

Physicists use plastics to detect radiation

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In applications ranging from hospital X-ray machines to instruments for astronomy, the standard way to measure the dose of radiation is to use a detector made from an inorganic semiconductor, such as silicon. It is not easy, however, to use this type of detector over large areas, and inorganic detectors are not flexible.

A team of researchers from the Department of Physics at the University of Surrey, led by Dr. Paul Sellin, has developed a new type of radiation detector made from a new type of plastic that conducts electricity. As the radiation dose increases, a greater current flows in the plastic detector, allowing an accurate measurement to be made. The research effort has received a boost recently in the form of a one-year research grant from the Science and Technology Facilities Council. The grant is being shared with Centronic Ltd., a Croydon-based company that manufactures and develops radiation detectors.

The Surrey team has published their preliminary findings in the prestigious international journal, *Applied Physics Letters*. Dr. Sellin and his collaborators in the Physics Department, Dr. Alan Dalton and Dr. Joe Keddie, have also filed a patent on organic radiation detectors with support from the University.

Dr. Sellin commented: "This successful research has grown from a collaborative effort drawing on our expertise in radiation detection and the experience within the Soft Condensed Matter Physics Group in making polymer films and understanding their properties."

Dr. Keddie added, "Within the Physics Department, the Radiation Laboratories and the Soft Matter Laboratories have benefited from recent investment from government SRIF funding. This investment is clearly leading to exciting scientific results combined with a patent and further funding."

Source: University of Surrey

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