**Colour blue**

Is there any blue pigment with enhanced colour properties, reduced cost and lower cobalt content than cobalt blue?

The Egyptians and Babylonians used lapis lazuli 6,000 years ago. In 1802, a French chemist synthesised cobalt blue. In 2009 scientists discovered YInMn Blue, otherwise known as Oregon Blue. But most of these pigments have limitations. In 2020, researchers reported a new class of ‘cool’ blue colourants that are inexpensive and more environmentally friendly.

For the last 200 years, cobalt blue has been a dominant commercial blue pigment because of its colour intensity, ease of synthesis and versatility. However, 33% of the colourant by mass is carcinogenic, making cobalt blue relatively expensive and environmentally harmful to produce. The Oregon State University researchers were inspired by the crystalline structure of a light-blue mineral called hibonite. The team substituted aluminum ions in hibonite with cobalt, nickel or titanium ions. The resulting series of pigments showed a range of intense blue colours, some with reddish hues.