These images were captured using a scanning electron microscope, which uses an electron beam to scan the surface of a material, line by line. A computer turned the results into black and white images, which was then colourised to create figures within the images. The dragon is made of a metal carbide and fire is made of magnesium. The turtle and goldfish are both made of MXenes – a family of 2D materials that have similarities to graphene and which contains a transition metal such as titanium, vanadium, niobium or molybdenum combined with carbon or nitrogen. The turtle’s width is approximately 7 μm and the goldfish is about 13 μm long. The dog was produced from a 16 μm wide scanning electron micrograph of titanium oxide crystals on carbon. These crystals had formed from the high temperature oxidation of a MXene. © Dr Babak Anasori