

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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VIZIO, INC.,  
Petitioner

v.

NICHIA CORPORATION,  
Patent Owner

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Case IPR2017-00552  
Patent 7,901,959 B2

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Before BRIAN J. McNAMARA, STACEY G. WHITE, and  
NABEEL U. KHAN, *Administrative Patent Judges*.

KHAN, *Administrative Patent Judge*.

DECISION  
Denying Institution of *Inter Partes* Review  
*37 C.F.R. § 42.108*

## INTRODUCTION

### *A. Background*

Vizio, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) to institute an *inter partes* review of claims 1, 3–5, 7–9, 11–13, and 15–20 (the “challenged claims”) of U.S. Patent No. 7,901,959 (Exhibit 1001, the “’959 Patent”). Nichia Corporation (“Patent Owner”) timely filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). We have authority under 37 C.F.R. § 42.4(a) and 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Having considered the arguments and the associated evidence presented in the Petition and the Preliminary Response, for the reasons described below, we deny Petitioner’s request to institute *inter partes* review of claims 1, 3–5, 7–9, 11–13, and 15–20.

### *B. Related Proceedings*

Petitioner states the ’959 Patent is asserted in *Nichia Corp. v. VIZIO, Inc.*, C.A. No. 8:16-cv-545 (C.D. Cal.) (“District Court Case”). Petitioner also states that U.S. Patent Nos. 5,998,925 and 7,531,960, which are in the same family as the ’959 Patent, are asserted in *Nichia Corp. v. Everlight Americas, Inc.*, Case No 12-11758 (E.D. Mich.). Pet. 5. In addition, Petitioner has filed, concurrent with the present Petition, petitions for *inter partes* review of U.S. Patent Nos. 7,915,631 (IPR2017-00551); 7,855,092 (IPR2017-00556); and 8,309,375 (IPR2017-00558); which are in the same family as the ’959 Patent.

*C. The '959 Patent*

The '959 Patent generally relates to light emitting diodes used in devices such as LED displays, back light sources, traffic signals, illuminating switches and indicators. More particularly, the '959 Patent relates to light emitting diodes containing a light emitting component and a phosphor, where the phosphor absorbs part of the light emitted from the light emitting component at one wavelength and emits light at a different wavelength for the purpose of making a light source for white light. *See* Ex. 1001 Abstract; 1:25–32.

The '959 Patent explains that light emitting diodes previously have been used to emit white light by arranging red, blue, and green light emitting components closely together and mixing the light emitted by them. *Id.* at 1:48–54. This arrangement has several drawbacks stemming from variations in tone, luminance, power requirements, and other factors of the various light emitting components. *Id.* at 1:54–62. To address the problems caused by variations in different components, some light emitting diodes use only one kind of light emitting component that emits light of one color (such as blue light), and a fluorescent material that absorbs some of this light and emits light of a different color (such as yellow). When the light emitted by the light emitting component is mixed with the light emitted by the fluorescent material, the result is white light. *Id.* at 2:23–29.

The '959 Patent further explains that exposure to high intensity light and high temperatures can deteriorate the fluorescent material, leading to color tone deviation, darkening of the fluorescent material, and increasing absorption of light. *Id.* at 2:30–59. Additionally, exposure to moisture from the outside or during the production process can accelerate the deterioration

of the fluorescent material. *Id.* at 2:60–64. Further, the '959 Patent explains that a fluorescent material that absorbs light of a short wavelength and emits light of a long wavelength has higher efficiency than a fluorescent material that absorbs light of a long wavelength and emits light of a short wavelength. Thus, a light emitting component that emits light in the wavelength range of 400 to 530 nm and a phosphor with a main emission wavelength that is longer than the main emission peak of the light emitting component is preferable. *Id.* at 4:51–56; 6:27–41.

To accomplish the goals and address the concerns described above, embodiments of the '959 Patent use a light emitting component that can emit light with high luminance at the appropriate wavelength range, and a fluorescent material with excellent resistance to high intensity light that can absorb part of the light emitted by the light emitting component and emit light at a longer wavelength. One embodiment of the light emitting diode of the '959 Patent is illustrated in Figure 1, reproduced below with annotations indicating the elements corresponding to some of the features discussed herein.

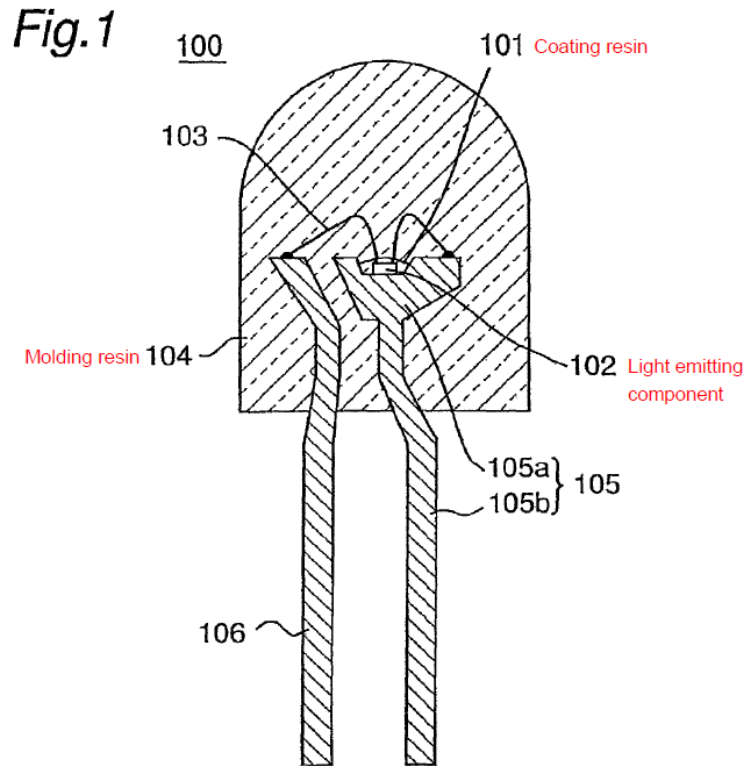


Figure 1, with annotations showing a lead type light emitting diode according to one embodiment of the '959 Patent.

The embodiment depicted in Figure 1 employs an LED chip mounted in a cup of the light emitting diode. *Id.* at 5:40–42. The LED chip comprises a nitride compound semiconductor capable of emitting blue light of short wavelength. *Id.* at 5:49–50; 9:31–37. The cup is filled with a transparent coating material which is then covered by a molding material. *Id.* at 5:43–46. The coating material and molding material may be different materials, or they may be made of the same material. *Id.* at 17:4–11. The fluorescent material may be contained in the coating material or molding material or both. *Id.* at 15:15–20; 16:64–17:4. To provide resistance to high light intensity and heat this fluorescent material comprises a garnet phosphor activated with cerium with at least one element selected from a group

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