Title: FIRE RETARDANT AND HEAT RESISTANT YARNS AND FABRICS INCORPORATING METALLIC OR OTHER HIGH STRENGTH FILAMENTS

Abstract: Fire retardant and heat resistant yarns, fabrics, and other fibrous blends (10) incorporate one or more fire retardant and heat resistant strands (14) comprising oxidized polyacrylonitrile and one or more strengthening filaments such as metallic filaments (e.g., stainless steel), high strength ceramic filaments, or high strength polymer filaments. Such yarns, fabrics, and other fibrous blends have a superior tensile strength, cut resistance, abrasion resistance, LOI, TPP and continuous operating temperature compared to conventional fire retardant fabrics. The yarns, fabrics, and other fibrous blends are also more soft, supple, breathable and moisture absorbent and are therefore more comfortable to wear, compared to conventional fire retardant fabrics. The inventive yarns may be woven, knitted or otherwise assembled into a desired fabric or other article of manufacture.
INTERNATIONAL SEARCH REPORT

PCT/US03/12215

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : D02G 3/00; D02G 3/36
US CL : 428/364; 57/210
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. : 428/364; 57/210; 428/377, 379, 389; 57/212, 2224

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>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>US 5,632,137 A (KOLMES et al) 27 May 1997, see abstract, column 2, lines 52-60.</td>
<td>16, 26-32, 34-40, 48-49</td>
</tr>
</tbody>
</table>

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
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  - "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
  - "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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Date of the actual completion of the international search
28 June 2004 (28.06.2004)

Date of mailing of the international search report
15 JUL 2004

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer
Jill M. Gray
Telephone No. 571-272-1700