Abstract: A process for welding a first polymeric object (102) to second polymeric object (104) using laser radiation, wherein the first polymeric object is relatively transparent to the laser radiation and the second object is relatively opaque to the laser radiation, the first and the second objects each presenting a faying surface, the first object presenting an impinging surface (116), opposite the faying surface thereof, the process comprising the steps of: 1. bringing the faying surfaces of the first and second objects into physical contact so as to form a juncture there between and 2. irradiating the first and second objects with the laser radiation such that the laser radiation impinges the impinging surface (116), passes through the first object and irradiates the faying surface of the second object, causing the first and second objects (102,104) to be welded at the juncture of the faying surfaces, wherein the second polymeric object is formed from a thermoplastic polymer composition comprising a material having voids.
**A. CLASSIFICATION OF SUBJECT MATTER**

INV. B29C65/16

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)

B29C

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 practical, search terms used)

EPO-Internal, WPI Data

**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>
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<tbody>
<tr>
<td>Y</td>
<td>WO 01/26495 A (GORE ENTERPRISE HOLDINGS INC [US]) 19 April 2001 (2001-04-19) page 5, line 32 - page 6, line 5</td>
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<td>GB 2 244 490 A (INST FRANCAIS DU PETROL [FR]) 4 December 1991 (1991-12-04) page 1, lines 12-21 page 4, line 30 - page 5, line 5</td>
<td>3,9,10, 17</td>
</tr>
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</table>

**D. Further documents are listed in the continuation of Box C**

**X** See patent family annex

**I** 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

**T** 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

**T** 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

**A** member of the same patent family

Date of the actual completion of the international search

1 February 2007

Date of mailing of the international search report

10/05/2007

Name and mailing address of the ISA/

European Patent Office, P B 5818 Patentlaan 2

NL- 2280 HV Rijswijk

Tel (+31-70) 340-2040 Tx 31 651 epo nl

Fax (+31-70) 340-3016

Authorized officer

Schneider, Dominik
**INTERNATIONAL SEARCH REPORT**

**Box II**  
Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. [ ] Claims Nos.:  
   because they relate to subject matter not required to be searched by this Authority, namely:

2. [ ] Claims Nos.:  
   because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. [ ] Claims Nos.:  
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box III**  
Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

|   | see additional sheet |

|   | As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims. |

|   | As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee. |

|   | As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.: |

|   | No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: |

|   | 1-3, 9, 10, 13-17, 20, 21 |

**Remark on Protest**  
[ ] The additional search fees were accompanied by the applicant's protest.  
[ ] No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (January 2004)
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3, 9, 10, 13-17, 20, 21
   Inorganic materials in laser welded compositions

2. claims: 4-6, 11, 12, 18, 19
   Specifications for laser welded polymers

3. claims: 7, 8
   Void forms and sizes
## INTERNATIONAL SEARCH REPORT

### Information on patent family members

<table>
<thead>
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