57) Abstract: Devices disclosed according to various embodiments use one or more arrays of atomic magnetometers to detect biologically derived magnetic fields. The disclosed devices and methods relate to application of utilization of a magnetic sensor with unique properties requiring changes in design, allowing new functions, and requiring alternative analysis methodologies. Various embodiments are also directed to methods for obtaining and processing biological magnetic signals. These methods may take advantage of the unique spatial arrangement of the atomic magnetometers and the capacity sensors to be used in either a scalar or a vector mode. Various embodiments have advantages over current magnetometer arrays for the purpose of detecting biological magnetic fields. Such advantages may include, for example: smaller size, lower power consumption, no necessity for cryogenic cooling, potential wafer-level fabrication, and/or the potential of better localization biological signals. In addition, various embodiments may allow increased target or subject mobility.



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C. DOCUMENTS CONSIDERED TO BE RELEVANT				
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.				
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer <p style="text-align: center;">Dydenko, Igor</p>			

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