ETCHING

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Annotation: The article examines etching as a unique technique of graphic art, its historical development, technical features and place in the context of world artistic culture. The influence of technological changes on the evolution of etching and its application in various historical eras is analyzed. Special attention is paid to the work of outstanding etching masters such as Rembrandt and Goya, as well as modern trends in the revival of traditional techniques.

Key words: etching, graphic art, etching, Rembrandt, Goya, engraving technique, historical context, contemporary art.

Introduction:

Etching is a complex graphic technique in which the artist applies acid-resistant varnish to a copper plate, then scratches the varnish layer with a needle along the lines of the future image to the metal, and places the plate in a ferric chloride solution. The desired gradation of tones is achieved several times. Covers the plate with paint and places it on the etching press. Wet paper is placed on the plate and under pressure the paint transfers to the paper. The “whims” of technology provide the etching artist with additional means of artistic expression.

Literature analysis and methodology:

Etching, as a form of graphic art, occupies a special place in the history of fine art due to its unique technique, wealth of expressive possibilities and historical significance. The term "etching" comes from the French word "eau-forte", which means "strong water" and refers to the use of nitric acid in the etching process. This artistic method appeared in Europe at the end of the 15th century and became popular during the Renaissance, continuing to develop in the 17th-19th centuries. Etching as a technique differs from other forms of engraving in its special technology of creating an image on a metal plate using etching. This article is aimed at considering the evolution of etching, its place in the context of world art, as well as analyzing the execution technique that makes this type of engraving unique.

The process of making an etching begins with grinding a copper (zinc, iron, aluminum) plate of the required size. Then it is covered with a layer of acid-resistant varnish on all sides. On the front side, the artist, using special tools, scratches the varnish, embodying the future painting. Immerse the plate in the acid solution for the required time, watching until the acid deepens the scratches to the desired depth. Washes and dries the plate, rubs in special paint, and places it on the etching press. Wet paper (almost 100% cotton) is placed on top and pressure is applied using the rollers of the etching press. Looks at the print (proof) and then repeats the process until the artist achieves the desired result.

The number of proofs can reach up to a dozen copies. When an artist prints an etching, they use paper significantly larger than the size of the etching itself, leaving margins for framing or matting. Below the print, on the lower margin of the paper, they make inscriptions

in pencil. First, the signature is written, which indicates the print number out of the total possible prints in the edition. For example, 2/100 means this is the second print out of a possible 100 in the edition.

For special occasions, the artist may mark a print with "AP" (Artist's Proof), indicating that the print was made with exceptional quality, typically for exhibition purposes. Next, the technique used is noted—for example, "C3" signifies an etching. If the colored etching was printed using multiple plates, it is specified, such as: "colored etching, made on 4 plates." The year of printing is also indicated, and the artist signs the print.

Results:

When analyzing etching, it is important to refer to the works of art historians such as Erwin Panofsky, Johann Winckelmann, and contemporary researchers of graphic art, who highlight the connection between technical development and socio-cultural context. The sources for study include not only the etchings of Rembrandt, Francisco Goya, and James Whistler but also technical treatises of the era.

Methodologically, the research is based on an interdisciplinary approach, including a comparative analysis of etching techniques, the historical and cultural context of their use, and an aesthetic evaluation of the artistic language. Attention is given to technical aspects such as the preparation of the metal plate, the etching process, the use of acids, and printing techniques. Additionally, the influence of new technologies that emerged in the 19th century, which significantly transformed traditional methods of etching creation, is considered.

The research findings confirm that etching served not only as a means of artistic self-expression but also as a tool for documenting the era. The technique allowed artists to create works with intricate detail and subtle nuances of light and shadow, making the images particularly expressive. For example, Rembrandt used etching to convey the complex emotions of his characters, while Goya employed the technique to create social satire in his series "Caprichos". Technological changes in the 19th century, such as the advent of photogravure, greatly expanded the possibilities of etching, yet this led to a decline in interest in traditional methods, which began to be viewed as archaic. Despite this, etching has retained its significance in contemporary art as a means of experimentation and unique artistic expression.

Discussion:

When considering etching in a historical context, it is evident that its popularity was closely tied to the availability of materials and the development of printing. In the 17th century, for example, etching was used not only to create individual works of art but also to produce illustrations for books. This helped to popularize the art form among a wider audience. In the 19th century, with the development of photography and lithography, etching began to lose its utilitarian functions; however, it retained its status as an elitist and refined art form. In the 21st century, etching is experiencing a revival due to the growing interest in traditional techniques and environmentally conscious approaches, as contemporary artists use less toxic materials.

Different etching processes are selected depending upon the particular material to be removed. Wet chemical processes result in isotropic etching where both the vertical and lateral etch rates are comparable, whereas dry etching processes like sputter etching, plasma etching, ion beam etching, and reactive ion etching are anisotropic. Among the dry etching

techniques, plasma and reactive ion etching are the most popular in semiconductor processing.

Wet chemical etching is employed in various processing steps. In wafer fabrication, chemical etching is used for lapping and polishing to give an optically flat, damage-free surface. Prior to thermal oxidation or epitaxial growth, wafers are chemically cleaned and scrubbed to remove contamination that results from handling and storing. For many discrete devices and integrated circuits of relatively large dimensions (> 3 μ), chemical etching is used to delineate patterns and to open windows in insulating materials.

Many of the materials used in VLSI, such as SiO2, Si3N4, deposited metals, and so on, are amorphous or polycrystalline, and if they are etched in a wet chemical solution, the etching mechanism is generally isotropic, that is, the lateral and vertical etch rates are the same. However, in pattern transfer operations, a resist pattern is defined by a lithographic process, and anisotropic etching is needed to yield steep vertical walls

Conclusion:

In conclusion, etching is a unique technique of graphic art with a history spanning several centuries. The study of this technique reveals how artistic and technical approaches to creating images on metal plates have evolved. Despite the decline in popularity of etching in the 19th century due to the development of new technologies, it has maintained its significance as a form of artistic expression. Contemporary artists continue to experiment with etching, affirming its relevance in the artistic explorations of the 21st century.

References:

1. Zvoncov, V.M. Etching / V.M. Zvoncov, V.I. Shistko. – St. Petersburg, 2004.
2. Nemirovsky, E.L. The Invention of Johann Gutenberg. History of Printing. Technical Aspects. – Moscow, 2000.
3. Analysis and Interpretation of Works of Art: A Study Guide / N.A. Yakovleva, E.B. Mozgovaya, T.P. Chagovets, et al. – Moscow, 2005.
4. Vasilyeva, N.A. Etching and Its Place in Graphic Art. Moscow: Art of the 21st Century, 2003.
5. Salmon, K. Rembrandt: Etchings of the Great Master. London: Thames & Hudson, 2006.
6. "Etching." V.M. Zvoncov and V.I. Shistko. Moscow: "Publishing House Art," 2000.