

The flurry of photographic patents introduced in the 19th and 20th centuries resembled an avalanche. At present, about 120 types of techniques can be distinguished (black-and-white, colour and monochrome). Most of them are based on the photosensitivity of metal salts, mainly silver, and on three principal binders (commonly referred to as emulsions): albumen, collodion and gelatine, applied to various substrates: metals, paper, glass, fabric, ceramics, leather, celluloid, polyester foil, and more. At the end of the 19th century the choice of substrate depended only on one's creativity. In 1906 a reader of *Fotograf Warszawski* (*The Warsaw Photographer*) sent the editors of the journal a curious request: "would you be so kind as to advise me how to produce a photographic image on a nail?" to which he received the following reply: "first, one needs to prepare a suitably minimized negative and make a copy of it on detachable celloidin paper. The image suspended in a light gelatine solution has then to be placed on the nail, immersed in the said solution, dried gently, cleaned and coated with highly-diluted varnish".

Although historical black-and-white and colour photographic materials i.e. positives on paper, negatives and films form an important part of our national heritage, they remain, unfortunately, rather obscure from the technical, technological and conservation side. They are currently in a poor state of preservation, manifested in various kinds of physicochemical changes and the presence of microbiological infestations, which is a direct threat to them. In the long run, this may lead to the loss of an important part of the national Heritage (valuable works will cease to exist) and this poses a direct threat of loss of many originals together with the information "enchanted" within.

They are in dire need of intervention of art conservators who do not have sufficient knowledge in this area. Yet the conservation of photographic materials constitutes a daunting challenge due to the sensitivity and highly complex structure of this type of historical objects. Nowadays we are aware of the fact that the application of widely known methods and conservation products in many cases proves inadequate or even harmful to the historical substance of photographic materials. This stems from the huge variety of composition of individual, seemingly alike objects, and their diverse chemical response, sometimes in the form of an extreme chemical reaction to one conservation agent.

It is essential to remember that, all too often, these inconspicuous and currently very damaged photographic materials are a valuable source of knowledge about past times and periods. They are the only credible witness of the past, which allows us to discover stories of bygone eras (places, people and events) and technologies. This is especially relevant nowadays, in the era of digital photography, when we witness classical photographic techniques gradually falling into oblivion. Susan Sontag observed that "what is written about a person or an event is frankly an interpretation, as are handmade visual statements, like paintings and drawings. Photographed images do not seem to be statements about the world so much as pieces of it, miniatures of reality that anyone can make or acquire (...)".

The project aims to gather new knowledge about the above-mentioned photographic materials, their preservation and conservation, and about the above-mentioned issues. It cannot be completed without modern analysis and research and without a properly prepared team. Conservation activities and considerations must be based on a thorough analysis and assessment of "patients". It was noticed a long time ago by the Italian architect and art critic Camillo Boito (1836 - 1914), who compared the once destroyed monuments to sick patients, and called the restoration and restoration treatments treatment. His words are still relevant as they correspond to today's approach to monuments. It assumes diagnostics of the monument (highly specialized analysis and research) as well as protection and conservation (based on technological and conservation research, multi-faceted considerations and, finally, tests on the originals).

That is why the project foresees the application of state-of-the-art non-destructive or micro destructive analysis and instrumental testing techniques, mainly microscopic, spectroscopic and chromatographic, which require only the smallest intervention into the essence of the studied object.

Accurate knowledge of the technology of production, the current condition and the potential cause of damage of historical photographic materials will create the basis for multifaceted theoretical reflections, followed by and practical action leading to the verification of recommended products. The evaluation of selected disinfection and conservation methods will first be carried out on contemporary photographic models, and then on originals.

These actions will be accompanied by the appointment of a new research team, specialised in solving issues related to the identification, preservation and conservation of historical black-and-white and colour photographic materials.

Based on the accumulated knowledge, an open access publications (several publications in Polish and foreign magazines) will be prepared to discuss and summarize the project. It will be aimed primarily at art restorers, photography historians and curators of photo and film collections.