Abstract: The Larmor frequency for an in situ nuclear magnetic resonance (NMR) tool is determined and used to acquire NMR data. An NMR tool is provided and placed in situ, for example, in a wellbore. An initial estimate of the Larmor frequency for the in situ NMR tool is made and NMR data are acquired using the in situ NMR tool. A spectral analysis is performed on the NMR data, or optionally, the NMR data are digitized and a discrete Fourier transform (DFT) is performed on the digitized NMR data. The modal frequency of the spectral analysis or DFT is determined, and the Larmor frequency for the in situ NMR tool is determined using the modal frequency. The NMR tool is modified to transmit at the determined Larmor frequency and then used to acquire further NMR data.


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A. CLASSIFICATION OF SUBJECT MATTER

G01V 3/32(2006.01)i, G01V 3/34(2006.01)i, E21B 47/00(2006.01)i

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)
G01V 3/32; G01V 3/00; G06F 7/50; H04B 1/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic database consulted during the international search (name of database and, where practical, search terms used)
eKOMPASS(KIPO internal) & Keywords: wellbore, NMR, Larmor frequency

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<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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<td>A</td>
<td>US 5451873 A (ROBERT FREEDMAN et al.) 19 September 1995 See figures 1, 6 and corresponding detailed description. Document cited by the applicant in the application.</td>
<td>1-20</td>
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<td>A</td>
<td>US 7006814 B2 (ERNESTO BOREN et al.) 11 April 2006 See column 5, lines 28-44; column 9, lines 17-38 and claim 1. Document cited by the applicant in the application.</td>
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<td>US 7215119 B2 (GUNNAR KRUGER et al.) 08 May 2007 See column 5, lines 19-42 and figure 2.</td>
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Date of mailing of the international search report

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YANG, Jeong Rok

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