

SCINTILLATION MATERIALS – PRESENT AND FUTURE

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This is the review of the last trends in scintillator search and development of the technologies of their obtain.

Last decade reveal a lot of new both halide and oxide scintillation materials that possess with significantly better efficiency comparing to the conventional alkali halides and oxides (with extrinsic and extrinsic luminescence). At the same time no any new scintillators (except LaBr₃:Ca) are commercially available and the cost of new detectors look unreasonably high. This review is directed to description/explanation of:

- physical limits of the scintillation efficiency of alkali halide scintillators,
- explanation of the high efficiency of alkali earth halides,
- new trends in oxide scintillator improvement,
- technological problems related to the crystal growth and hygroscopicity of new Eu doped scintillators.

The goal of review is not only to explain current status of developments, problems and current status of this activity, but also the forecast and explanation of the R&D need for the short and medium term future.