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(54) **LIQUID CRYSTAL-POLYMER COMPOSITE MATERIAL**

(71) Applicant: **DIC CORPORATION**, Tokyo (JP)

(72) Inventors: **Yoshinori Iwashita**, Kita-adachi-gun (JP); **Hidenari Akiyama**, Kita-adachi-gun (JP); **Isa Nishiyama**, Kita-adachi-gun (JP)

(73) Assignee: **DIC CORPORATION**, Tokyo (JP)

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(58) **Field of Classification Search**
None
See application file for complete search history.

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Primary Examiner — Chanceity Robinson
(74) *Attorney, Agent, or Firm* — Westterman, Hattori, Daniels & Adrian, LLP

(57) **ABSTRACT**

There are provided a liquid crystal-polymer composite material including a nematic liquid crystal composition containing at least two types of achiral liquid crystal compounds, at least one type of chiral compound, and a polymer formed by polymerization of at least one type of polymerizable compound; a method for manufacturing a liquid crystal-polymer composite material in which polymerization of a polymerizable compound-containing liquid crystal composition including a nematic liquid crystal composition containing at least two types of achiral liquid crystal compounds, at least one type of chiral compound, and at least one type of polymerizable compound is started for curing in a temperature range in which the polymerizable compound-containing liquid crystal composition exhibits a blue phase III; and a liquid crystal optical element which uses the liquid crystal-polymer composite material.

15 Claims, No Drawings