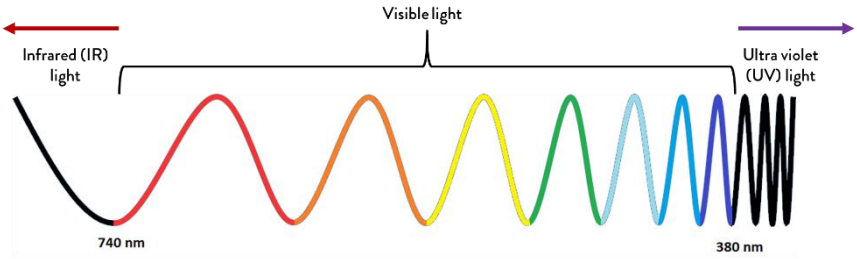
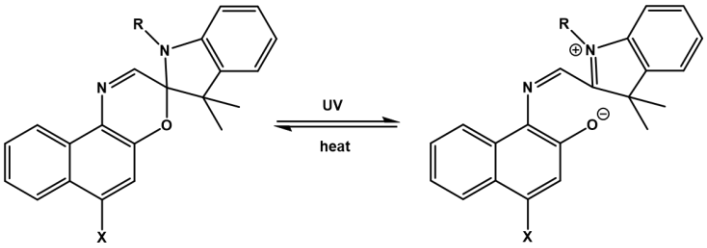
Discover Smart Materials

Photochromic materials

Photochromic materials change colour in response to light and then return to its usual colour once the light is removed. UV colour changing materials, which are often sold as beads to thread onto string to make homemade jewellery, are made up of a plastic that contains a compound that changes colour when exposed to ultraviolet light.



This colour change occurs because the UV light gives the chemical dye enough energy for it to change its structure from a colourless one to a structure that is coloured.



White / Colourless *Coloured*

Once the UV light is removed the temperature surrounding the bead gives it enough energy for the dye compound to change its structure back to its colourless form.

These beads can be used to detect the presence of UV light and, as a result, can be used to test how good a material is at blocking UV radiation (see the 'Mission Starlight' experiment link below.

Learn more

- Royal Society of Chemistry 'Mission Starlight': https://edu.rsc.org/resources/mission-starlight/2073.article

The future is what you make it...

...but it is also what you make it out of