Research and development of ceramic scintillators applied to alpha-particle detection

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A technique has been developed to produce BaF_2, $CaF_2:Eu^{2+}$, ZnS and ZnO ceramic scintillators up to 70 mm in diameter and 5 mm thick. It was shown that the light output values and the maximum of emission spectra of ceramic scintillators are very close to those of the analogous single crystals. The light output values of BaF_2, $CaF_2:Eu^{2+}$, ZnS and ZnO ceramic scintillators were 16% 28%, 35% and 3%, respectively, relative to that of the CsI(Tl) crystal at 5.15 MeV alpha particles excitation

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