

ABSTRACT

The brightest and most brilliant colours in nature are produced by nanostructure rather than pigment. Instead of molecular excitation, light is reflected by constructive interference with structures corresponding to a wavelength of light. This interference effect has long been observed in shimmery materials like butterfly wings, peacock feathers and shiny beetles, and is reproduced in artificial nanostructured materials like CDs and Bragg multilayer filters. Recently the phenomenon has been found to be widespread in plants too, in leaves, flowers and fruits. I will describe our recent research into how plants have harnessed nanostructure for communication with pollinators and frugivores, and how this might inspire materials of the future.