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News Release

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All the colours of the rainbow inspiring low-cost green technology

Scientists are being inspired by colours in their development of clean energy technologies, a science festival audience will hear.

Exploiting different colours within the spectrum of sunlight is helping to develop low-cost solar energy panels, researchers will explain.

Solar panels are in development that incorporate chemically coloured dyes, which capture various wavelengths of light from the sun, to optimise their efficiency.

The technology offers scope for producing flexible or see-through coloured solar panels, which could be used as windows, or in awkward spaces. This could enable creative, energy-efficient architecture where the use of conventional panels is difficult or undesirable, such as in urban areas.

The research has parallels in the plant kingdom, in which plants have learned to harness the power of sunlight in order to thrive. Scientists are improving their understanding of how to grow crops efficiently, by studying how they respond to various light conditions.

For example, plants grown close to one another will shoot upwards to compete for light, and will produce fewer flowers, leaves and seeds than plants grown in open space.

Exposure to various colours of light also affects their development, scientists have found.

Investigating these processes could help scientists develop crops to feed a growing population amid changing climates.

Dr Neil Robertson of the University of Edinburgh's School of Chemistry will describe the research at 'Catching the Rainbow: Plants, people and solar cells in Scotland' at 5.30pm on Monday 13 April at Summerhall, as part of the Edinburgh International Science Festival.

Dr Robertson said: "Plants have been harnessing the power of sun as they have evolved over millions of years. Understanding the processes by which nature harvests this incredible resource is now inspiring scientists to develop green technologies."

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