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【342】 Development of a new class of scintillating plastic fibres

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The use of scintillating plastic fibres in combination with modern SiPM detector arrays allows to build intrinsically fast and low mass particle detectors with good resolution and high geometrical flexibility. We present the development of a new class of scintillating fibres which are based on a novel type of luminophores admixed to a polystyrene core matrix, aiming at very fast fibres with high light yield. Their performance is already competitive to state-of-the-art products. In particular, the decay time constants are in the order of 1 ns, which is more than a factor two shorter than the fastest known fibres and makes them especially interesting for time critical applications.

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