Plaster was used very early on by the world's first civilizations, thanks to the abundance of gypsum in the earth's crust and the ease with which the hemihydrate powder can be obtained. The procedure involves heating the stone to 110ºC and then crushing and grinding it, at which point it is ready to be made into a paste with the addition of water. Its advantages are that it is a very stable product if it does not come into contact with water, it is not flammable, it has high adhesive power and it hardens quickly so it can be used to attach different materials, plus it is easy to shape and carve. Finally, all kinds of finishes can be used with it, such as polychrome painting, external coating, etc.

The skill of Muslim craftsmen combined with the ease of transformation of plaster would lead to a rapid expansion of its use throughout the Islamic world, and the Alhambra is the site of one of the most varied collections of very delicately carved motifs. In addition, there is an abundance of gypsum plaster in nearby quarries, just 10 Km away, in the hills of Monte Vives, in the municipality of Gabia la Grande. These quarries have a predominance of Alabaster gypsum, which is especially white and pure and was used to carve motifs. They also have, but to a lesser degree, the variety known as Espejuelo, which was used in less-detailed pieces and in masonry work. It is also known as "yeso negro" because of its grayish colour.

Here in the Alhambra a change occurred that would revolutionize plaster workshops and their methods; moulds began to be used to cast multiple copies. This means that more complex and ornate motifs can be produced, because only one piece must be carved, which will be the model used to create a mould. This single model is very carefully designed and in the Nasrid period craftsmen meticulously carve tiny ornate motifs with plant-based, geometric and epigraphic themes. The highest level is reached in the Nasrid constructions of Muhammad III, as seen in the decorations of the Torre de las Damas (Tower of the Ladies). In this Nasrid period plasterwork in relief was based on both direct carving and the use of moulds.
All of this made it necessary to develop a new technology to enable the white plaster copies made in the workshop to be attached to the wall. A lower grade of plaster ("yeso negro") was used to attach them. It was spread on the panels that had previously been fixed to the wall using a lump of clay in the corners, known as “tantos” or "tientos". This technique had not been developed earlier because it was not necessary, since carvings were made directly in the yeso negro on the wall to which it had been applied, as seen in the plaster decorations of the east façade of the Puerta del Vino (Gate of Wine).

One peculiarity of the plaster ornamentation found at the Alhambra is the presence of a white finishing coat that protects it from dampness outdoors and facilitates the polychrome process. In the ornamentation made with a mould, we also find an orange layer that was a demoulding substance put between the hard plaster mould and the copies that were also plaster. Identifying these two layers allows us to recognize which plasterwork is original and which comes from subsequent interventions, because this technique of using two finishing layers was lost and not used after the 16th century.

Most of the plasterwork we see today has lost almost all of its decoration. They originally had polychrome painting in a limited range of primary colours, a wise combination of black, red and blue alternating with the white of the background. Gold flake was reserved for the epigraphic elements.

**MOCARABES (muqarnas)**

The use of mocárabes is the pinnacle of mathematical calculations and knowledge of geometry, which in this case are used to make three dimensional representations. With them Muslim alarifes created an ethereal ambience of weightlessness, approaching the infinite multiplicity of the celestial vault.

The prototype of mocárabes is found in the squinch, an element used to transition from a square space to the circle of the dome, generating an octogonal plane. Mocárabes developed at the beginning of the 10th century and expand rapidly from Turkestan to Andalusia, although whether they originated in Persia or in North Africa is still the subject of debate. Attached to a course of squares and rhombuses are the different “adarajas” (prisms or cells), the undersides of which are carved and decorated. The upper parts are concealed because they are attached to the faces of other cells that support it. The cells are joined to each other by plaster.
Building a dome of mocárabes in plaster is no simple matter and it requires considerable knowledge, knowledge that not all alarifes possess. Those that do are certainly categorized as masters. They build a wide array of designs, sometimes challenging gravity. Beginning in the corners, they use plaster mortar to attach each cell - made by mould - and they slowly create a dome with the assistance of an arch centre or wooden scaffolding. The dome's internal structure also contains wooden planks and nails are used in some of the cells, which are provisionally attached to wooden ceiling ties that will later be cut, until the area has been covered, at which point the structure becomes self-supporting.

The positioning of these cells generates constructions comprising thousands of cells, as in the Hall of the Abencerrajés, the Hall of the Kings and the Hall of Two Sisters, with over five thousand cells.