Title: ELECTROCHEMICAL NOISE AS A LOCALIZED CORROSION INDICATOR

FIG. 1B

Abstract: Systems and methods are presented for a method for measuring or monitoring localized corrosion in which an electrochemical noise (ECN) signal is sensed and filtered by a high-pass or band-pass filter to remove low frequency components not related to localized corrosion and a standard deviation of the filtered signal is computed and scaled to provide a localized corrosion value.
### A. CLASSIFICATION OF SUBJECT MATTER

**IPC(8) -** G01R 27/08; G01N 27/26 (2010.01)

**USPC -** 324/700; 204/404; 205/775.5

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)

IPC: G01R 27/08; G01N 27/26 (2010.01); USPC: 324/700; 204/404; 205/775.5

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

IPC: G01R 27/08; G01N 27/26 (2010.01); USPC: 324/700; 204/404; 205/775.5 (keyword delimited) Patents and NPL

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWest (US Pat, PgPub, EPO, JPO: classification, keyword), GoogleScholar; search terms used: measure, monitor, sense, corrosion, corrode, electrolyte, electrode, filter, filtration, low, frequency, high, band, pass, filter, electrochemical, noise, standard deviation, analog, switch

### 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>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 4,575,678 A (HLADKY) 11 March 1986 (11.03.1988), col 1, in 6-43; col 3, in 7-32; col 4, in 3-10; col 4, in 52-61; col 6, in 51-61; col 8, in 43 to col 10, In 17</td>
<td>1-3, 8, 9, 11, 13, 14, 18-20</td>
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<td>Y</td>
<td>US 7,239,156 B1 (HLADKY et al.) 03 July 2007 (03.07.2007), col 6-20; especially col 2, in 8-57; col 3, in 46-56; col 4, in 1-22; col 4, in 66 to col 5, In 3; col 7, in 66 to col 8; In 24; col 8, in 4-19</td>
<td>4-7, 10, 12, 15-17</td>
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<tr>
<td>Y</td>
<td>US 7,282,928 B1 (HLADKY et al.) 16 October 2007 (16.10.2007), col 7-22</td>
<td>4-7, 10, 12, 15-17</td>
</tr>
<tr>
<td>Y</td>
<td>US 7,265,559 B1 (HLADKY et al.) 04 September 2007 (04.09.2007), col 7-22</td>
<td>1-20</td>
</tr>
<tr>
<td>Y</td>
<td>US 6,079,276 A (FRICK et al.) 27 June 2000 (27.06.2000), col 2-8</td>
<td>1-20</td>
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Further documents are listed in the continuation of Box C.

### Date of the actual completion of the international search

13 January 2011 (13.01.2011)

### Date of mailing of the international search report

25 January 2011 (25 JAN 2011)

### Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
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