Contribution ID: **1383** Type: **Parallel session talk**

# Production and optical characterisation of PET and PEN scintillator samples

*Friday 19 July 2024 15:55 (17 minutes)*

Organic scintillators detect ionizing radiation and are crucial in Particle and Nuclear Physics research. This study aims to enhance scintillator properties for next-gen experiments, focusing on Polyethylene Terephthalate (PET) and Polyethylene Naphthalate (PEN) as promising alternatives for emitting blue light when exposed to radiation. We manufacture, PET, PEN, and PET:PEN blend scintillator samples via injection molding and investigate the impact of dopants. Comparative analysis shows PEN samples have higher light responses compared to PET, with specific dopants doubling PET's light yield. A positive correlation exists between the light response and PEN proportion in PET:PEN blends.

## Alternate track

## I read the instructions above

Yes

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**Session Classification:** Detectors for Future Facilities, R&D, Novel Techniques

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