



## Artistic enamel as a factor in form-making in the work of Ukrainian jewellery artists

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**Abstract.** The diversity of artistic enamel techniques creates scope for creative experimentation among Ukrainian jewellers, the revival of Byzantine and Old Rus' enamelling traditions, and the introduction of innovative technologies, which remains highly relevant to Ukrainian jewellery art. The purpose of the study was to analyse the main principles of jewellery design, which form the basis for technical and technological inspirations in enamelling and support the effective expression of the artistic image in the work of contemporary Ukrainian jewellery artists. The methodological basis of the study involved several scientific methods: comparative-historical, analytical-descriptive, figurative-stylistic analysis, structural-typological, the method of recording field material (interviews) in audio form, and the methods of analogy and conjecture. The study examined the specifics of the methods and principles of form creation, defined by authorial style, in particular, in the context of emphasising compositional solutions through the expressive features of artistic enamel techniques and their technological inspirations in the work of contemporary Ukrainian jewellers. The research indicated that artists apply both classical and authorial enamel techniques, combining them with gemstones and mother-of-pearl to create complex, multi-layered compositions. The analysis of the activities of the creative teams of the Dyulber Jewellery House and the Lobortas Classical Jewellery House indicated that the systematic combination of theoretical knowledge and practical experience, along with the careful development of technological charts for the production of enamel jewellery works, ensures a high quality of creative results. The combination of traditional and experimental enamel technologies shapes the development of contemporary Ukrainian jewellery, opens new creative possibilities for artists of the late 20<sup>th</sup> and early 21<sup>st</sup> centuries within the global historical and cultural context, and emphasises individual style and a high technical level in the execution of jewellery works

**Keywords:** Byzantine and Kyivan Rus' enamelling; technologies; traditions; experimentation; innovations; techniques; jewellery art

### INTRODUCTION

The relevance of this research is determined by the need for scholarly understanding of the formative principles of artistic enamel in contemporary Ukrainian jewellery art, with regard to the transformation of technological processes and approaches of artists at the beginning of the 21st century. The intensification of experimental practices and the integration of new materials and innovative technologies into traditional enamelling techniques led to the emergence of new models of interaction between construction, material, and artistic image. This creates a need to systematise the developed theoretical

approaches and clarify the role of enamel as a formative factor in contemporary Ukrainian jewellery art.

The issue of artistic enamel was addressed in a number of Ukrainian and international studies that outline the technological, stylistic, and compositional aspects of its development within the context of jewellery art. O.O. Rogotchenko (2025) provided an analytical and generalising characterisation of contemporary practices in Ukrainian visual art and identified the specific role of formative processes in shaping innovative plastic solutions in decorative art, in particular, in jewellery art. The researcher emphasised the interrelation between technological

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innovations, the use of various materials, including enamel, and the figurative system of the artwork. G.M. Yurchyshyn *et al.* (2023) analysed the artistic and technological features of enamel in the works of Ukrainian jewellers and outlined the genesis of enamelling art in Ukraine throughout the 20<sup>th</sup> and 21<sup>st</sup> centuries. In particular, the tendencies of its development were examined in the artistic and technological aspect of traditional techniques, including *champlevé*, *cloisonné*, and painted enamel, in synthesis with various methods of artistic metalworking. The study stated that enamel functioned both as a decorative component and as a constructive element of form formation.

O.V. Barbalat (2023) investigated the transformation of the traditions of Byzantine and Old Rus' jewellery in contemporary practice, focusing on the revival of historical hot enamel technologies and their adaptation to modern artistic concepts. In a related study, O.V. Barbalat (2022) substantiated the significance of historical and cultural heritage as a source of formal and figurative solutions in contemporary Ukrainian jewellery art. V.V. Karpov & O.G. Naumov (2021) noted that since the late 20<sup>th</sup> century, the development of artistic enamel in Ukraine was characterised by innovative searches and experimental applications of the hot enamel technique in various art forms, including jewellery, together with the introduction of technological innovations. Based on the scientific discourse developed in Ukrainian art studies, O.G. Naumov (2020) concluded that enamelling art, given the specificity of its techniques and materials, appears as an intermedial artistic phenomenon represented both in decorative art, including jewellery, and in visual arts. S.V. Luts (2021) considered enamel within the system of artistic metal and jewellery as an integrative factor in the formation of the compositional structure of a jewellery piece. It was established that the combination of technological expediency and artistic concept contributed to the emergence of individualised authorial strategies in contemporary jewellery art.

In the broader international theoretical context, contemporary jewellery is also interpreted through the prism of postmodern aesthetics and conceptual approaches. In particular, S. Sirinkraporn (2022) emphasised that the study of postmodern aesthetic philosophy in contemporary jewellery design provides valuable insights for artists, designers, and students. The researcher highlighted the role of creative approaches, attitudes towards social phenomena, globalisation, aesthetic experience, and conceptual development as key factors contributing to the emergence of new jewellery styles. From this perspective, jewellery is considered both an object of material culture and a medium that integrates bodily, intellectual, and environmental dimensions, reflecting the complex interaction between individual identity and contemporary socio-cultural processes.

From a technological standpoint, recent scientific research also focuses on the optimisation and

quantification of enamelling processes. Y. Qian & X. Dai (2025) demonstrated that experimental results indicate a linear regression relationship between the mass of enamel samples and firing duration. Their study proposed and validated a regression-based model that allows the precise calculation of firing time depending on enamel characteristics. This quantitative approach enables standardised and reproducible enamelling processes and contributes to improving technical accuracy and consistency in the production of enamel elements. Such findings indicate the increasing role of scientific modelling and data-driven methods in contemporary enamelling practice, which complement traditional craftsmanship with analytical precision.

Despite the existence of a number of studies, most focused either on the historical aspect of enamel development or on the technological characteristics of particular techniques. A comprehensive analysis of the formative principles of artistic enamel as a systemic phenomenon of contemporary Ukrainian jewellery art remained insufficiently generalised. The issue of interaction between construction, material, and artistic image in the context of the synthesis of traditions and innovative technologies requires further clarification. The study focused on examining the principles underlying the creation of jewellery pieces, which determine the technical and technological approaches in enamelling, and on analysing their role in revealing the artistic vision in the works of contemporary Ukrainian jewellers.

## MATERIALS AND METHODS

The present study explored the specificity of form-making processes in the oeuvre of leading Ukrainian jewellery artists of the late 20<sup>th</sup> – early 21<sup>st</sup> centuries, whose creative practice demonstrated the pivotal role of enamel techniques in articulating and embodying the artistic and figurative conception of contemporary jewellery art. The research was based on principles of systematisation and a comprehensive approach, which substantiated a complex of artistic, figurative, constructive, and technological processes that, in synthesis, created a high-level artistic phenomenon. The systemic approach ensured comprehensive acquisition of information regarding the studied processes and phenomena.

The comparative-historical method was applied to identify similarities and differences in artistic, figurative, and technical-technological processes of form creation in enamel art between contemporary Ukrainian jewellery artists and representatives of previous cultural and historical periods. The analytical-descriptive method was employed to thoroughly elucidate the quantitative and qualitative characteristics of the principles and methods of work, including the use of traditional and innovative enamel techniques, incorporation of various materials, and formation of the artistic-stylistic concept. This approach recorded specific techniques and their functioning in the creative processes of contemporary

Ukrainian jewellery artists. Figurative-stylistic analysis was used to identify the individual stylistic principles of the artists, while the structural-typological method provided for the examination of typological classifications and the analysis of the structural composition of jewellery assortments determined by artistic and constructive means. Methods of analogy and assumption were applied to explore the genesis of artistic-stylistic, compositional, constructive, and form-making techniques.

The study was conducted in several stages: existing literature and exhibition catalogues were reviewed and systematised; field documentation of selected works was collected, including interviews and audio recordings of artists' comments; analytical and comparative evaluation of the collected data was carried out; and the synthesis of results led to conclusions regarding the role of enamel techniques in contemporary Ukrainian jewellery. The study focused on the works of prominent Ukrainian jewellery artists and jewellery houses, including Stanislav Volskyi, Oleksandra Barbalat, Vadym Lesohor, Oleg Garkus, Maiia Kotelnyska, O. Savchuk and A. Savchuk, Olha Komisarova, Anatolii Sherstiuk, the Dylulber Jewellery House, and the Lobortas Classical Jewellery House. These artists were selected according to their active use of classical and experimental enamel techniques, innovative approaches to material and compositional solutions, and influence on the development of contemporary Ukrainian jewellery art. Their works served as representative cases for analysing the integration of traditional and modern enamel technologies, the formation of authorial style, and the realisation of complex artistic and figurative ideas.

Given the limited number of comprehensive scientific works on the development of contemporary Ukrainian jewellery art, the research employed the interview method to record an important part of the study of form-making processes, in which artistic enamel plays a significant role. The interviews were not anonymous and were conducted with leading Ukrainian enamel specialists, namely A. Komarova, senior enamel master at the Lobortas Classical Jewellery House, and O. Barbalat, independent jewellery artist. These respondents were selected according to their professional status, extensive experience, and significant contribution to the development and experimental application of enamel techniques in contemporary Ukrainian jewellery. The respondents provided informed consent for the publication of their statements, and the researchers adhered to the principles of the American Sociological Association's Code of Ethics (1997).

The inclusion of interviews allowed the consideration of the respondents' professional experience and supplemented the analytical, comparative, and descriptive interpretation of the data with empirical information. The discussion focused on the technical and technological processes of enamel work, the characteristics of artistic expression, and

compositional and structural approaches to the creation of jewellery. The data obtained clarified the practical aspects of applying classical and experimental enamel techniques, the selection of materials, and their combination with other components. The results of the interviews were synthesised with the analysis of scientific sources, exhibition catalogues, and field documentation, forming a comprehensive understanding of the role of enamel in contemporary Ukrainian jewellery art and in the creative processes of leading masters.

## ■ RESULTS AND DISCUSSION

Examining the experience of predecessors, reviving the traditions of classical jewellery techniques, in particular, Byzantine and Old Rus' enamelling, and introducing innovative ideas and technological processes are important for the effective development of contemporary Ukrainian jewellery art. The decisive potential of enamel techniques in jewellery is determined both by the current context, which encourages the revival of once nearly forgotten hot enamel techniques in Ukraine, and by the rapid development of enamelling in the international art space. Cloisonné enamel reached a particular zenith during the era of Kyivan Rus'. Gold items such as diadems, necklaces, bracelets, kolts, and book covers adorned with enamel were discovered throughout the territory of present-day Ukraine (Kara-Vasilyeva & Chegusova, 2005). Enamelling reached a high level of development during the Ukrainian Baroque and Modernism periods. After a phase of relative decline in the Soviet era, this technique is experiencing a revival in contemporary practice and emerging in a qualitatively new form (Belichko, 2008). In view of the evolutionary progress of the wide range of contemporary hot enamel techniques, it is important to consider key aspects of the historical and cultural development of this technology in a global context (Shmagalo, 2013).

Enamel is a transparent or opaque glass-like material based on silicates (traditionally lead-containing) with a relatively low melting point, coloured with metal oxides. After being applied to a metal substrate and heat-treated, it forms a hard, glossy coating with high colour fastness and protective properties. Enamelling is a specialised jewellery-making technique integrated with the main metalworking processes. Its characteristic features include the dependence of colour characteristics on firing conditions (in particular, a tendency for shades to shift towards the cooler end of the spectrum with prolonged heat treatment), the possibility of repeated firing with limited scope for correction, and the variability of the final result due to the difficulty of fully controlling the process (Belichko, 2008).

The comparative-historical and structural-typological methods used in this study enabled systematic comparison of the creative approaches of individual Ukrainian jewellery artists and the

identification of common patterns in the use of artistic enamel as a formative factor. The analysis of the works indicated shared tendencies despite the individuality of each authorial style. These include the integration of classical enamel techniques with experimental methods, the consistent combination of enamel with various materials, such as precious stones, metals, and composite elements, and emphasis on technological processes as an integral component of artistic expression. The comparative analysis demonstrated that, although each artist develops a unique

compositional and stylistic language, their approaches converge in several key aspects: the use of enamel as a structural and semantic element of the composition, the multilayered nature of visual solutions, and the pursuit of material and colour expressiveness through controlled technological processes. These similarities indicate stable typological features in contemporary Ukrainian enamelling practice, which reflect continuity with historical traditions and adaptation to modern artistic and technological contexts (Table 1).

**Table 1. Techniques of artistic enamelling, their features, and examples**

Technique	Main features	Technological characteristics	Artistic potential	Examples of application
Hot enamel	Application of enamel powder followed by firing at high temperatures	Multi-layer application, temperature control, and combination with a metal base	Colour depth, transparency, light effects, and durability	S. Volskyi, O. Barbalat, O. Komisarova, Lobortas Classical Jewellery House, etc.
Guilloché enamel	Enamel applied to an engraved patterned metal surface	Mechanical engraving as a base for optical effects	Visual depth, complex light reflections, decorative quality	Dyulber Jewellery House, Lobortas Classical Jewellery House
Cloisonné	Image formed using metal partitions	Use of wires or strips to create compartments	Graphic clarity, ornamentality, structured colour composition	Frequently used in designer jewellery featuring national motifs (O. Garkus and others)
Champlevé	Enamel filled into recessed metal areas	Pre-engraved or stamped metal surface	Relief, textural contrast, restrained colour palette	Decorative elements in V. Lesohor's jewellery designs
Micro-enamel	Fine detailing and multi-layer enamel application on small surfaces	Highly precise temperature regimes, complex firing processes	Refinement, miniaturisation, subtle colour transitions	Lobortas Classical Jewellery House
Experimental enamel with synthetic materials	Combination of enamel with non-traditional materials	Integration of diverse materials and techniques	Experimental nature, contemporary plasticity of form	S. Volskyi, O. Barbalat, M. Kotelnytska, O. Komisarova, masters of Lobortas Classical Jewellery House, etc.

**Source:** compiled by the author

For contemporary jewellery artists representing the independent state of Ukraine, ancient history and rich cultural traditions dating back to Kyivan Rus' logically involve following the technological processes of the classical hot enamel techniques mentioned above, including champlevé, cloisonné, guilloché, and finift, skilfully applied in synthesis with other jewellery techniques. An analysis of the nationwide exhibition projects "Quadra-Mini-Metal. Jewellery Art – Enamel" demonstrated the diversity of the formal language of enamel techniques, reflecting the individual stylistic approaches of the artists (Pasichnyk, 2014b). Within these practices, a spectrum of technical solutions is formed, encompassing both traditional and experimental methods integrated into contemporary jewellery discourse. According to L. Pasichnyk (2014b), the enamel and jewellery works of Ukrainian artists are characterised by a combination of contrasting aesthetic categories, the syncretism of artistic language, and operation at the intersection of classical stylistic principles and innovative individual strategies. This provides grounds for considering enamelling as one of

the key technologies that plays a significant role in the formation and realisation of artistic concepts in contemporary jewellery art.

Drawing on the traditions and experience of previous generations, Ukrainian jewellers actively experiment with enamelling techniques, compositional approaches, and methods of form creation, thereby shaping the distinctive artistic language of contemporary jewellery art. The diversity of technical possibilities offered by enamel gives rise to various principles for shaping artistic form, which directly correlate with the artist's style and determine the nature of compositional decisions. A representative example is the body of work by Stanislav Volskyi, whose formal language is based on a combination of a wide range of technological processes and technical techniques. The use of the classical hot enamel technique, reinterpreted through the resolution of complex creative challenges, takes on an innovative and experimental character in his works and testifies to the artist's high level of professional skill and technical mastery (Volsky, 2008). This is demonstrated in a

series of works from different periods of his career, including the necklace Nefertiti (2005, gold, topaz, diamonds, sapphire, hot enamel), the brooch Lily (2008, gold, diamonds, hot enamel), and the bracelet Summer (2008, gold, diamonds), among others (Fig. 1). S. Volskyi's individual stylistic language is directly conditioned by his approach to technological experimentation, particularly the controlled use of firing regimes, the precision of enamel application, and the integration of enamel with complex metal structures and gemstones. These technological decisions contribute to the creation of a refined visual balance in which colour intensity, surface texture, and compositional rhythm are carefully orchestrated. As a result, enamel in his works functions not merely as a decorative layer but as a key formative element that structures the overall composition and reinforces its spatial and plastic integrity. The consistency of technological refinement, combined with experimental approaches, becomes a defining factor in shaping the recognisable authorial style of S. Volskyi, characterised by both technical complexity and aesthetic coherence.



**Figure 1.** Stanislav Volskyi. Necklace "Nefertiti" (2005)

Source: personal archive

In the work of Anatolii Sherstiuk, hot enamel is employed as decorative inlays within the broader system of stylised figurative compositions. Here, elements of the technique function both as a technological accent and as a meaningful module in the artistic perception of jewellery pieces, such as the brooch Night Fairy (2012, gold, silver, diamonds, hot enamel) and the pendant-brooch Cleopatra (2013, gold, silver, diamonds, hot enamel) (Pasichnyk, 2014a). The allegorical works of Vadym Lesohor stand out for their compositional accents using cold enamel, often expressed through zoomorphic imagery. For example, in the bracelet Metamorphosis (2009, silver, gilding, chrysolite, cold enamel), the technique delicately

emphasises the compositional meaning of the piece and brings the artistic image of the jewellery to its fullest integrity (Fig. 2). In A. Sherstiuk's practice, the use of hot enamel is closely linked to the controlled layering of colour and the precise integration of enamel inserts into complex metal structures, which allows him to achieve clarity of ornamental rhythm and visual segmentation of compositional elements. The technological choices, in particular, the balance between polished metal surfaces, gemstone accents, and enamel fields, contribute to stylised imagery in which enamel acts as a unifying visual and semantic component. By contrast, V. Lesohor's reliance on cold enamel is associated with a different technological logic, where lower-temperature application enables subtle modulation of surface effects and supports more graphic and contour-based solutions. This approach reinforces the narrative and symbolic dimension of his works, while the restrained material intervention of cold enamel enhances the expressiveness of zoomorphic motifs. In both cases, the selected enamel technique directly informs the stylistic outcome: in A. Sherstiuk's works through structured ornamentation and compositional segmentation, and in V. Lesohor's works through pictorial expressiveness and semantic emphasis.



**Figure 2.** Vadym Lesohor. Bracelet "Metamorphoses" (2009)

Source: personal archive

In Oleg Garkus' chest ornament Four Elements (2013, brass, rubber, hot enamel), decoration Thunderbolt (2022, brass, hot enamel, coral), and other works, the hot enamel technique functions as a decorative component of the composition based on ethnic motifs of the Hutsul region. Through colour, it clearly highlights the stylised geometry of symbols, signs, and artistic techniques of folk jewellery, resonating with the Carpathians and the ethnographic features of the region (Fig. 3). In O. Garkus' practice, the use of hot enamel is closely connected to the reinterpretation of Hutsul ornamental traditions, where technological decisions are subordinated to the representation and transformation of ethnic symbolism. The combination of enamel with brass and

other materials enables the artist to achieve a clearly structured composition in which colour performs both a decorative and a sign-based function. Controlled firing regimes and the sequential application of enamel layers contribute to the formation of a saturated colour field that enhances the graphic clarity of ornamental motifs and emphasises the rhythmic organisation of form. Thus, the technological specificity of working with hot enamel becomes a defining factor in shaping the individual style of the artist, which integrates ethnocultural continuity with a contemporary interpretation of form-making principles.



**Figure 3.** Decoration “Thunderbolt” (2022)

**Source:** O. Garkus (2022)

Among the followers of O. Garkus’ practice, associated with the Kosiv school of jewellery, young artists O. Savchuk and A. Savchuk deserve mention. Their work is distinguished by interpretive stylistics in which cold enamel elements serve as final compositional accents. Motivated by the specificity of brassworking and its transformation into contemporary jewellery practices, these artists create jewellery pieces in which enamelling techniques organically emphasise the texture and qualities of the primary materials used in their craft. In the designs of Maiia Kotelnytska, the hot enamel technique appears as a compositional tool for the stylisation of geometrised surfaces (Fig. 4). Decorative enamel inserts are distinguished by their principles of form creation within a minimalist aesthetic, which remains particularly relevant in contemporary jewellery. In the works of O. Savchuk and A. Savchuk, the use of cold enamel is associated with a restrained technological intervention that allows for subtle surface articulation and the preservation of the inherent material qualities of brass. The enamel functions as a finishing compositional element, accentuating contrasts between texture, tone, and material density, thereby reinforcing the expressive potential of the object

without disrupting its structural integrity. This approach contributes to a balanced visual hierarchy in which enamel serves as a complementary rather than dominant component. In contrast, in the works of M. Kotelnytska, hot enamel is integrated into a system of compositional simplification and geometric abstraction, where controlled firing processes and precise application techniques enable the creation of clean colour planes and clearly defined forms. As a result, enamel becomes a key formative element that supports minimalist aesthetics while enhancing the clarity and coherence of the overall design. In both cases, technological choices directly inform stylistic outcomes: through subtle accentuation and material sensitivity in the Savchuks’ practice, and through geometric structuring and compositional clarity in the works of M. Kotelnytska.



**Figure 4.** Brooch “Geometry with enamel and amethyst” (2025)

**Note:** brass, hot enamel, amethyst

**Source:** M. Kotelnytska (n.d.)

Within the context of contemporary Ukrainian fine jewellery art, the work of Oleksandra Barbalat (Kyiv) demonstrates the systematic use of the hot enamel technique as a key means of shaping the artistic image. Her works are based on solar symbolism and mythological motifs, which serve as figurative and philosophical constructs. Such works include the pendant “Civilization of Dolphins” (2013), the set “Heavenly Ark” (2014), the series “Metamorphoses” (2014), and others (Fig. 5).

The artist employs a wide range of enamel techniques in her creative practice, with cloisonné, repoussé enamel, and painting techniques playing a dominant role. In particular, she uses the “graffito” method, which involves partially removing the top layer of enamel after preliminary firing, and polishing multi-layered coatings to achieve complex painterly effects. The variability of heat treatment regimes allows the creation of diverse colour and textural characteristics. The application of enamel to carved

relief occupies a special place, combining traditional approaches with modern technological solutions. A distinctive feature is the synthesis of different materials and technologies. The works integrate natural and synthetic materials, precious stones, mother-of-pearl, and metallised components, in particular, *fémé*, combined with crackle effects. Such combinations form hybrid technological approaches that expand the possibilities of traditional enamelling. In complex compositions, for example, "The Virgin Mary" (2016), several enamel application techniques are combined, ensuring a multi-layered organisation of artistic form and enhancing its expressiveness. The figurative and artistic language of the works is characterised by a combination of chromatic expressiveness and the textural organisation of the material, which ensures the integrity of the composition and the harmony of its elements. In this context, hot enamel acts as a basic formative component that determines the interaction of colour, texture, and the metal base (Shmagalo, 2015; Barbalat, 2023).



**Figure 5.** Pendant from the series "Civilization of Dolphins" (2013)

**Source:** personal archive

In contemporary Ukrainian enamel art, the work of Olha Komisarova stands out for its consistent use of experimental approaches to form creation in the hot enamel technique. Her artistic practice has a conceptual orientation and is based on the integration of emotional and visual content with the material structure of the work. Form creation is achieved through the interplay of the texture of the enamel coating, colour layers, the light-reflecting properties of the surface, and the plasticity of the metal base, which enables the materialisation of individual artistic experience. The technological aspect is determined by variations in firing temperatures, which affect the degree of enamel transparency, colour intensity, and the nature of cracks (crackle). The application of multi-layered enamel with intermediate firing creates depth of colour and an effect of inner glow. The use of various metal bases (copper and silver) results in variations in enamel adhesion, thermal conductivity, and colour

outcome. The combination of traditional techniques with synthetic materials allows the creation of complex relief surfaces with a pronounced tactile texture.

The form-making in O. Komisarova's works is characterised by a combination of functionality and artistic autonomy: the objects retain the characteristics of jewellery while functioning as independent artistic forms. This brings them closer to practices of object art and small-scale sculpture. The conceptual level of the works is linked to the representation of themes such as time, the transformation of personal experience, and the fragility of existence. In this context, enamel serves both a decorative and a meaning-making function, capturing individual experience in material form. In such a way, O. Komisarova's work demonstrates an approach to enamelling in which form-making is based on a combination of technological experimentation, material variability, and conceptual content. This is evident in the works "The City That No Longer Exists" (2022), "Heart" (2024), and "Contact of Bacteria with Organic Edible Material" (2019), where hot enamel serves as the defining element in the organisation of form, colour, and texture (Fig. 6).



**Figure 6.** Brooch "Contact of Bacteria with Organic Edible Material" (2019)

**Source:** O. Komisarova (n.d.)

Notably, in the context of contemporary Ukrainian jewellery art, there are jewellery houses that explicitly declare techniques of artistic enamelling as a priority in their collective creative practice. In particular, the technique of hot enamel on guilloché surfaces in the works of Crimean Tatar jewellers, such as Mekhti Islamov, founder and head of the Dyulber Jewellery House, introduces a special meaning into the artistic and figurative system of national motifs and conveys the main conceptual load of the works. This is exemplified in the ring Rialto (2005, gold, silver, diamonds, hot enamel), the earrings Cascade (2010, gold, silver, diamonds, hot enamel), the earrings Al Gambra (2012, gold, diamonds, pearls, hot enamel), and others (Fig. 7). Here, enamelling emerges as one of

the primary technological means of enhancing jewellery works, along side other traditional techniques such as filigree, which identify the art of the Crimean Tatars (Pasichnyk, 2014a). The creative practice of Crimean Tatar jewellery houses therefore demonstrates a synthesis of traditional ornamental heritage and contemporary enamelling technologies, in which hot enamel on guilloché surfaces functions as a key expressive and conceptual component that reinforces national identity, enriches decorative structure, and ensures the integrity of the artistic image within the collective authorial style.

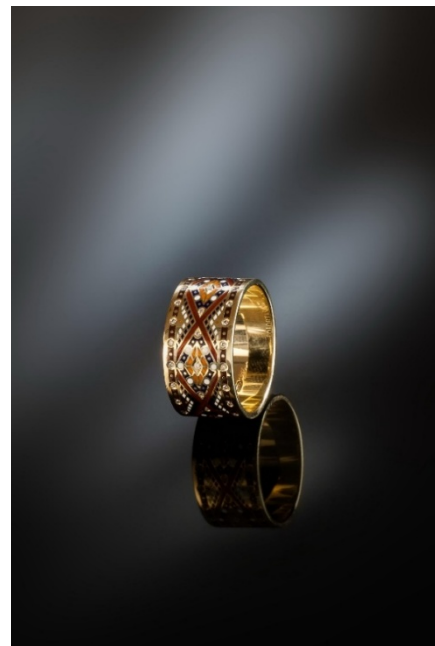


**Figure 7.** Earrings “Al Gambra” (2012)

**Source:** personal archive

An important area of development in contemporary Ukrainian enamel art is the work of the team of enamel artists at the Lobortas Classical Jewellery House (Luts, 2013), which involves systematic research into the technological parameters of Old Rus’ hot enamel techniques, in particular, firing temperature regimes, the composition of enamel masses, and the specifics of their interaction with the metal base. The creation of jewellery pieces with a central motif formed by enamel elements requires a combination of theoretical knowledge of the physical and chemical properties of materials with practical skills, implemented through well-established methods of constructing enamel compositions. In the practice of the Lobortas artisans, a proprietary system for organising the technological process was developed, including sequential operations for preparing the metal base (grinding, polishing, degreasing, and etching), applying enamel layers, and step-by-step firing. The use of micro-enamels is an important element and requires high precision in material application and stable temperature conditions during each firing cycle. Heat treatment is conducted as a series of controlled stages with clearly defined temperature intervals, ensuring uniform sintering of the enamel, minimisation of surface defects, and predictability of the colour result.

The manufacturing process is based on calculated parameters for firing temperature and duration, which allow control over the melting, spreading, and crystallisation of the enamel layer. The application of multiple layers of enamel with intermediate firings creates depth of colour, a translucent effect, and a complex textural surface structure. In this context, hot-enamelling techniques correlate with painting principles, in particular, the glazing technique, or sequential layering, and *alla prima*, or mixing colours during application. A distinct aspect is the use of proprietary technical techniques involving the combination of different types of enamels, variations in layer thickness, and cooling regimes, which produces controlled crackle effects, changes in transparency, and surface micro-relief. This expands the technological capabilities of traditional hot enamel techniques and enhances the precision of executing complex jewellery forms. Thus, the practice of the enamellers at the Lobortas Classical Jewellery House represents a model of integrating traditional hot enamel technologies with engineering-based approaches to their implementation. The combination of controlled temperature regimes, a phased organisation of the production process, and experimental variation of materials enables the creation of multi-layered compositions in which enamel serves as the primary formative and colouristic element, defining the structural and visual integrity of the piece (Fig. 8).



**Figure 8.** Lobortas Classical Jewellery House, Ring “Stozhari” (2011)

**Note:** gold, diamonds, hot enamel

**Source:** S.V. Luts (2021)

It should also be emphasised that hot enamel techniques are most often organically combined with skilful engraving, particularly of partitions, which enhance the composition of jewellery objects through the graphic quality of lines and create harmonious and

integral expression. Moreover, virtuoso engraving creates unrivalled compositions in the technique of hot enamel on guilloché surfaces, distinguished by specific effects that reveal the virtuosity and high professional level of both the enamel master and the engraver. Contemporary Ukrainian jewellery art demonstrates an active transformation of traditional enamelling practices in response to new aesthetic and technological challenges. As noted by R. Shmagalo (2015), the combination of classical and innovative techniques became a characteristic feature of contemporary jewellery objects, which is also confirmed by the results of the present study. The analysis of individual artistic works showed that artists actively experiment with combining hot and cold enamelling techniques and employ modern materials and technologies that ensure colour saturation and expressive texture. Particular attention should be paid to the conceptual aspect of enamel emphasised by Z.A. Chehusova (2002). Her studies indicated that contemporary jewellers increasingly imbue their works with semantic meaning through colour codes, geometric forms, and compositional methods.

L. Pasichnyk (2014a) noted that traditional ornaments remain dominant in regional practices. This observation is also confirmed in the present study; however, a shift in emphasis can be observed. Ukrainian jewellers are gradually moving away from purely ethnographic forms, integrating abstract and modernist elements into their works. Such a transformation may be explained by the influence of international exchange of experience, participation in symposia and exhibitions, and the formation of new aesthetic orientations. The comparison of the obtained results with previous studies supports the conclusion that 21<sup>st</sup>-century Ukrainian jewellery art exists at the intersection of traditional practice and innovative technologies. The combination of classical and experimental techniques, the integration of abstract forms, and the shift in emphasis from ethnographic motifs to conceptual approaches reflect the active transformation of artistic enamel and its significance for the development of contemporary decorative art, specifically jewellery.

According to Y. Teng *et al.* (2020), the implementation of 3D modelling and additive manufacturing technologies enables the creation of personalised jewellery objects with movable structures, where different materials are combined to achieve contrasting visual and textural effects. The authors highlighted that digital fabrication expands design variability while maintaining structural coherence. This is also evident in the present study, where the analysis of contemporary jewellery practices demonstrates a growing use of technological integration to achieve compositional complexity and individuality. However, unlike purely digitally driven approaches, the results of the present study indicate that such technologies are most effective when combined with traditional enamelling techniques,

ensuring both aesthetic continuity and material expressiveness.

In the paper of M.F. Özdemir (2023), enamel is interpreted as a traditional surface decoration method capable of producing a wide spectrum of visual effects through layered application and controlled firing processes. The researcher highlighted the importance of classical techniques such as cloisonné, champlevé, basse-taille, plique-à-jour, and Limoges painting. This aligns with the results of the present study, where traditional techniques are also identified as a foundational basis of contemporary practice. However, the present results expand this perspective by demonstrating that these classical methods are not merely preserved but actively reinterpreted within modern compositional strategies, which enhances their expressive potential. According to Y. Zhengxu *et al.* (2024), the integration of contemporary wireless enamelling techniques into educational processes enhances both technical proficiency and creative thinking among students. The researchers argued that mastering technological parameters is essential for professional development. This corresponds with the results of the present study, which also emphasised the role of technological competence in shaping modern jewellery practices. However, the present research suggests that beyond educational aspects, such technologies influence artistic outcomes by encouraging experimentation and fostering new visual languages in enamel art.

Q. Chen & S.A. Sharudin (2024) argued that the application of 3D printing technologies in enamel jewellery design significantly overcomes limitations of traditional manufacturing, particularly in terms of time, cost, and design complexity. Their findings indicated increased precision and personalisation in production. This is consistent with the present study, where digital fabrication is identified as a key factor contributing to innovation in compositional solutions. However, while Q. Chen & S.A. Sharudin primarily focus on the technological advantages of 3D printing, the present research highlighted the importance of integrating these technologies with artistic and conceptual approaches, ensuring that technical innovation supports rather than replaces artistic intent. P.G. Hangün *et al.* (2026) demonstrated that the reuse of industrial enamel frit waste within low-temperature glass formation processes supports sustainable artistic and industrial practices. The researchers emphasised the relevance of such materials in the context of circular economy principles. This observation is also reflected in the present study, where sustainability emerges as an increasingly significant factor in material selection and production methods. However, the results of the present study indicated that in Ukrainian jewellery practice, ecological approaches are still in the process of gradual adoption and are often combined with traditional material systems rather than replacing them entirely.

Thus, the comparison of the obtained results with recent publications demonstrated both convergence and certain distinctions. While previous studies predominantly emphasised technological innovation, digital fabrication, educational integration, and sustainability, the present research confirms these trends and indicates their synthesis with traditional enamelling practices and artistic conceptualisation. This indicates that contemporary jewellery art functions as an interdisciplinary phenomenon in which technological progress and artistic tradition do not oppose each other but mutually enrich one another, forming a dynamic space for the development of new expressive possibilities in Ukrainian and international enamelling practice.

## CONCLUSIONS

The study established that artistic enamel techniques in contemporary Ukrainian jewellery not only serve a decorative function but also a key means of shaping form and realising artistic imagery. In this study, the shaping of form is viewed as a process in which technological solutions directly determine the structural, plastic, and colouristic characteristics of the jewellery piece in general. The analysis of the works of leading Ukrainian artists, including S. Volskyi, O. Barbalat, V. Lesohor, O. Garkus, M. Kotelnytska, and O. Komisarova, indicated that these masters organically combine classical enamel techniques, such as cloisonné, champlevé, guilloché, graffito, and cold enamel, with their own authorial technical solutions. The analysis demonstrated that each work becomes a unique experimental field, where the combination of traditional and innovative methods ensures an unpredictable and individualised artistic outcome, reflecting the distinctive features of the artist's personal style. The study showed that artists actively employ technological innovations: work with micro-enamels, multi-layered thermal treatments, the combination of enamel with gemstones, mother-of-pearl, metallised materials, and natural components. It was established that contemporary Ukrainian enamelling is at a high level of development, combining

the traditions of Byzantine and Old Rus' schools with experimental approaches. For the first time, the interrelation between technological parameters of enamel, namely multi-layer firing, temperature regimes, and material combinations, and the artistic-compositional characteristics of jewellery was identified and systematised, which constitutes the primary scholarly contribution of the present research. The regularities of form creation in contemporary Ukrainian jewellery art were generalised through the use of artistic enamel as a key means of compositional organisation. The study demonstrated that enamel in contemporary practice functions not only as a decorative element but as a full-fledged formative factor that determines the structure, plasticity, and expressiveness of the artistic image of the work.

Prospects for further research lie in the systematic study of the unexplored physicochemical and artistic-technological properties of enamel as a material, including its behaviour under multi-layer firing, compatibility with different metals and composite materials, and the influence of temperature regimes on colour stability, transparency, and surface texture. Particular attention should be paid to the development and experimental testing of new technical application methods, including hybrid approaches that integrate traditional enamelling techniques with digital technologies such as 3D modelling, additive manufacturing, and laser processing. Further research should also focus on optimising the compositional and technological parameters of enamel objects and adapting enamel to innovative and environmentally sustainable materials.

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None.

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## Художня емаль як чинник формотворення у творчості українських митців-ювелірів

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**Анотація.** Різноманіття технік художньої емалі відкриває для українських ювелірів простір творчих експериментів, відродження традицій візантійського та давньоруського емальєрства й упровадження інноваційних технологій, що зберігає високу актуальність для ювелірного мистецтва України. Мета дослідження – здійснити аналіз головних засад формотворення ювелірних виробів, що створюють основу для техніко-технологічних інспірацій емальєрства та є засобом ефективного розкриття художнього образу в творчості митців сучасного ювелірного мистецтва України. Методологічною основою дослідження було застосування низки наукових методів: порівняльно-історичного, аналітико-описового, образно-стилістичного аналізу, структурно-типологічного, методу фіксації польового матеріалу (інтерв'ювання) у вигляді аудіозаписів, а також методів аналогій та припущень. Вивчено специфіку методів та принципів формотворення, що визначаються авторським стилем, зокрема у контексті акцентування композиційних рішень через використання мовних особливостей технік художньої емалі та технологічних інспірацій у творчості сучасних українських художників-ювелірів. Дослідження показало, що художники застосовують класичні та авторські техніки емалі, поєднують їх з дорогоцінним камінням і перламутром, створюючи складні багатшарові композиції. Проведений аналіз діяльності творчих колективів Ювелірного Дому «Дюльбер» та Класичного ювелірного Дому «Лобортас» показав, що системне комбінування теоретичних знань і практичного досвіду, а також ретельне опрацювання технологічних карт виготовлення ювелірних творів з емаллю забезпечує високу якість творчих результатів. Поєднання традиційних і експериментальних технологій художньої емалі формує розвиток новітнього українського ювелірного мистецтва, відкриваючи нові творчі форми потенціалу художників кінця ХХ – початку ХХІ століття в світовому історико-культурному контексті, підкреслюючи індивідуальну манеру та високий технічний рівень виконання ювелірних творів

**Ключові слова:** візантійське та давньоруське емальєрство; технології; традиції; експериментаторство; інновації; техніки, ювелірне мистецтво