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[Continued on next page]

(54) Title: THERMALLY SWITCHED OPTICAL FILTER INCORPORATING A GUEST-HOST ARCHITECTURE

(57) Abstract: Thermochromic filters (200) are constructed using absorptive, reflective, or fluorescent dyes, molecules, polymers, particles, rods, or other orientation-dependent colorants (201) that have their orientation, order, or director influenced by carrier materials (202), which are themselves influenced by temperature. These order-influencing carrier materials (202) include thermotropic liquid crystals, which provide orientation to dyes and polymers in a guest-host system in the liquid-crystalline state at lower temperatures, but do not provide such order in the isotropic state at higher temperatures. The varying degree to which the absorptive, reflective, or fluorescent particles interact with light in the two states can be exploited to make many varieties of thermochromic filters. Thermochromic filters can control the flow of light and radiant heat through selective reflection, transmission, absorption, and/or re-emission. The filters have particular application in passive or active light-regulating and temperature-regulating films, materials, and devices, and particularly as construction materials and building and vehicle surfaces.
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A. CLASSIFICATION OF SUBJECT MATTER

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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)
G02B 5/20; G02F 1/133; G02F 1/19

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: guest/host material, thermally switch, thermotropic

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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[ ] Further documents are listed in the continuation of Box C. [x] See patent family annex.

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Date of the actual completion of the international search
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Date of mailing of the international search report
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<td>US 2009-0015902 A1</td>
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