Title: REDUCING OXIDES IN A FLUID-BASED SWITCH

Abstract: A fluid-based switch and method for producing the same are disclosed. In one embodiment, the switch comprises first (102) and second mated (104) substrates defining therebetween at least portions of a number of cavities (106, 108, 110), a plurality of electrodes (612, 614, 616) exposed within one or more of the cavities, a switching fluid (618), held within one or more of the cavities, that serves to open and close at least a pair of the plurality of electrodes in response to forces that are applied to the switching fluid, a reducing material contacting at least a portion of the switching fluid, the reducing material to react with oxides on the switching fluid, and an actuating fluid (620), held within one or more of the cavities, that applies the forces to said switching fluid.
Declaration under Rule 4.17:


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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/00984

A. CLASSIFICATION OF SUBJECT MATTER
   IPC(7) : H01H 29/00
   US Cl. : 200/182
   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)

   Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
      none

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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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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<tbody>
<tr>
<td>A</td>
<td>US 3,955,059 A (GRAF) 04 May 1976 (04.05.1976), see entire document</td>
<td>1-10</td>
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<td>A</td>
<td>US 4,158,118 A (GRAF) 12 June 1979 (12.06.1979), see entire document</td>
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<td>A</td>
<td>US 6,323,447 B1 (KONDOH et al) 27 November 2001 (27.11.2001), see entire document</td>
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<td>A,P</td>
<td>US 6,646,527 B1 (DOVE et al) 11 November 2003 (11.11.2003), see entire document</td>
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Further documents are listed in the continuation of Box C. See patent family annex.

Date of the actual completion of the international search: 28 October 2004 (28.10.2004)

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Form PCT/ISA/210 (second sheet) (January 2004)
Continuation of Item 4 of the first sheet:
The title is too long.

REDUCING OXIDES IN A FLUID-BASED SWITCH

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<tr>
<td>search terms: LIMMS, liquid metal, ducts, channels, substrates, fluid, conductive, liquid metal, reducing agents, oxides</td>
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