Abstract: This invention relates generally to a composite fabric and a method and apparatus for manufacturing a composite fabric, especially suitable for apparel application, upholstery, bed and bath applications. In an embodiment, a composite fabric comprises a base fabric made by weaving or knitting. A plurality of gaps is disposed in-between the fibers of the yarns of the base fabric. A plurality of functional fibers is entangled in the gaps followed by swelling of the fibers, with predetermined retention to the yarns of the base fabric.

FIG. 1
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - D03D 9/00 (2008.04)
USPC - 442/1
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 D03D 9/00 (2008.04); USPC 442/1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
442/3-6, 4, 20, 51, 141, 421, 423, 182, 184, 302 -- 26/142, 143, 155, 156, 158, 184 -- 139/387A, 387R, 384A, 386, 389-390, 420R

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PGPB, USPTO, EPAB, JPAB, USPTO, Espacenet, Google Patents, Google Scholar — (WATER NEEDLS OR "WATER-NEEDLING" OR (WATER NEAR20 (FLUIDJETS OR FLUID JETS OR "FLUID-JET" OR "FLUID-JETTING" OR HYDRODYNAMIC NEEDLS

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>
</table>

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
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Date of the actual completion of the international search
01 October 2008 (01.10.2008)

Date of mailing of the international search report
23 OCT 2008

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Form PCT/ISA/210 (second sheet) (April 2007)