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# LONG LIFETIME VISIBLE LIGHT LUMINOPHORES

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## Commercialization opportunities

- Licensing agreement
- Transfer of ownership
- Spin off

## IP Status

The invention was submitted for patenting according to Polish (P.400441) procedures.

## Implementation progress

**TRL 4**
Technology validated in laboratory conditions

As both prices of materials containing ions of rare-earth metals and the difficulty of obtaining them in industrial quantities increase, presence of costly lanthanide ions introduced as electron traps becomes the basic disadvantage of long-life broadband light-emitting materials.

Consequently, lighting industry, particularly companies involved in production of screens, illumination and high-visibility signs and markings are seeking solutions which would allow for these additional ions to be replaced with cheaper alternatives, such as transition metal ions. Such luminophores (phosphors) would have to be inexpensive, long-lasting and weather resistant, if they were to have practical applications (for example in high-visibility horizontal markings on roads and highways).

Novell technology presented herein allows for the synthesis of a new, long-life phosphor, which, depending on excitation wavelength, emits green or orange light within the visible spectrum. Luminophores enhanced with europium ions exhibit long-life emission upon excitation with UV, near UV or visible light.

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