

SHIRU WANG

ORCID: 0000-0002-2312-3869

Kyiv National University of Construction and Architecture, Ukraine

ANDREI VICTOR SANDU

ORCID: 0000-0002-9292-749X

Gheorghe Asachi Technical University of Iasi, Romania

ANETA PAWŁOWSKA

ORCID: 0000-0003-2847-4403

University of Lodz, Poland

PAVOL TIŠLIAR

ORCID: 0000-0002-0886-7499

Masaryk University in Brno, Czech Republic

MAREK PABICH

ORCID: 0000-0003-2831-2826

Lodz University of Technology, Poland

OLEKSANDR IVASHKO

ORCID: 0000-0002-9194-2153

Kyiv National University of Construction and Architecture, Ukraine

THE UNIQUE MUSEUM COMPLEX DUNHUANG AND ITS INFLUENCE ON CHINESE ARCHITECTURE AND ART

UNIKALNY KOMPLEKS MUZEALNY DUNHUANG I JEGO WPŁYW NA CHIŃSKĄ ARCHITEKTURĘ I SZTUKĘ

Abstract

In the Dunhuang mural painting, the development of the figurative concept took place from the direct borrowing of the Indian Buddhist figurative concept at an early stage to the gradual appearance of local layering and other external borrowings (such as the concepts of Tibetan Buddhism during the reign of the foreign dynasties Xi Xia and Yuan), resulting in the canonical mural painting gradually moving away from the Indian canons of Buddhist frescoes, elements of local Taoism and mythological subjects appeared in it.

These processes took place against the background of the general development of Dunhuang mural painting from greater primitivism, direct borrowing of ancient Indian fresco techniques and symbolism to the improvement and complication of images and fresco execution techniques, from convention to realism, from the addition of religious and mythological subjects with portraits of founders, historical scenes and landscapes. The local painting techniques of the Central Plains of China had a strong influence.

Keywords: national identity, external influences, architecture, temple complex, Dunhuang

Streszczenie

W malowidle ściennym z Dunhuang rozwój koncepcji figuratywnej nastąpił od bezpośredniego zapożyczenia indyjskiej buddyjskiej koncepcji figuratywnej na wczesnym etapie do stopniowego pojawiania się lokalnych warstw i innych zewnętrznych zapożyczeń (takich jak koncepcje buddyzmu tybetańskiego za panowania obcych dynastii Xi Xia i Yuan), w wyniku czego kanoniczne malowidło ścienne stopniowo odchodziło od indyjskich kanonów fresków buddyjskich, pojawiały się w nim elementy lokalnego taoizmu i tematyki mitologicznej.

Procesy te zachodziły na tle ogólnego rozwoju malarstwa ściennego Dunhuang od większego prymitywizmu, bezpośredniego zapożyczania starożytnych indyjskich technik freskowych i symboliki po udoskonalanie i komplikowanie obrazów i technik wykonywania fresków, od konwencji do realizmu, od dodania tematyki religijnej i mitologicznej z portretami założycieli, scenami historycznymi i pejzażami. Duży wpływ wywarły lokalne techniki malarskie z Centralnych Równin Chin.

Słowa kluczowe: tożsamość narodowa, wpływy zewnętrzne, architektura, zespół świątynny, Dunhuang

1. INTRODUCTION

The uniqueness of the Dunhuang Buddhist temple complex is that it is the world's largest collection of Buddhist art and artifacts from the 4th to the 14th centuries in an authentic (rather than a specialized museum) environment. In this sense, Dunhuang can be compared with Pompeii as a similar example of a museum environment not specially created for exposition.

During its thousand-year development, Dunhuang was treated precisely as a sacred and not a museum space, it acquired such functions only at the beginning of the 20th century, when before that it stood in an abandoned state for several centuries.

The authors drew attention to a rather unusual function of Dunhuang in today's conditions, which in principle is not typical for museum collections, namely, the rather growing influence of Dunhuang art, namely fresco wall painting, on modern Chinese art and design. This is a unique example because, say, Japan is dominated by modern design trends and no one implements on a mass scale images of geishas or samurai on works of modern design or objects of general use. Instead, the subjects of the frescoes of the Dunhuang sanctuaries inspired modern Chinese artists, and became the subject of porcelain products, interior design, and clothes of famous fashion designers, they are even used in bookmarks for books and computer games.

So, before us is a unique example of when architectural aesthetic features became so important for a local culture that they provided themes for modern works of art and design.

And here we can draw a parallel with the use of modified forms of traditional Chinese architecture in the modern architecture of China since these are two sides of the same phenomenon, namely the line for rethinking one's own cultural heritage at a new level and its revival to revive national features.

Another explanation for the widespread use of Dunhuang frescoes in modern art and design is their variety from period to period, which is why Dunhuang is rightly called the "Encyclopedia of Chinese Buddhist Art". The earliest frescoes of the Northern Liang period (397–439 years) show characteristic features of the so-called Siyu style with semi-nude rather conventional figures without detail, lack of spatial planning, and limited coloristics. Since in the early period of the introduction of Buddhism in China, the dominant teachings were Taoism and Confucianism, at first Buddhism was perceived by the population as a rather exotic style, and its development in subsequent periods was conditioned by the support of

local rulers. The early frescoes of the sanctuaries were directly influenced by the Buddhist frescoes of India, but gradually they underwent transformations under the influence of Chinese traditions and painting techniques, which is clearly visible in the frescoes of the Sui and Tang periods.

Such attention to the art of Dunhuang in the world is because from sanctuary to sanctuary it is possible to trace how the layout of the sanctuaries improved, the types of floors, structural schemes, wall painting subjects, artistic techniques and sculpture varied, and these changes occurred gradually and organically, under the influence of many factors.

The specific features of the Dunhuang complex and its function in modern China determined the list of sources worked out by the authors, grouped according to the following directions:

- 1) aspects related to the museumization of objects and the so-called “memory of place”;¹
- 2) publications devoted to the art of Dunhuang;²
- 3) characteristics of traditional Chinese architecture and its defining features;
- 4) the influence of Chinese architectural and artistic traditions on the transformation of imported styles;
- 5) publications devoted to fresco wall painting and the study of ancient materials and techniques;³
- 6) the concept of art in the field of restoration.⁴

¹ P. Spiridon, I. Sandu, *Museums in the life of the public*, “International Journal of Conservation Science” 2016, no. 7(1), pp. 87–92; P. Spiridon, I. Sandu, L. Stratulat, *The conscious deterioration and degradation of the cultural heritage*, “International Journal of Conservation Science” 2017, no. 8(1), pp. 81–88.

² 何. 山,《西域文化与敦煌艺术》,湖南美术出版社,长沙1990何山:《西域文化与敦煌艺术》,长沙:湖南美术出版社,1990年版。(S. He, *Western Region Culture and Dunhuang Art*, Hunan Fine Arts Publishing House, Changsha 1990); 段文杰,《1983全国敦煌学术讨论会文集(石窟·艺术编上)》,甘肃人民出版社,1985年版。后收入《段文杰敦煌艺术论文集》及段文杰《敦煌石窟艺术研究》(W. Duan, *The Collected Works of National Dunhuang Academic Symposium in 1983 (Cave, Art Editing)*, Gansu People's Publishing House, Gansu 1985. Later included “Duan Wenjie's Dunhuang Art Papers” and Duan Wenjie's “Research on Dunhuang Grotto Art”); 段文杰,《中国美术全集·敦煌壁画·敦煌彩塑》,上下,上海人民美术出版社,上海 1989年版。(W. Duan, *Chinese Fine Arts Collection Dunhuang Murals (Up and Down) Dunhuang Colour Plastics*, Shanghai People's Fine Arts Press, Shanghai 1989); 谢生保、凌元,《敦煌艺术之最》,甘肃人民美术出版社,甘 1993年版。(S. Xie, Y. Ling, *The Most Dunhuang Art*, Gansu People's Fine Arts Publishing House, Gansu 1993); S. Wang et al., *Methods for the preservation and restoration of Dunhuang wall paintings: Foreign experience*, “International Journal of Conservation Science” 2024, no. 15(1), pp. 731–748.

³ M. Krupa et al., *Sacrality, Mythologism and realism of mural painting of the Han Dynasty and its influence on the further development of Chinese art and architecture = Sakralność, mitologizm i realizm. Malarstwo ścienne dynastii Han i jej wpływ na dalszy rozwój chińskiej sztuki i architektury*, “Wiadomości Konserwatorskie – Journal of Heritage Conservation” 2020, no. 63, pp. 116–124; I. Sandu et al., *New materials for finishing of ancient monuments and process of obtaining and applying*, “International Journal of Conservation Science” 2021, no. 12(4), pp. 1249–1258; Y. Ding, I.G. Sandu, *Genesis of images and technique of ancient Chinese wall painting*, “International Journal of Conservation Science” 2021, no. 12(4), pp. 1309–1326; M. Orlenko, Y. Ivashko, Y. Ding, *Fresco wall painting and its regional modifications*, “International Journal of Conservation Science” 2022, no. 13(1), pp. 57–72.

⁴ M. Orlenko, Y. Ivashko, *The concept of art and works of art in the theory of art and in the restoration industry*, “Art Inquiry. Recherches sur les arts” 2019, vol. XXI, pp. 171–190.

However, these sources explore the historical, artistic, and restoration aspects of the Dunhuang sanctuaries, but overlook an unusual aspect of their influence on contemporary Chinese art and design.

2. BRIEF DESCRIPTION OF THE SANCTUARY OF DUNHUANG AS A UNIQUE CULTURAL PHENOMENON

At present, global architectural trends have also made their way to China. While these trends offer significant benefits, they also come with drawbacks, such as the loss of distinctive national characteristics in architecture. This has resulted in a scenario where national features have been reduced to mere design elements, primarily found in public buildings intended to attract tourists.⁵



Ill. 1. A fragment of a fresco from the Northern Liang period (early period). Cave 272, source: Dunhuang Research Academy Collection.

Under the common name “caves (or grottoes) of Dunhuang” they mean a combination of several cave complexes: Mogao Cave, Yulin Cave, and Western Thousand Buddha Caves (Xī Qiānfó Dòng), that is, from a set of structurally perfect and artistically decorated sanctuaries, where the layout, type of overlap is well thought out, arrangement of wall paintings

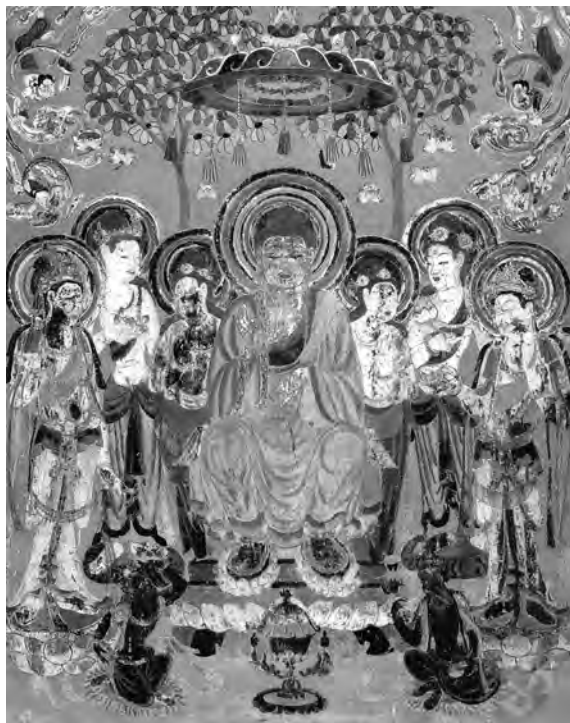
⁵ P. Spiridon, I. Sandu, L. Stratulat, *The conscious..., op. cit.*

in combination with sculpture. The sanctuaries were formed during the reigns of eleven dynasties, both local and foreign Mongolian (Xi Xia and Yuan).

Despite the fact that the sanctuaries are decorated with Buddhist sculptures, their main asset, which actually raised the Dunhuang complex to the world level, was the mural painting based on natural mineral pigments. This is another uniqueness of Dunhuang – it is not only a visual encyclopaedia of Chinese frescoes during its thousand-year development, but also a treasure trove of Chinese painting pigment samples for a thousand years, which testifies to the achievement of mineral painting techniques in Ancient China. According to pigment analysis, more than 30 pigments were used in the frescoes, most of them from natural minerals and only a few types of synthetic chemical dyes.

The colour of Dunhuang's frescoes depended on the mineral pigments used: azurite, malachite, cinnabar, vermilion, toothless shell powder, gold, silver and mica. In early frescoes, malachite and ultramarine pigments were used to paint the background, and laterite, cinnabar, lapis lazuli, azurite, copper (copper chloride, emerald copper), and kaolin pigments played the main role (Ill. 1).

White powder with the colour of laterite acted as the main tone. The requirements for wall paintings of the early period were saturated bright colours with a certain naivety and conventionality of the images. The colour gamut of pure colours without halftones was limited. It is in the early period that colour ratios, relationships between colour, point and line, colour and line are established. It was the early period of fresco wall painting that laid the basic foundation for the wall paintings of the heyday of the Sui and Tang periods (Ill. 2).



Ill. 2. A fragment of a fresco from the Early Tang period (mid heyday). Cave 322, source: Dunhuang Research Academy Collection.

The heyday of Dunhuang mural painting also called the middle period, is the Sui and Tang periods, when the technicians borrowed the assets of the early period and enriched them with the local art traditions of the Central Plains. In these periods, compositions become more complicated, attention is paid to detailing, the perspective of planar frescoes, and the circular palette is enriched with the introduction of halftones. Colours become more delicate and lighter. During the Sui period, new styles of wall painting were introduced, especially in terms of colour solutions. In addition to such pigments as laterite and azurite, new ones are added – khaki colour, gold, and silver colours, in the sculptures of Buddha and people, plates of gold leaf are used to decorate headdresses and clothes.

The peak period of Dunhuang art and design was in the Tang period, most of the frescoes of this period were made in the concave and convex technique of the Xiui region. Compositions become multi-figure, multi-faceted, with observance of the laws of perspective and detail. Both cold and warm colours are used, effects of nuance and contrast are used, and materials for wall paintings are becoming more expensive. In addition to the already-known pigments, new ones are used, such as lead, copper, and soot.

The style of Dunhuang murals was influenced by external factors, such as the decline of the state and the subsequent rise to power of the Mongol dynasties Xi Xia and Yuan. Although the arrival of these dynasties contributed to a certain revival of Dunhuang after a period of decline and a decrease in the artistic level of techniques, the style of the frescoes changed radically. It acquired the character of Tibetan Tantrism with a thick layer of colour, linear drawing, certain conventionality, and mysticism. At the same time, the artistic techniques of the Central Plains are present in the frescoes of the late period with the dominance of linear drawing of the plot and the secondary role of colour filling.

The frescoes of the late period no longer have the grandeur of the previous period of prosperity, but they are marked by calmness, although with a decrease in the brightness of colours.

Thus, it is possible to trace the gradual merging of first Indian fresco techniques in the early period, and later Tibetan techniques in the late period with the local techniques and artistic techniques of the Central Plains. Similarly, the early style of painting of the Sioux regions gradually merged with the style of the Central Plains of Central China and formed the basis of traditional Chinese painting, proving the important role of mineral pigments, which are characterized by colour stability and brightness, which corresponded to Buddhist religious doctrine. These techniques gave rise to the zhongcai hua style of painting.

Thus, Dunhuang became a centre of cultural exchange between many cultures. However, despite its uniqueness, during the Ming and Qing periods, the complex fell into disrepair and became known only at the beginning of the 20th century thanks to famous Chinese artists, who became the first researchers of Dunhuang, creating copies of frescoes, which are still an important basis for their protection and restoration. The Dunhuang Institute for Research, Protection, and Restoration of the Complex was established only in the 1940s, but still many problems remain unsolved.

3. THE USE OF DUNHUANG TRADITIONS IN CHINESE CONTEMPORARY ART AND DESIGN

We can talk about the influence of Dunhuang art on modern Chinese art since the beginning of the 20th century when Chinese artists faced a dilemma: whether to imitate European

artistic models or national models. The solution to the problem was the discovery of the unique Dunhuang wall painting, and prominent Chinese artists began to visit the caves, copy the murals, and use them to create their own artistic style on a national basis. After centuries of the “secondary status” of Chinese culture in the world, Dunhuang made a clear and strong statement about Chinese art in the world, and this is due to the great merit of the artists Li Dinglun (Ill. 3), Zhang Daqiang (Ill. 4), Chang Shuhong and many others who with her enthusiasm in the study and popularization of Dunhuang and his wall paintings, she encouraged many followers. At first, they were artists, later historians, art critics, restorers, and designers joined.



Ill. 3. Copies of Dunhuang frescoes. Artist Li Dinglun. From the stocks of S. Wang.

Li Dinglun was the first to make copies of the frescoes of the sanctuaries, and Zhang Daqian was the second, who approached the study of the frescoes scientifically, applying the methods of restorers to copy the frescoes and numbering the grottoes in detail. He carried out these works for 2.5 years. It also influenced his own painting style.

It was Zhang Daqian who started the system when artists first studied the style of Dunhuang’s murals, and then, under its influence, created their own original style, which, although it was not a direct repetition of frescoes, but artistically transformed and used the techniques of applying compositional construction, planning, lines and colour.



Ill. 4. Copies of Dunhuang frescoes. Artist Zhang Daqian, source: 张大千临摹敦煌壁画高清作品集 [in:] 中國徐悲鴻畫, http://www.xu-beihong.com/News_show.asp?id=2605 (access: 11.10.2020).

An extraordinary role in the popularization of the Dunhuang complex was played by the artist Chang Shuhong, who is called the “patron saint of Dunhuang”. Brought up on European art, he dramatically changed the vector of creative preferences after viewing the Dunhuang artifacts in the Guimet Museum (Musée Guimet). Returning from Paris to China, he devoted his life to the study and preservation of the Dunhuang frescoes, popularizing them as the quintessence of national art, represented in more than 500 shrines.

Modern artists adopted the views of their predecessors but improved them. Thus, one of the modern artists, Hou Li Ming, noted: “It is not easy to imitate the traditional spirit by wearing ancient clothes. Imitation often leads artists to nothingness and confusion...”

Today, another artistic direction under the influence of Dunhuang murals is the Chinese painting “Gōngbǐ zhòngcǎi”, where a special role is given to mineral colours.

Modern painting “Gōngbǐ zhòngcǎi” uses the following basic techniques:

1) “Fùxīng fǎ” (painting method), which imitates “Yūn rǎn fǎ” (retouching or shading technique) – the painting method in Dunhuang murals;

2) “Méi gǔ huà fǎ” (non-linear method), imitates the multi-colour spots of Dunhuang frescoes;

3) the expansion of the palette of pigments from traditional Chinese minerals to materials from the Siyu regions, the use of artificial imitation mineral pigments, metal foil using chemical methods that enhance its resemblance to gold, as in the Dunhuang frescoes; the use of an expanded colour palette of mineral pigments – in ancient frescoes it is azurite, malachite, cinnabar, vermilion, toothless shell powder, gold and silver, in modern works – more than 3000 types of pigments with different shades;

4) imitation of the “heavy” background colour of Dunhuang’s frescoes and the transformation of a two-dimensional image into a three-dimensional one.

The influence of Dunhuang’s frescoes is felt not only in painting but also in interior design. An example is the design of the ceiling in the upper part of the Banquet Hall of the Great Hall of the People (*Rénmín dàhuì táng*), which essentially reinterprets the plot with the lotus flower (Ill. 5).



Ill. 5. The ceiling in the upper part of the Banquet Hall of the Great Hall of the People. From the stocks of S. Wang.

Dunhuang’s frescoes became images for design objects (Ill. 6), and furnishings, they entered the digital space. As an example, we can cite “Digital Dunhuang”, where all sanctuaries have been digitized and a “virtual tour” of Dunhuang has been created. Also, the Dunhuang Institute and the Chinese company Tencent have developed an animated film about the Dunhuang murals, which introduces the unique collection of Buddhist art to users around the world who do not have the opportunity to visit Dunhuang live.

The plots and heroes of Dunhuang’s frescoes have even become characters in popular computer games, on their basis they create collections of clothes, household items, and glazed porcelain products. Porcelain high-temperature glaze is characterized by rich colours and can convey the rich colours of frescoes (Ill. 7).



III. 6. A lamp with the scene of the Dunhuang fresco. From the stocks of S. Wang.



III. 7. Coloured glazed porcelain painting "The Lost Dream of Dunhuang". Artist Yao Lihua. From the stocks of S. Wang.

The spread of Dunhuang subjects in porcelain products and paintings is explained by the ancient Chinese traditions of making porcelain dishes and vases, and Dunhuang frescoes gave impetus to new themes of this art.

An important direction of art became the production of porcelain multi-coloured glazed plates (Ill. 8–10).



Ill. 8. Porcelain plate “Xianyue (Fairy Music) of Dunhuang”. Artist Fan Weigo. From the stocks of S. Wang.



Ill. 9. Porcelain plate “Feitian Dunhuang”. Artist Fan Weigo. From the stocks of S. Wang.



III. 10. Left: Bodhisattva Holding Lotus (high-temperature coloured glaze porcelain plate before firing); right: porcelain plate with high-temperature coloured glaze after firing, source: 颜色釉作画新天地 瓷上敦煌绽异彩[in:] 中国周, <http://www.chinaweekly.cn/7355.html> (access: 8.10.2018).

4. CONCLUSIONS

The uniqueness of Dunhuang's frescoes lies in the fact that, unlike Western art, they use a different principle of artistic expressiveness, which is a combination of lines, coloured spots and dots. Such ancient techniques were used as the form without filling in colour, only with the outline of lines, as well as the techniques of local techniques in combination with borrowed ones, the use of pure natural mineral pigments obtained by grinding natural minerals into powder, which ensured the brightness and durability of colours.

Dunhuang has become a visual encyclopaedia of Buddhist art, a complex that reflects the complex process of the genesis of Buddhist frescoes over a thousand years and, due to its uniqueness, has become a source of inspiration for Chinese designers and artists today.

The lines, bright colour palette, subjects, compositions, and patterns of Dunhuang's frescoes became the source of new ideas of modern Chinese design and art, combining ancient traditions and modern manufacturing technologies.

We have a unique example that has no analogues in the world: when an architectural object became a popular source of inspiration in many fields, such as interior design, design of art and household items, printing design, clothing design, etc.

References

- [1] Ding Y. et al., *Specificity of the construction of historical temples of Shaanxi Province as the basis of their preservation and restoration*, “International Journal of Conservation Science” 2023, no. 14(2), pp. 435–452.
- [2] Ding Y., Sandu I.G., *Genesis of images and technique of ancient Chinese wall painting*, “International Journal of Conservation Science” 2021, no. 12(4), pp. 1309–1326.
- [3] Krupa M. et al., *Sacrality, Mythologism and realism of mural painting of the Han Dynasty and its influence on the further development of Chinese art and architecture = Sakralność, mitologizm i realizm. Malarstwo ścienne dynastii Han i jej wpływ na dalszy rozwój chińskiej sztuki i architektury*, “Wiadomości Konserwatorskie – Journal of Heritage Conservation” 2020, no. 63, pp. 116–124.
- [4] Li Q., *Chinese pavilions*. China Architecture and Building Press, Beijing 2019.
- [5] Orlenko M. et al., *Rational and aesthetic principles of form-making in traditional Chinese architecture as the basis of restoration activities*, “International Journal of Conservation Science” 2020, no. 11(2), pp. 499–512.
- [6] Orlenko M., Ivashko Y., Ding Y., *Fresco wall painting and its regional modifications*, “International Journal of Conservation Science” 2022, no. 13(1), pp. 57–72.
- [7] Orlenko M., Ivashko Y., *The concept of art and works of art in the theory of art and in the restoration industry*, “Art Inquiry. Recherches sur les arts” 2019, vol. XXI, pp. 171–190.
- [8] Sandu I. et al., *Analysis of the wall painting of the Dunhuang fresco as a basis for its preservation and restoration*, “International Journal of Conservation Science” 2024, vol. 15, special issue, pp. 371–388.
- [9] Sandu I. et al., *New materials for finishing of ancient monuments and process of obtaining and applying*, “International Journal of Conservation Science” 2021, no. 12(4), pp. 1249–1258.
- [10] Spiridon P., Sandu I., *Museums in the life of the public*, “International Journal of Conservation Science” 2016, no. 7(1), pp. 87–92.
- [11] Spiridon P., Sandu I., Stratulat L., *The conscious deterioration and degradation of the cultural heritage*, “International Journal of Conservation Science” 2017, no. 8(1), pp. 81–88.
- [12] Wang S. et al., *Methods for the preservation and restoration of Dunhuang wall paintings: Foreign experience*, “International Journal of Conservation Science” 2024, no. 15(1), pp. 731–748.
- [13] 山 何., 《西域文化与敦煌艺术》, 湖南美术出版社, 长沙1990 (He S., *Western Region Culture and Dunhuang Art*, Hunan Fine Arts Publishing House, Changsha 1990).
- [14] 张大千临摹敦煌壁画高清图作品集 [in:] 中国徐悲鸿画院, http://www.xu-beihong.com/News_show.asp?id=2605 (access: 11.10.2020).
- [15] 段文杰, 《1983全国敦煌学术讨论会文集(石窟·艺术编上)》, 甘肃人民出版社, 1985年版。后收入《段文杰敦煌艺术论文集》及段文杰《敦煌石窟艺术研究》(Duan W., “The Collected Works of National Dunhuang Academic Symposium in 1983 (Cave, Art Editing)”, Gansu People’s Publishing House, published in August 1985. Later included “Duan Wenjie’s Dunhuang Art Papers” and Duan Wenjie’s “Research on Dunhuang Grotto Art”).
- [16] 段文杰, 《中国美术全集·敦煌壁画·敦煌彩塑》, 上下, 上海人民美术出版社, 上海 1989年版。(Duan W., *Chinese Fine Arts Collection Dunhuang Murals (Up and Down) Dunhuang Colour Plastics*, Shanghai People’s Fine Arts Press, Shanghai 1989).
- [17] 谢生保、凌元, 《敦煌艺术之最》, 甘肃人民美术出版社, 甘 1993年版。(Xie Shengbao, Ling Yuan compiled “The Most Dunhuang Art”, Gansu People’s Fine Arts Publishing House, Gansu 1993).
- [18] 颜色釉作画新天地 瓷上敦煌绽异彩[in:] 中国周刊, <http://www.chinaweekly.cn/7355.html> (access: 8.10.2018).

Author's Note

Wang Shiru, PhD

Author of 13 scientific publications about architecture and Art of Dunhuang in the scientometric journals SCOPUS and Web of science, participant of the innovation forum "Euroinvent".

wangshiru923@163.com

Andrei Victor Sandu, BEng, PhD

Habilitated associate professor at the Faculty of Materials Science and Engineering, Technical University "Gheorghe Asachi" of Iași. He earned his PhD in Materials Engineering in 2012 with summa cum laude. He has authored over 450 scientific articles, with more than 400 indexed by SCOPUS and over 300 by ISI Web of Science, achieving an h-index of 30. He holds 42 patents and 10 patent applications in Romania, R. Moldova, and Malaysia, and has published 12 books, including 4 in the USA. He is a publishing editor for the International Journal of Conservation Science and the European Journal of Materials Science and Engineering, and reviews for over 20 journals. He is a visiting professor at Universiti Malaysia Perlis, President of the Romanian Inventors Forum, and a Senior Researcher at INCDPM.

sav@tuiasi.ro

Prof. Aneta Pawlowska, PhD, DSc

Art historian, Professor at the University of Lodz. Leader of the project "Friendly City. Supporting the independence of visually impaired people". Author of over 120 articles in monographs and journals, and author and co-author of 11 monographs. Fields of interest: 19th- and 20th-century Polish art, traditional art and culture of South Africa, and audio description and accessibility of works of art.

aneta.pawlowska@uni.lodz.pl

Prof. Pavol Tišliar, PhD

A distinguished scholar in archives, auxiliary historical sciences, and history. He became an associate professor in 2005 and a professor of Slovak history in 2015. Since 2018, he has been a professor at the Department of Archaeology and Museology at Masaryk University, Czech Republic. Previously, he taught at Comenius University in Bratislava and the University of Ss. Cyril and Methodius in Trnava, Slovakia, where he led studies in museology and auxiliary historical sciences. He has held leadership roles, including Head of the Department of Ethnology and Museology and Vice Dean for Science and Doctoral Studies. He has directed nearly 30 scientific projects, focusing on museum studies and Slovak history, and has authored over 40 monographs and 200 articles. He is the editor-in-chief of the journal «Museology and Cultural Heritage» and serves on the boards of over 20 scientific societies and journals.

tisliar@phil.muni.cz

Prof. Marek Pabich, PhD, DSc, Arch.

Architect, director of the Institute of Architecture and Urban Planning at the Lodz University of Technology. Author of over a hundred scientific publications on museum architecture and contemporary architecture. Author of museum buildings (including the Museum of Photography in Krakow, the Westerplatte Museum in Gdańsk – a project awarded in a competition under development) and university buildings.

marek.pabich@p.lodz.pl

Oleksandr Ivashko, PhD

Senior lecturer. Author of over 60 scientific articles and other publications. Scientific interests and directions of scientific activity: street art, contemporary art and design, graphic design, art clusters.

ghok2233@gmail.com