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METHODS OF PROTECTING SCIENTIFIC DISCOVERIES IN THE REPUBLIC OF UZBEKISTAN

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Abstract. This article examines approaches to protecting scientific discoveries and related research outcomes in the Republic of Uzbekistan. It distinguishes scientific discoveries from inventions and considers how different forms of intellectual property protection may apply to the practical results of scientific activity. Particular attention is given to patent protection for eligible technical applications, copyright protection for the expression of research findings, and confidentiality measures for undisclosed research information and know-how. The article also discusses the role of institutional policies, contractual arrangements, and documentation in managing research outcomes and establishing the rights and responsibilities of researchers and organizations. It outlines issues requiring consideration when balancing scientific publication, commercialization, and the dissemination of knowledge. The study aims to identify approaches to improving the protection and responsible use of research outcomes within Uzbekistan's scientific and innovation system.

Keywords: scientific discoveries, research outcomes, intellectual property, patent protection, copyright, confidentiality, know-how, technology transfer, Uzbekistan, research commercialization.

Introduction

Scientific discoveries expand human understanding and provide a foundation for technological development. Their practical significance may emerge through new methods, materials, devices, and other applications developed from research findings. Protecting the interests of researchers while supporting the dissemination of knowledge therefore requires a clear distinction between a discovery, its expression in a scientific work, and a technical invention based on that discovery. These outcomes may be closely connected, but they do not necessarily receive the same form of legal protection.

In the Republic of Uzbekistan, this distinction is essential when examining the protection of scientific research. The Law *On Inventions, Utility Models and Industrial Designs*, adopted on 29 August 2002, establishes the legal framework for protecting eligible industrial property objects. Scientific theories and mathematical methods are excluded from recognition as inventions. Accordingly, the scientific importance of a finding does not, by itself, establish its eligibility for patent protection. A technical application developed from research must be assessed against the applicable patentability requirements.

The patent application rules approved by the Minister of Justice on 27 March 2026 reaffirm that an invention must be new, involve an inventive step, and be capable of industrial application. These requirements make the identification of a concrete technical solution particularly important. For research institutions, the relevant question is therefore whether a scientific result has produced

an application that satisfies these conditions, rather than whether the underlying discovery alone deserves scientific recognition.

Copyright provides a different form of protection. Uzbekistan's Law *On Copyright and Related Rights*, adopted on 20 July 2006, protects qualifying scientific, literary, and artistic works. It expressly distinguishes the form of expression from the ideas, principles, methods, processes, systems, and concepts expressed within a work. Thus, copyright protection for an original scientific article or monograph should not be interpreted as exclusive control over the scientific knowledge it communicates. This distinction is important for understanding both the rights of researchers and the conditions under which others may use and develop scientific knowledge.

Confidentiality offers another relevant approach where research information meets the legal conditions for protection as a trade secret. The Law *On Trade Secrets*, adopted on 11 September 2014, defines such information by reference to its commercial value arising from its being unknown to third parties, the absence of lawful free access, and measures taken by its owner to preserve confidentiality. Consequently, unpublished research information is not automatically a trade secret: its status depends on the characteristics of the information and the protective measures established around it.

These distinctions create an important management issue for universities, research institutions, and individual researchers. Decisions concerning publication, technical development, confidentiality, and cooperation with external partners need to reflect the nature of the research outcome. Documentation can help establish research contributions, while institutional procedures can clarify responsibilities for assessing protection options. Scientific recognition and legal exclusivity should nevertheless be evaluated separately, since evidence of a contribution does not necessarily create an exclusive intellectual property right.

The purpose of this article is to examine the mechanisms relevant to protecting scientific discoveries and associated research outcomes in the Republic of Uzbekistan. The study focuses on the boundaries between scientific knowledge, patentable technical applications, protected scientific expression, and confidential information. It also considers how institutional policies and contractual arrangements can support the responsible management of research results. Through this analysis, the article seeks to identify approaches that protect legitimate researcher interests while preserving opportunities for scientific exchange and practical innovation.

Literature review

The literature relevant to protecting scientific discoveries combines the study of scientific knowledge, intellectual property management, and the legal protection of research outcomes. These perspectives address different questions: how discoveries emerge, which associated outputs can receive protection, and how institutions should manage their dissemination and use.

Kuhn's *The Structure of Scientific Revolutions* (2012) provides a conceptual foundation for understanding discoveries within the development of scientific knowledge. His discussion of anomalies and changes in scientific paradigms helps explain why a discovery's significance cannot be reduced to its immediate commercial application. For the present study, this distinction supports the separate assessment of scientific contribution and legal protectability; Kuhn's work itself does not establish intellectual property rights.

Palfrey's *Intellectual Property Strategy* (2011) examines intellectual property as an organizational asset and advocates selecting approaches according to institutional objectives and circumstances. The book addresses patents, copyright, trademarks, and trade secrets within a strategic framework. Applied to research management, this perspective suggests that protection decisions should begin with identifying the specific output involved—a technical solution, an

original scientific text, or confidential know-how—rather than treating all research findings as a single category.

Uzbek scholarship provides a national perspective through *Intellektual mulk huquqi* (2025) by Yakubova, Yuldashov, Bahramova, and Turakulova. The university catalogue describes the textbook as addressing intellectual property protection, including mechanisms for resolving disputes before litigation. Its relevance lies in connecting the management of intellectual assets with the protection and enforcement of rights in Uzbekistan. However, conclusions about particular research outcomes must also be grounded in the applicable legislation.

The legislative sources establish important boundaries between protection mechanisms. Uzbekistan's patent legislation excludes scientific theories and mathematical methods from recognition as inventions, while the patent application rules approved in March 2026 require novelty, an inventive step, and industrial applicability. Copyright legislation protects the expression of qualifying scientific works rather than their underlying ideas, principles, or methods. These provisions support a differentiated approach: a discovery's technical application and its presentation in an original publication require separate legal assessments.

Confidentiality introduces a further dimension. Uzbekistan's Law *On Trade Secrets* links protection to commercially valuable information that is unknown to third parties, unavailable through lawful free access, and subject to confidentiality measures. Read alongside Palfrey's strategic approach, this framework highlights the importance of deliberate information management. Confidentiality cannot simply be presumed from the fact that research remains unpublished.

Together, the reviewed sources support an approach that distinguishes scientific recognition from the protection of identifiable research outputs. The present article builds on this synthesis by examining how patent protection, copyright, and confidentiality can address different aspects of scientific activity in Uzbekistan. Its analytical focus is the coordination of these mechanisms with publication and institutional research management, rather than an assumption that every discovery creates an exclusive legal right.

Research methodology

This study employs a qualitative, desk-based methodology combining doctrinal legal analysis with a focused literature review. The source material comprises the Uzbek legislation and patent application rules discussed in the preceding sections, together with selected books on scientific discoveries and intellectual property management. Legislative sources are used to identify legal requirements, while scholarly publications provide conceptual and institutional perspectives.

Conceptual analysis distinguishes scientific discoveries from technical inventions, the expression of research findings, and confidential know-how. Doctrinal analysis examines the scope and conditions of patent protection, copyright, and trade secret protection in Uzbekistan. These mechanisms are compared according to their protected subject matter, eligibility requirements, and implications for the publication and practical use of research outcomes.

The findings are synthesized to develop recommendations for researchers and research institutions. The study does not include interviews, surveys, judicial case analysis, or original statistical data. Its conclusions therefore concern the interpretation and coordination of protection mechanisms rather than their measured effectiveness in practice. They are also limited to the legal texts and scholarly sources reviewed.

Analysis and results

The analysis of the reviewed legislation and literature indicates that the protection of scientific discoveries in Uzbekistan requires a differentiated approach. A scientific finding, a technical application developed from it, an original publication describing it, and confidential

research information constitute different objects of assessment. Consequently, the appropriate protection mechanism depends on the characteristics of the particular research output. Scientific significance alone does not establish eligibility for every form of intellectual property protection.

The first finding concerns the distinction between scientific knowledge and patentable technical solutions. Uzbekistan's Law *On Inventions, Utility Models and Industrial Designs* excludes scientific theories and mathematical methods from recognition as inventions. The patent application rules approved on 27 March 2026 specify novelty, an inventive step, and industrial applicability as conditions for protecting an invention. These provisions support the conclusion that a research finding must be assessed separately from any technical application developed from it. A discovery may provide the basis for a potentially patentable device or process, but protection depends on whether that application satisfies the relevant requirements.

This distinction has practical implications for research evaluation. Institutions should identify the technical problem addressed by an application, the proposed solution, and the evidence supporting its development. Scientific originality and patent novelty should not be treated as interchangeable concepts. Likewise, recognition of a researcher's contribution does not automatically establish a patent right. The analysis therefore suggests that scientific assessment and patentability assessment should be coordinated while retaining their different purposes.

The second finding relates to copyright protection. Uzbekistan's Law *On Copyright and Related Rights* applies to qualifying scientific works but protects their expression rather than the underlying ideas, principles, methods, processes, systems, or concepts. An original article, monograph, or research presentation may therefore contain protected expression without granting its author exclusive control over the knowledge communicated. This boundary is essential when examining unauthorized copying: reproducing protected text and independently applying a scientific idea raise different questions.

The third finding concerns confidential research information. Under Uzbekistan's Law *On Trade Secrets*, protection depends on information having commercial value because it is unknown to third parties, being unavailable through lawful free access, and being subject to confidentiality measures taken by its owner. Accordingly, unpublished status alone is insufficient to establish trade secret protection. Research institutions must assess both the nature of the information and the measures used to control access and disclosure.

Table 1

Summarizes the distinctions identified through the documentary analysis.

Research output	Relevant protection mechanism	Main condition or boundary	Institutional implication
Scientific theory or mathematical method	Scientific attribution and documentation; excluded from recognition as an invention	Scientific significance does not establish patent eligibility	Document contributions and assess associated technical applications separately
Technical application arising from research	Patent protection, where eligible	Novelty, inventive step, and industrial applicability	Conduct a patentability assessment
Original scientific article or monograph	Copyright	Protection concerns expression rather than underlying ideas or	Distinguish reproduction of protected expression

		methods	from use of scientific knowledge
Confidential research information or know-how	Trade secret protection, where conditions are met	Commercial value arising from secrecy, restricted lawful access, and confidentiality measures	Establish and maintain appropriate information controls

Source: *Author's synthesis of the Uzbek legislative provisions reviewed in this study. The table presents legal distinctions and analytical implications, rather than measured outcomes.*

The fourth finding is that documentation supports the management of research contributions but should not be confused with the creation of exclusive rights. Dated research records, identifiable versions of manuscripts, and written descriptions of individual contributions can help organize evidence concerning the development of a research result. Within the framework of this study, their role is evidentiary and administrative. Their existence does not replace the requirements governing patent protection, copyright, or trade secrets, and this study does not assess their weight in particular disputes.

The fifth finding concerns the coordination of publication and protection decisions. Publication disseminates scientific knowledge, whereas confidentiality depends on maintaining restricted access to qualifying information. These objectives can require different treatment of different parts of a research project. The analysis suggests that institutions should review the intended disclosure and identify any potentially protectable technical applications or confidential information before publication. Such a review would support informed decisions without assuming that all research should remain confidential.

The reviewed literature also supports selecting protection approaches according to institutional objectives. Palfrey's *Intellectual Property Strategy* treats intellectual property management as a context-dependent organizational activity. Applied to Uzbekistan's research institutions, this perspective suggests that decisions should consider the nature of the output, its intended users, development needs, and dissemination objectives. A single project may therefore require several coordinated measures, each addressing a distinct asset.

The principal analytical result is a framework in which protection begins with identifying the research output and then examining the conditions of the relevant mechanism. Patents address eligible technical inventions; copyright addresses protected expression; and trade secret rules address qualifying confidential information. Documentation and institutional procedures support the coordination of these mechanisms. Because the study does not examine judicial decisions or institutional performance data, it cannot establish their practical effectiveness or the prevalence of protection problems in Uzbekistan. Its contribution is to clarify the boundaries that should guide subsequent empirical research and institutional decision-making.

Conclusion and recommendations

The study concludes that protecting scientific discoveries and associated research outcomes in the Republic of Uzbekistan requires identifying the specific object for which protection is sought. Scientific knowledge, a technical invention, an original publication, and confidential know-how have different characteristics and must be assessed under the relevant legal framework. Scientific significance and recognition of a researcher's contribution do not, by themselves, establish an exclusive intellectual property right.

The documentary analysis identifies three complementary protection mechanisms. Patent protection concerns eligible technical inventions, copyright protects the original expression of

scientific works, and trade secret protection applies to information that meets the conditions for confidentiality. Documentation and institutional procedures support the management of these mechanisms but do not replace their legal requirements. Effective research management therefore requires coordinating protection decisions with publication, collaboration, and practical application.

Based on these findings, the following recommendations are proposed.

First, universities and research institutions should introduce a structured assessment of research outputs. This assessment should distinguish the scientific finding from its technical applications, written expression, and potentially confidential information. Each component should then be considered under the appropriate protection mechanism.

Second, institutions should review potentially protectable outputs before public disclosure. Researchers and responsible specialists should jointly identify technical applications requiring patentability assessment and information that may warrant confidentiality. Publication decisions should reflect both protection opportunities and the institution's scientific mission.

Third, institutional policies should clearly define responsibilities for recording contributions, assessing ownership, managing confidential information, and authorizing external use. Research records and version histories should be maintained consistently to support traceability and evidence concerning the development of results.

Fourth, confidentiality measures should be specific and proportionate. Institutions should identify the information requiring restricted access, establish responsibilities for its handling, and use appropriate contractual arrangements with employees and external partners. Unpublished status should not be treated as sufficient evidence of trade secret protection.

Fifth, training should strengthen researchers' understanding of the boundaries between intellectual property mechanisms. Particular attention should be given to the distinction between protecting scientific expression and controlling underlying knowledge, as well as the difference between scientific originality and patentability.

Finally, future research should examine institutional practices and relevant disputes through case studies, interviews, and analysis of judicial decisions. Such evidence would help determine how protection mechanisms operate in practice and which organizational measures produce useful results. Since the present study is based on documentary analysis, its recommendations constitute an analytical framework rather than empirically verified measures of effectiveness.

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