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(19) **United States**(12) **Patent Application Publication**
NIWA et al.(10) **Pub. No.: US 2023/0231077 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **SEMICONDUCTOR LIGHT-EMITTING
ELEMENT AND METHOD OF
MANUFACTURING SEMICONDUCTOR
LIGHT-EMITTING ELEMENT**(52) **U.S. Cl.**CPC *H01L 33/32* (2013.01); *H01L 33/382*
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(57)

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A semiconductor light-emitting element includes: an n-type semiconductor layer made of an n-type AlGaIn-based semiconductor material; an active layer provided on a first upper surface of the n-type semiconductor layer and made of an AlGaIn-based semiconductor material; a p-type semiconductor layer provided on the active layer; an n-side contact electrode that includes a Ti layer in contact with a second upper surface of the n-type semiconductor layer, an Al layer provided on the Ti layer, and a nitride layer that covers the Al layer. The nitride layer includes a first portion made of TiN and a second portion containing TiAlN.

