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[54] **SCINTILLATION MATERIAL ON THE BASE OF CESIUM IODIDE AND METHOD FOR ITS PREPARATION**

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[58] **Field of Search** ..... 252/301.4 H, 301.17; 117/940

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[57] **ABSTRACT**

A cesium iodide based scintillation material is obtained exhibiting a low afterglow and high radiation hardness; its preparation method is developed, too.

The cesium iodide based scintillation material doped by thallium iodide contains an additional admixture of compound having the general formula

$$Me_x\,(CO_3)_y,$$

where Me is a cationic admixture,

$$1 \leqq X \leqq 2,$$

$$1 \leqq Y \leqq 5,$$

This material has in its absorption spectrum a stretching vibration band of CO_3^{2-}-ion about 7 μm and a bending vibration band about 11.4 μm, the absorption coefficient of the latter being from $1.4 \cdot 10^{-3}$ to $2 \cdot 10^{-2}$ cm^{-1}.

Preparation method of this scintillation material comprises the raw material cesium iodide melting, adding of the activating thallium iodide dope, introduction of cesium carbonate ($3 \cdot 10^{-4}$ to $5 \cdot 10^{-3}$% by mass) and a sodium salt ($3 \cdot 10^{-4}$ to $7.5 \cdot 10^{-3}$% of Na by mass) into said raw material and/or the melt and a subsequent crystallization.

7 Claims, No Drawings