

Development of flexible radiation detector based of nanomaterials

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Organic scintillators are widely used in nuclear and particle physics, as well as homeland security applications, due to their low cost and ease of fabrication. However, their application is limited by their low effective atomic number, reducing detection efficiency for high-energy X-rays and γ -rays. To improve this, studies have explored incorporating nanocrystals into organic scintillators. As nanocrystal size increases, the emission wavelength shifts from blue to red, and the high atomic number (Z) of nanocrystals enhances X-ray/ γ -ray absorption.

Flexible scintillators offer additional advantages by conforming to irregular surfaces, making them suitable for applications in medical imaging, wearable technology, and non-rigid systems.

In this study, we fabricated flexible scintillators using poly(methyl methacrylate) (PMMA) and nanocrystals for X-ray detectors. The radioluminescence and sensitivity properties of these scintillators were investigated and will be presented.

Contribution track

KOPUA

Paper submission Plan

Best Presentation

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