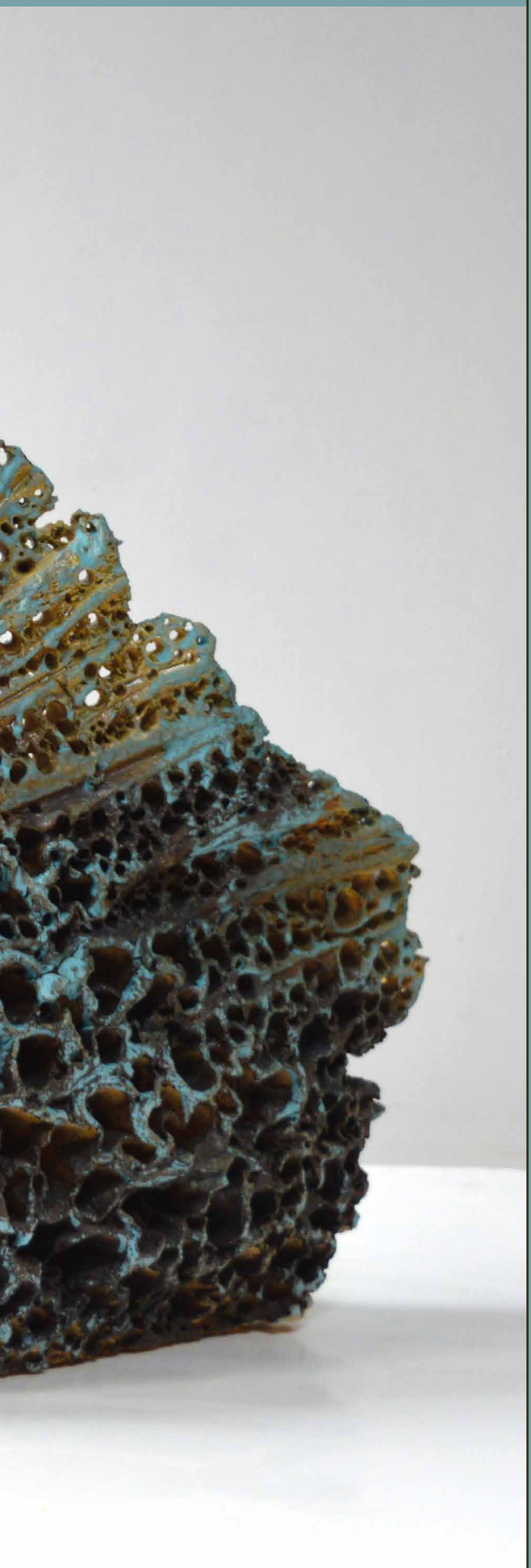


Ceramic sculpture from the *Erosion* series (2026), chamotte clay, high-temperature glazes, engobes firing temperature: 1230°C



Inspiration alone doesn't cut it.

Ceramic art requires knowledge

The recipe for a ceramic product? First, carefully prepare the right components: the type of clay, the appropriate oxides for decoration, and finally the glazes. Ensure the mould is properly designed, choose the right drying method, and include any additional internal supports to prevent warping in the kiln. Finally, set the temperature to 800–1000°C for the first firing of the clay. For the second firing, you can heat the kiln up to as high as 1300°C. Of course, remember to adjust the temperature according to the type of clay and the glazes used. At the same time, closely follow the firing curve – the appropriate change in temperature over time – which is crucial for achieving the desired results. Don't forget to sprinkle a little creativity over top.

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Ceramic sculpture from the *Searching for essence* series (2025), chamotte clay, high-temperature glazes firing temperature: 1230°C





Ceramic sculpture from the *Destruction* series (2021), chamotte clay, high-temperature glazes, firing temperature: 1220°C

Behind the scenes, ceramic art bears little resemblance to the process we usually associate with imagination, creativity, and inspiration. To the unaware, it may seem that a painting, print or sculpture comes into being in an almost magical way, brought to life by the artist's brush, chisel or hands, flowing from the creator's mind into reality. It is hardly ever that simple. The creative process can be extremely demanding, time-consuming, and often marked by numerous setbacks. Of course, creativity is essential in any artistic endeavour, but we rarely stop to consider just how much an artist must rely on knowledge and experience, and how much their efforts resemble the work of... a scientist.

Unending experimentation

'You cannot practise ceramics successfully without a thorough understanding of the technology involved. I think that this is the most demanding field of visual arts. You need a great deal of knowledge from various disciplines: a bit of chemistry, a bit of physics. The entire process of preparing and creating ceramics must be carefully thought through', says Jolanta Herma-Pasińska, PhD, Assistant Professor at the Faculty of Arts and Educational Science of the University of Silesia. The artist's ceramic works have been showcased at numerous exhibitions in Poland and abroad, including in Germany, Croatia, Austria, Spain, and Italy. She has been working with the Fine Art Gallery Art of Ceramics (a member of the prestigious International Academy of Ceramics), an institution entirely dedicated to the art form, and her works can be viewed, amongst other places, at the Silesian Museum. The final result of a piece made from clay can be influenced by seemingly trivial factors, such as whether the object being fired is positioned closer to the back wall of the kiln or placed on the top shelf. Even the number of items matters, as neighbouring pieces can influence each other's glaze colour through the evaporation of certain chemical compounds. Although many uncertainties can be significantly reduced in the electric kilns commonly used today, the expert notes that it is still impossible to predict exactly how closely the final product will match the original concept.

'I suppose that's why ceramics is so fascinating – because its like a constant race against the material. I'm always curious to see whether it will win this time, or whether I will. Every time I open the kiln, my pulse quickens', says the artist.

For novice ceramists, this inherent capriciousness of clay can be a source of great frustration. And yet, it is not uncommon for an object – first dried and then fired – to exceed the creator's expectations. Even experienced ceramists, despite being thoroughly familiar with a particular type of clay and glaze, often have only a rough idea of what they will manage to achieve. It is precisely experimentation that they often like to rely on. It is different in painting – the colour of the paint does not differ that much before and after it is applied to the canvas. In the case of ceramics, the glaze before firing looks completely unlike the one we see once it is taken out of the kiln. Moreover, before a specific idea is brought to life, numerous test pieces are usually produced to check the behaviour of the clay, its shrinkage, the glaze, and its reaction to a given temperature. Despite all the efforts to perfect the craft of ceramics, failure is sometimes unavoidable. Dozens of hours of work can end in disappointment when, for example, an excessively high temperature in a wood-fired kiln causes the clay to melt. Failure remains a lesson for the artist, who uses it to gain a deeper understanding of the material they are trying to shape.

A pinch of salt

Art is more than just the end result, i.e. the work that the artist presents to the world. It is also the process of its creation. This is perfectly evident in the production of ceramics, which can take months. Such was the case for the installation that Jolanta Herma-Pasińska spent two years working on, attempting to combine clay with salt. The artist began by immersing fired objects in trays of brine to grow crystals on the ceramic bodies.

'The original idea was to create large, dark objects made from highly porous chamotte clay and combine them with white porcelain elements. It was on the porcelain – a highly sintered, low-porosity clay – that the salt crystals were to be deposited. However, it turned out to be a very laborious process', recalls the expert. After a few weeks, when the desired results did not materialise, she began testing other types of clay. She noticed that the salt reacted differently depending on the clay and glaze. Finally, on some of the pieces, she observed stone-like crystals. Others showed delicate lines, highlighting micro-cracks in the ceramic glaze. The final product exceeded even the artist's own expectations.

In ceramic art, taking risks can really pay off.

'Ceramics offers unlimited creative possibilities. After more than twenty years of working with it, I'm still discovering new approaches', says the expert. Among the particularly demanding projects, she mentions structures over two metres tall (the risk of deformation, stress, and cracking during firing increases with the size and weight of the piece) and those with a perforated surface, i.e. weakened by holes cut into the material. The whole process is about trying to 'outsmart the clay' by testing just how willing it is to cooperate with the artist.

To strengthen the structure, artists use internal ribbing or reinforcing flanges – invisible from the outside – which make it easier to prevent deformation. The ordering and thickness of the glaze or engobe (coloured clays) layers also matter, as does whether the form they wish to give the object is to be more geometric or organic. It is precisely this simplicity that seems to be the most difficult aspect of ceramics. Geometric shapes experience much greater stresses during shrinkage – leading to cracking – than rounded, irregular organic shapes. In addition, it is important to keep in mind that during firing and drying, ceramics shrink by 8–14%.

Contemporary archaeology

The uniqueness of ceramics lies not only in just how demanding the craft can be. It also has a remarkable ability to blend modernity with history. This is evident, for instance, in the ever-growing popularity of alternative firing methods. More and more people are turning to the techniques used by our ancestors. These include pit firing and the use of primitive techniques. Ceramics created using such 'old-fashioned' methods are in no way inferior to those produced using modern techniques. Indeed, the reconstruction of these long-forgotten processes is now a significant source of historical knowledge and enables us to study antiquity more effectively.

'A few years ago, I had the opportunity to explore the ancient Etruscan technique of decorating clay objects known as 'terra sigillata', whose extraordinary beauty – with its silky, smooth surfaces – continues to inspire awe to this day. Following in the footsteps of our ancestors (remains of vessels made using this technique have also been found on our soil), I learnt how to achieve a semi-matt finish on ceramics, with a range of earthy tones and a soft feel to the touch, using only different types and shades of clay of varying consistencies and by polishing the surface of the ceramic body appropriately', recalls Jolanta Herma-Pasińska.

Ceramic goods can also be produced using modern technologies, and this is not just a matter of ever-improving electric kilns. There are already 3D printers that can handle various types of clay. This method requires the object to be designed in advance using suitable software, and thanks to the machine's much greater precision, it is possible to produce items with far more delicate structures than those created by hand.

Among the various manifestations of human creativity, ceramics provides exceptionally compelling evidence that combining art with science is possible – and, in many cases, inevitable. Thanks to knowledge and experience, it is possible to create better and more durable works, and artistic inspiration can help push science onto new, uncharted waters.