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Organic-inorganic hybrid nanocomposite materials for radiation detection SUNIL SAHI, WEI CHEN, Univ of Texas, Arlington — Scintillator is the material that emits light when excited with high energy radiation. Inorganic single crystals and organic (plastic and liquid) scintillator are the most widely used scintillator. Inorganic crystals have higher efficiency and high stopping power but single crystal are difficult to grow and are very expensive. Also, some inorganic scintillators like NaI-Tl are not environmental friendly. On the other hand organic scintillators have poor stopping power because of low Z-value. This limits the application of organic scintillator. Here we have proposed a nanocomposite scintillator by embedding the inorganic nanoparticles into organic polymer. Nanoparticles are synthesized and characterized using XRD and TEM. As synthesized nanoparticles are then embedded in to the polymer matrix to make nanocomposite scintillator and their optical properties have been studied. The nanocomposite scintillators have shown improved luminescence properties as compared to the plastic scintillator.

Sunil Sahi
Univ of Texas, Arlington

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