

On the Relationship Among Mineralogy, Petrology and Gemology of Jadeite

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Abstract: In China's gem industry, jadeite means Myanmar Jadeite. Because the jadeite in Myanmar comes from Yunnan and Myanmar, some older generations of the gem industry call it "runjed". In mineralogy and petrology books, the words "Emerald" and "growing Emerald" are rarely used. In the middle of Qing Dynasty, Jedi and Burmese warriors were used as synonyms. Almost all jadeite produced in Myanmar is not jadeite. At that time, mineralogy and petrology were in their infancy, so it was impossible to clearly understand the nature of jadeite. With the development of mineralogy, jadeite has been identified as the dominant mineral of jadeite. Since then, jadeite and jadeite have become synonymous with many Chinese works and dictionaries. In 1984, some dark green parts of Emerald "Green Di" were found. As we know, emerald cannot be used synonymously with berries. Emerald is a kind of berry. Rock is not a mineral but a collection of rock minerals. Therefore, from the petrological point of view, there is a "jayit" among the "avant-garde" that belongs to the origin of baozi. Opinions differ. According to the author, jadeite can be defined as "ajdeitite with gem value". More generally, according to "jadeness", jadeite is called jadeite. Here, jadeite is defined more closely from the perspectives of mineralogy, petrology and Gemmology. In order to study jadeite in depth, we need to learn three aspects of knowledge comprehensively. China is Jade's hometown. Jadeite research, thanks and carving technology, leading the world. The word "jadeite" comes from Chinese. This is the most widely used in the world. It has long been established as the lingua brand of gemstone industry in accordance with international naming rules. It doesn't need to accommodate those foreign languages, jadeite is not fully understood.

1. Introduction

The chemical composition of "beautiful" pure interior jadeite color is naaiis 206. Zadito is an end member of the sopite family of pyroxene minerals[1]. There are several pyroxenes from nature. The reason is that jadeite can become high-grade jadeite, but it will not form single crystal gem.

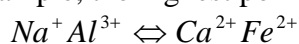
2. Jadeite and It

Most gems' beauty 'focuses on the color and light effects that are displayed after processing. Therefore, the design, cutting, grinding, carving and setting of gemstones maximize the selection of the most appropriate angle to choose the most attractive shielding effect of gemstones[2]. The color effect of diamond depends on its transparency, high refractive index and strong spectral characteristics. Diamond crystal, after careful design and careful attention, not only the gem shows a very strong shine, but also has the feeling of red and blue flame. So in ancient times, it was the "holy fire" and "fire drill". The beauty of jadeite is due to its color mechanism[3]. The crystal structure of jadeite, which is the same as other pyroxenes, and divided into three basic structural units. The reason why tetrahedron (projection triangle), ai-o octahedron (ML) and na-o irregular polyhedron are colored is that the first transition metal series of ions instead of Al^{3+} enters ml position. These ions interact with the electron cloud of the surrounding oxygen atoms to form the d orbital energy potential of transition metal ions. To form the energy level of the other foot. As like as two peas, the difference of the energy of the visible light is the same as that of Dirac delta or wavelength. The white light enters the crystalline and the same energy light, is excited by the

electron, the low energy level orbit to the higher orbit energy and succession. The energy of the light wave is excited by the electron transfer, and the light wave is absorbed, so that the original light mixing ratio of the white light changes, thus making the jadeite color. This is one of the common coloring mechanisms of minerals. In this case, the transition metal ions entering the crystal lattice are called "hickmaryon"[4]. The sum of the interaction between pigment ions and anions of the surrounding ligands is called "anions". Because the same pigment ions enter different grids, they will display different colors. Therefore, when we study the color mechanism of gemstones, we must start with the foreground of the chromophore. For a particular mineral or gem, the color rendering quality depends on the characteristics of pigment ions.

3. Quiri of Jadeite

Jade flute has become the head of jade group. The most important reason that people like it is its color and luster. The emerald of high-grade jadeite is solemn, elegant and pure. Not only that, it's hard to compare all Jadeites, it's also the best in the whole gem range. This high-quality color mechanism is based on the basic points of Al-O octahedron (ML) of jadeite crystal lattice. Al is the coordination member in the crystal lattice. The silicon oxygen tetrahedral hexagonal ring is connected by Al to form the whole lattice of beryl. The above discussion is limited to general knowledge of mineralogy. The most important task of gemologists is to identify gemstones and determine the right price for a specific gemstone according to the market[5]. The latter is obviously difficult for the former, and the economic price is not that business. It is very important to accumulate valuable experience in stone evaluation, so it is necessary to participate as much as possible. The knowledge of Mineralogy and petrology uses all kinds of gemstones' best score (to the best score theory) to study. The best mark of the score is restricted by the characteristic inference of gemstones. Study the probability of the best point of chip inference. The theory of "best point" uses the guide's practice to grasp the sign of precious stone evaluation simply and objectively. The highest point of a precious stone. Groups of several points are grouped. For example, the highest point of jadeite color should be composed of three aspects.



As a result, jedit contains a small amount of calcareous material (cacaoz ten Si 206). Different pigment ions are mixed individually or in different proportions to show different properties and colors. Changes in quality and constraints are the best feeling of color in the mouth. Color feeling is the general feeling of color objects[6]. This is composed of three basic elements: the tone is a narrow color, such as green and yellow green. Lightness and dark colors, such as dark green and bright green, and saturation of fresh and dark green. In general, analysis can be performed through a "biconical graph" to determine the most attractive range of color perception. Of course, we need to grasp the characteristics of customer psychology and tendency, because we have different characteristics of color taste. After finding the best color sense, the limiting factors such as the concentration of pigment ions and the influence of optical background were studied.

4. Emerald and Emerald

The research level of jadeite is much lower than that of jadeite. Because it is rare in nature, there is little information for reference. In the book "geological vocabulary" published in the United States in 1972, based on the explanation of 20 jadeite rocks of igneous rocks (all selected, legal, connecting rod jadeite randomly), the author is the summary of the following jadeite color rock characteristics, for the summary of a little information of predecessors:

Mineral composition of cyanamide: the cyanamide that can form jadeite belongs to a single ore (other components are less than 10%)[7]. Related minerals are albite and courage. At the same time, the formation of adenosine diphosphate is later than that of albite. In the past, zeolite was considered to be a very stable mineral. From this batch of samples, we can know that several Jadeites are formed with the hornblende of zeolite, which can be directly traced to be transformed from jadeite. The feldspar is bent.

The hard jadeite belongs to the category of metamorphic structure, but it is more complex than the general metamorphic rock. This reflects the special mechanism of night generation. In these samples, static crystallization and dynamic crystallization are often intertwined. Generally speaking, the jadeite rock formed by static recrystallization spasm effect is relatively uniform, most of jadeite is columnar granular, and the characteristics of extending along the c axis of crystal are not obvious.. Under this effect, high quality jadeite is formed. Generally speaking, the structure of this type of single mineral Hardy is not uniform, and there are obvious changes in a small range.

In a broad sense, "jadeite" has no strict petrological definition. Any rock with jadeite characteristics can be jadeite. The general characteristics of jadeite are: fine texture, specific mechanical strength and processability. It has good color and light effect after grinding. Jade has different types, they have special jadeite characteristics. Jed's quality of the same type is very different, just like the Jed interface of the same size, which can reach tens of thousands of people from the original to the original. In order to identify the types of jadeite, people use different glue to sell jadeite economically. Jadeite is the surface characteristics of some physical properties of rock, which depends on the characteristics of rock structure and mineral composition[8]. However, how to combine the two organically and find out the best points of Jed is an important research topic in the future. In order to explain the structure, mineral composition and properties of jadeite, one or two examples are given.



Figure 1 Jadeite ore

For example, the texture of high-grade jadeite should be fine and even, similar to the top cover of goat fat, which is transparent and strong, does not touch the surface and interior, has disadvantages, does not stick to the net, and has no impurities. It was soon inferred from the arrow that the formation of high-quality jadeite was bound by more pure components and more refined. The inference lacks scientific evidence. All the above jadeite properties are reflected in people's eyes through some light perception. Obviously, optical homogeneity does not mean that the mineral composition of jadeite is single. On the contrary, single mineral composition can also form optical inhomogeneity due to mismatching components. In my opinion, when discussing the dependence of jadeite and rock structure and composition, we should pay attention to the "light transfer point". Now, as an example of analyzing Jade's "water (transparency)," take a unique sign. As we all know, the transparency of jadeite is the highest among all Jadeites, but low transparency is not necessarily false jadeite. Jadeite - if jadeite is well adjusted, its value is abnormal[9]. The transparency of jadeite is not equal to the total transparency of jadeite minerals. Two factors must be added to the intensity of inter particle optical effects and the number of times light passes through the interface. The intensity of the optical effect between particles is directly proportional to the refractive index difference of the media on both sides of the interface. If jadeite is a single mineral rock, and the second medium does not exist between particles, the intensity of the optical effect between particles should be the same as that of minerals. Birefringence is proportional to direct; if the inhomogeneous mineral is a continuous emerald, the contrast of the optical effect between the pullers can be further reduced. As mentioned before, transparent and colorless jadeite can maintain high transparency when containing less egg ions, and the maximum birefringence of cyanamide is very low. Therefore,

the transparency of jadeite formed by single mineral jadeite is better than that of other Jadeites. In the future, the "theoretical highest point" of jadeite texture will be further introduced: the constituent elements must be pure, and there is no second medium between the two; B. the particle size shall not be fined as much as possible. Moreover, the segmentation value is that the boundary of the particle cannot be recognized by the naked eye. And, under the 10x expanded glass, there is a fiber feel. And that reduces the number of light passing through the interface. In addition, the contrast of the optical effect of particles is small. The texture of jadeite jade is excellent, the transparency and breaking strength reach the highest point, showing quasi single volume optical effect.

5. Conclusion

I found the white jadeite in the market. The perfect base of white jadeite is decorated with "white" emerald. If two values are set correctly, the value will double. White jadeite is precious. No white pigment ions and chromophores. When the optical effect between transparent and colorless mineral particles reaches the intensity, it will form a natural white tone. For example, calcite is very transparent, but no transparent white marble is found. Pure white marble, porcelain white. The birefringence of calcite is as high as 0.1697, and the optical effect between the particles of marble is very good. The intensity of the optical effect among the jadeite particles is not enough to make the jadeite salt "white". This mineral is usually albite. The refractivity of albite is about 1.530, while that of jadeite is about 1.660. The difference between them is about 0.130, which is the approximate birefringence of calcite. So when a few percent of the fine feldspar is evenly distributed between the fluxes, it is enough to turn the entire oak ring white. This kind of jade, because the overall jadeness also has the characteristics of jadeite, can not be considered as fake jadeite, but the transparency will be reduced.

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