

## INTRODUCTION

*Dear Readers,*

We are pleased to present to our readers the 28th volume of the periodical *Current Problems of Forensic Science* and, as always, invite you to explore its content. This volume features intriguing materials addressing both criminalistic and procedural issues, many of which are particularly relevant to current discussions. On one hand, the articles delve into methodologies for selected forensic examinations, which play a significant role in investigative and judicial practice, influencing the determination of factual circumstances in criminal and civil cases. On the other hand, they explore selected aspects of the highly debated topic in Poland of appointing experts and their opinion preparation, closely tied to the development of a draft law on forensic experts. Notably, all materials are published in both Polish and English.

Among the works included in this volume, studies on forensic handwriting examination form a standout group. Two articles focus on new computer programs designed to enhance the identification of handwriting using graphometric methods while addressing the fundamental issue of objectivity in contemporary forensic research. The authors of the first article, Krystyn, and Andrzej Łuszczuk, highlight in their title the changing role of experts in such research. They discuss a new version of the well-known program GRAFOTYP, called GRAFOTYP 3.0, which significantly reduces subjectivity by automating the designation of analysis points within samples, enabling consistent results regardless of the user. Meanwhile, in the article *Rotometry as a proposal for a new method of verification in handwriting analysis*, Tomasz Łuszczuk and Krystyn Łuszczuk introduce an innovative handwriting analysis method they term “rotometry,” accompanied by two new programs—“ROTOMETR Wk” and “ROTOMETR Pp”. These programs analyze previously established parameters, such as shape coefficients and diagonal proportions, in a novel manner. Readers are encouraged to read the full article to understand why this method is considered groundbreaking and objective, as well as how it could enhance the categorical nature of expert opinions.

Three other publications also address handwriting studies. In the first, titled *Analysis of the formation of the final element of signatures (swirls)—a family factor*, Lithuanian researchers Henryk Malewski, Rasa Tamošiūnaitė, and Snieguolė Matulienė discuss findings from a research project initiated in 2022 on factors influencing the formation of young individuals' signatures. Their earlier publication focused on the potential mimicry and resemblance of young people's signatures to those of family members. Now, they present further research results concerning the development of the signature's final element. Beata Goc-Sakowska, on the other hand, highlights the "surprises" that comparative materials can conceal, emphasizing the need to examine the uniformity of comparative samples (so-called "merging"), which undoubtedly enhances the credibility of handwriting expertise. Lastly, Kateryna Mykytyshyna shares findings on forensic examination of handwritten documents in testamentary cases. Her analysis, based on case studies and surveys among experts, focuses on evaluating the effectiveness of methods used in handwriting examinations and the potential for detecting testament forgery.

The second major focus of this volume is the issue of forensic experts, a subject of particular interest to the author of this introduction. This topic has long been a focal point of the Polish Forensic Society, and the presented articles contribute to the ongoing discussion regarding the draft law on forensic experts. For example, Marcin Jachimowicz, in his article *Categories of experts in criminal proceedings*, discusses the status of experts and outlines various categories, including consulting experts, ad hoc experts, and so-called "private experts." He notes that the current Polish Criminal Procedure Code does not formally distinguish between court-appointed and ad hoc experts. However, the draft law proposes significant changes, favoring the appointment of certified court experts while limiting the use of ad hoc experts to specific legally prescribed situations. Jachimowicz also examines the admissibility of "private expert" opinions, noting that Polish law does not prohibit certified court experts from issuing such opinions. Interestingly, the draft law explicitly permits such "private opinions" (referred to as "party opinions") under certain conditions, even requiring them to be issued by certified court experts in such cases.

Milena Powirska-Bała, discussing the admissibility of scientific evidence in Polish and American legal systems, advocates for harmonizing Polish criminal procedure rules to ensure the admissibility of such evidence—essentially expert opinions—based on reliable and verified scientific methods. Her proposal aligns with the draft law on forensic experts, which envisions that one aspect of certifying candidates as court experts would involve

evaluating their research methods. The draft also proposes establishing standardization teams to eliminate broadly understood “unscientific” practices in expert opinion preparation.

Examples of scientific methods proposed for current and future forensic examinations are detailed in subsequent articles. Agalidi Yuriy, Aleksander Bokszczanin, and Maris Kaminskis, in their article *Forensic studies of magnetic prints based on magnetic measurements*, present an experimental research method developed by a renowned forensic equipment manufacturer. This method uses magneto-optical topograms to identify the source of magnetic printing, detect textual insertions added by other printing devices, and authenticate banknotes with magnetic security features. Meanwhile, Krzysztof Żak and Ireneusz Sołtyszewski discuss the use of DNA analysis in identifying human remains, especially when bodies or their fragments are found under circumstances preventing victim identification. They highlight phenotyping technologies that aim to determine external features such as hair color, eye color, skin tone, biological age, and biogeographic origin, which are crucial when comparative material is unavailable and can narrow the pool of potential suspects.

Finally, the volume concludes with a report on the 20th Jubilee International Congress “Criminalistics and Forensic Expertise: Science, Studies, Practice,” held September 12–14, 2024, at Mykolas Romeris University in Vilnius. The event, organized by the Lithuanian Forensic Society, Mykolas Romeris University, the Lithuanian Forensic Expertise Center, and the Polish Forensic Society, featured the signing of a declaration to join the Palanga Memorandum by the German Forensic Society.

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