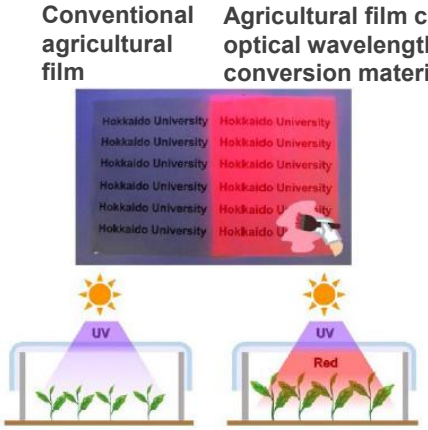
Hokkaido Univ. Technology

Optical wavelength conversion transparent film

A coated luminous material that absorbs ultraviolet light and emits red light



Overview

Complexes composed of the rare earth element Eu (europium) and organic molecules are materials that absorb only ultraviolet light and emit red light with high brightness and color purity, and are being developed for use in displays, lighting, and sensors. Conventional rare earth complexes have low solubility and are prone to crystallization, making them difficult to fabricate transparent molded objects or use as films directly applied to plates, etc.

The present invention realizes a transparent, **coatable optical wavelength conversion film** by mixing a clarifying agent that reduces crystallinity into the rare earth complex. Furthermore, because it **absorbs only ultraviolet light and transmits visible light**, it can be used in applications such as agricultural films to promote plant growth.

Product Application

- Agricultural Film
- Security
- Smart Window
- Optical wavelength conversion film for lenses, etc.

IP Data

IP No.	:	JP7621652,US12291545, CN113727850
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Features・Outstandings

Plant growth test (season: winter)

✓ Larch weighs 1.4 times as much

✓ Swiss chard (vegetable) has similar effects

S. Shoji*, **Y. Kitagawa** et al., ***Sci. Rep.*** 12,17155 (2022).
Featured in the Yomiuri Shimbun, Yahoo! News, etc. **Altimetric Score : 163**

Related Works

[1] Y. Kitagawa. et al., Scientific Reports, vol.12, 17155 (2022)
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