

## Lu<sub>2</sub>O<sub>3</sub>:Tb,Hf storage phosphor.

### Autorzy

Dagmara Kulesza  
Joanna Trojan-Piegza  
Eugeniusz Zych

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### Czasopismo

Radiation Measurements

### Numer woluminu

45

### Strony

490-492

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### Kolekcja

Naukowa

### Język

Angielski

### Typ publikacji

Artykuł

### Streszczenie

Lu<sub>2</sub>O<sub>3</sub>:Tb,Hf ceramics containing 0.1% of Tb and 0–1.5% of Hf were prepared in reducing atmosphere at 1700 °C and their thermoluminescence properties were systematically studied. For comparison Tb,Ca co-doped specimen was also fabricated and investigated. The Tb,Hf ceramics shows basically a single TL band located around 180 °C as found with heating rate of 15 °C/min. Ceramics singly doped with Tb show complex TL glow curves indicating the presence of traps of very different depths. On the other hand Tb,Ca co-doping is beneficial for the development of shallow traps with the main TL band around 70 °C. Hence, the aliovalent impurities, Ca<sup>2+</sup> and Hf<sup>4+</sup>, strongly influenced the traps structure in Lu<sub>2</sub>O<sub>3</sub>:Tb ceramics, each of them in its own specific way. Isothermal decay of Lu<sub>2</sub>O<sub>3</sub>:Tb,Hf at 185 °C was recorded and its shape suggest that multiple hole trapping occurs in the Lu<sub>2</sub>O<sub>3</sub>:Tb,Hf ceramics. Due to the different traps depths the Lu<sub>2</sub>O<sub>3</sub>:Tb,Hf ceramics possess properties typical for storage phosphors, while Lu<sub>2</sub>O<sub>3</sub>:Tb,Ca is a persistent luminescent material rather.

### Słowa kluczowe

Lu<sub>2</sub>O<sub>3</sub>, thermoluminescence, OSL, storage phosphor

### Adres publiczny

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