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P2.16: Development of Red/Infra-red Emitting Scintillators for an Alpha Dust Monitor

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We have development alpha dust monitor with a red or infrared emitting scintillators, and the scintillation properties were investigated for $\text{Ce:Y}_{1-x}\text{(Mg}_{x-2}\text{Al}_{5-2x}\text{Si}_x\text{O}_{12})$ ($x=0.0, 0.5, 2.0$) crystals were grown by the micro-pulling-down method. Ce-doped $\text{Y}_{1-x}\text{(Mg}_{2-x}\text{Al}_{2-x}\text{Si}_x\text{O}_{12})$ had an emission wavelength of 620 nm, and the red-shift of emission bands was observed for Mg and Si-admixed samples due to changing lattice constants compared to the Mg and Si free sample.

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