

## **Structural colours in biology and how these natural micro- and nanostructures inspire current technology**

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Beetles whiter than white, insects with metallic colours and butterflies with coloured wings that seem to shine by themselves, even in low light conditions – structural colours are omnipresent in biology. As opposed to pigment colours, structural colours are caused by the interaction of light with micro- and nanoscopic structural features of the biological material: total reflection, spectral interference, scattering, and, to some extent, polychromatic diffraction, all familiar in reference to inanimate objects, are also encountered among tissues of living forms, most commonly in animals.

The physical principles of the generation of structural colours will be reviewed, various examples from the animated world will be given and possible applications of biomimetic colours in man-made devices such as humidity sensors and allergy control fabrics (keyword smart colours) will be discussed.