DICHROIC LIGHT POLARIZERS

Inventors: Ir G Khan, Yuri A. Bobrov, Leonid Y. Ignatov, Elena V. Shishkina, all of Moscow, Russian Federation; Pavel I Lazarev, Menlo Park, Calif.; Alexey V. Kurbatov, Moscow, Russian Federation


PCT Filing:
- Applicant's Name: Khan et al.
- Inventors: Ir G Khan, Yuri A. Bobrov, Leonid Y. Ignatov, Elena V. Shishkina, all of Moscow, Russian Federation; Pavel I Lazarev, Menlo Park, Calif.; Alexey V. Kurbatov, Moscow, Russian Federation
- PCT No.: PCT/US95/14413
- § 371 Date: Aug. 4, 1997
- § 102(e) Date: Aug. 4, 1997
- PCT Pub. No.: WO96/16015
- PCT Pub. Date: May 30, 1996

Foreign Application Priority Data
- Nov. 18, 1994 [RU] Russian Federation 94041721
- Oct. 6, 1995 [RU] Russian Federation 95117377
- Oct. 6, 1995 [RU] Russian Federation 95117403

International Classification:
- Int. Cl. 7 G02B 5/30; C07D 221/22; C09B 44/10; C07C 245/00
- U.S. Cl. 359/491; 359/492; 546/35; 546/37; 534/607; 534/611; 534/615; 534/818; 534/781; 534/791; 534/825; 534/827

Field of Search:
- 359/491, 492; 546/35, 37; 534/607, 611, 615, 818, 827; 781, 791, 825

References Cited

U.S. PATENT DOCUMENTS
- 4,133,775 1/1979 Bloom ........................................ 252/300
- 4,440,541 4/1984 Berke ........................................ 8/489

FOREIGN PATENT DOCUMENTS
- 0 557 121 8/1993 European Pat. Off. .................. C08F 2/00
- WO 96/16015 5/1996 WIPO ................................. C07C 50/18

Primary Examiner—Johann Richter
Assistant Examiner—Joseph Murray
Attorney, Agent, or Firm—Skjerven, MacPherson, Franklin and Friel

ABSTRACT

The present invention provides dyes of formula I-XXXIV, described in detail below, and dichroic light polarizers based on the dyes. In the dichroic light polarizers of this invention the dye molecules are aggregated into particles oriented in a predetermined direction on a surface of a substrate to enable the dye to polarize light transmitted through the dye. In another embodiment, a dichroic light polarizer includes a molecularly oriented layer of an organic dye on a surface of a substrate. The layer has a non-periodic arrangement of different polarizing elements. Each of the polarizing elements have differing orientations of the polarization vector in the substrate plane and/or differing colors. The dichroic light polarizer may contain one or more additional dye layers and may have a transparent layer intermediate to the dye layer.

21 Claims, 6 Drawing Sheets