CONFORMAL COATINGS FOR MICRO-OPTICAL ELEMENTS

A micro-optical element is produced through vapor deposition techniques, such as atomic layer deposition. An optical structure (90) having a surface with uneven structures is exposed one or more precursor vapors to create a self-limiting film growth on the surface of the optical structure. The film thickness may be increased and controlled by subsequent exposures. The resulting film (92) conforms to surface structures having varying complex dimensions.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B32B 1/00; C23C 16/00; C23C 16/30
US CL : 428/161, 162, 164; 427/162, 585, 248.1; 255.15
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. : 428/161, 162, 164; 427/162, 585, 248.1; 255.15

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 2002/0047175 A1 (TANI et al.) 25 APRIL 2002 (25.04.2002), Figure 5D, elements 122 and 121, sections 0058 and 0087.</td>
<td>1-102</td>
</tr>
</tbody>
</table>

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

Date of the actual completion of the international search: 27 October 2004 (27.10.2004)

Date of mailing of the international search report: 17 NOV 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

William P. Watkins III
Paralegal Specialist

Telephone No. 703-308-0651

Form PCT/ISA/210 (second sheet) (January 2004)