39-8 ナノシートから構築された希土類イオン含有層状化合物の発光特性

(Photoluminescence Properties of Titanate Layered Oxides Intercalated with Rare Earth Ions)

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Some interesting photoluminescence properties of the titanate layered oxide intercalated with hydrated Eu^{3+} have been demonstrated. The emission intensity of Eu^{3+} immediately decreased with time and then constant after illumination of the lights with wavelength higher than bandgap energy of the host TiO layer. This phenomenon will be based on the decrease of the energy transfer from the host TiO to Eu^{3+} due to a destruction of the water bridge in the hydration between TiO host layer and Eu^{3+} to form relatively free hydrated Eu^{3+} ion in the interlayer. The excitation spectrum which was measured under 614 nm emission, drastically changed with the wavelength of the illuminated lights. The intensity in the excitation spectrum decreased in the same wave length as that of the illuminated light.

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