METHOD AND APPARATUS FOR CONTROL OF NON-INVASIVE PARAMETER MEASUREMENTS

Provide transducer adapted for determining pressure

Observe transducer pressure at the blood vessel to provide sampling of pressure signals

Achieve optimal or near-optimal state of vessel compression

Vary compression applied to the blood vessel over time

Observe effects of modulation on pressure values

Apply corrections in levels of compression applied to blood vessel based on observed effects of modulation sequence

Abstract: Improved methods and apparatus for non-invasively assessing one or more parameters associated with fluidic systems such as the circulatory system of a living organism. In a first aspect, an improved method of continuously measuring pressure from a compressible vessel is disclosed, wherein a substantially optimal level of compression for the vessel is achieved and maintained using perturbations (e.g., modulation) of the compression level of the vessel. In one exemplary embodiment, the modulation is conducted according to a pseudo-random binary sequence (PRBS). In a second aspect, an improved apparatus for determining the blood pressure of a living subject is disclosed, the apparatus generally comprising a pressure sensor and associated processor with a computer program defining a plurality of operating states related to the sensed pressure data. Methods for pressure waveform correction and reacquisition, as well as treatment using the present invention, are also disclosed.
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : A61B 5/02
US CL : 600/485, 500
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)
U.S. : 600/485,490-495,500-504

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 practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tbody>
<tr>
<td>X</td>
<td>US 6,068,601 A (MIYAZAKI et al) 30 May 2000 (30.05.2000), entire document.</td>
<td>1, 5, 8, 14, 17, 34</td>
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<td>2-4, 6, 7, 9-13, 15, 16, 18-33, 35-46</td>
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<tr>
<td>X, E</td>
<td>US 6,612,993 B2 (NARIMATSU) 2 September 2003 (02.09.2003), entire document.</td>
<td>1, 5, 10, 14, 23, 24, 34, 35</td>
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<td>A</td>
<td>US 5,332,069 A (GALLANT et al) 21 June 1994 (21.06.1994) entire reference.</td>
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Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search

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