Glasy Carbon Coated Carbon Foam

A glassy carbon coated carbon foam material is formed by coating carbon foam with a glassy carbon layer. Carbon foam may be produced by carbonizing a phenolic or polyurethane foam at high temperatures in an inert atmosphere. The carbon foam is then machined to a desired shape and treated with a fine carbon or graphite powder to the surface. Subsequently a resin is applied to the surface of the carbon foam, and the coated carbon foam block is fired to carbonize the resin coating into a glassy carbon coating. The firing and coating are repeated until the desired coating thickness and surface properties are achieved.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC (B) - C01B 31/00 (2007.01)
USPC - 264/29.1
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 (B) - C01B 31/00 (2007.01)
USPC - 264/29.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC 264; 423

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PUBWEST (DB=PGP, USPT, USOC, EPAB, JPAB) Terms: carbon foam vitreous glassy coating filler sealant seal carbonize pyrolyze machining aspect ratio

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 3,810,780 A (ARDARY et al.) 14 May 1974 (14.05.1974), entire document, especially col 2,</td>
<td>1, 3, 5-8, 12, 14-19 and</td>
</tr>
<tr>
<td></td>
<td>In 40-87; col 2, In 53-57; col 3, In 1-4; col 3, In 12-13; col 3, In 18-21; col 3, In 26-31; col</td>
<td>22-25</td>
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<td>3, In 44-49; col 3, In 55-58; col 4, In 20-21</td>
<td>2, 4, 9-11, 13 and 20-21</td>
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<td></td>
<td>col 11, In 30-31; col 12, In 1-30</td>
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<tr>
<td></td>
<td>paragraph 16</td>
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<tr>
<td>Y</td>
<td>US 2005/0003196 A1 (JOSEPH et al.) 06 January 2005 (06.01.2005), entire document, especially</td>
<td>20</td>
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<tr>
<td></td>
<td>paragraphs 47-49</td>
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<tr>
<td>Y</td>
<td>US 5,945,084 A (DROEGE) 31 August 1999 (31.08.1999), entire document, especially col 2, In</td>
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<td>20-37; col 6, In 64-67; col 13, In 22-26</td>
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* Further documents are listed in the continuation of Box C.

A Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"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

"&" document member of the same patent family

Date of the actual completion of the international search
08 August 2007 (08.08.2007)

Date of mailing of the international search report
28 SEP 2007

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