



MUHAMMAD AL-XORAZMIY NOMIDAGI  
TOSHKENT AXBOROT TEXNOLOGIYALARI UNIVERSITETI  
NUKUS FILIALI



# «XALQ XO'JALIGI SOHASIDA ILG'OR TEXNOLOGIYALAR TADBIQI MUAMMOLARI»

MAVZUSIDAGI HUDUDIIY ILMIIY-TEXNIK KONFERENSIYASI

## MA'RUZALAR TO'PLAMI



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va innovatsion yechimlar



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"Chorvachilik komplekslarini  
elektron boshqarishning mobil  
ilovasini yaratish" innovatsion  
loyiha doirasida olib borilgan  
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### ANALYSIS OF THREATS OF ECONOMIC SECURITY

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**Annotation.** The article analyzes the negative factors and threats to the economic security of small businesses. Relevant conclusions and proposals for planning a set of measures to optimize some aspects of prevention, planning and management of possible damage are given

**Keywords:** small business, economic security, threats, negative factors, damage, internal threat, external threat

**Introduction.** Many scientific studies are being conducted by the world’s leading scientific centers and research institutions, specialists and scientists to ensure economic security in business entities. Among the many factors that hinder the sustainable development of business entities, there are systems that threaten economic security: increasing structural deformation of the country’s economy, decrease in investment and innovation activity of enterprises, scientific and technical competence of the country, increasing property stratification in society, announced for business entities. Among them are such scientific directions as the violation of moratoriums, the lack of attention to ensuring financial stability.

Ensuring the economic security of the activities of small enterprises in

Uzbekistan is an important link in the sustainable development of the industry. In this regard, special attention is being paid to "Measures to further improve the business environment in the country and to improve the entrepreneurship support system". To ensure the stability of small business entities and to protect the sector's economy from

threats, as defined in the Strategy of Actions on the five priority directions of the development of the Republic of Uzbekistan "Reducing state participation in the economy, protecting private property rights and further strengthening its priority position, small business and private will play a leading role in fulfilling the tasks of continuing institutional and structural reforms aimed at stimulating the development of entrepreneurship.

**Materials and methodology.** As we mentioned above, the economic security of the enterprise is the state of the most efficient use of resources to prevent threats and ensure the stable operation of the enterprise. Threats to economic security are a combination of external and internal factors that negatively affect the normal operation of the enterprise and its existence. Risk should be understood as the consequences of actions or inactions that have a real possibility of obtaining uncertain results of a different nature that have a positive or negative impact on the financial and economic activity of the enterprise. From the above definition, it is possible to distinguish the main elements that make up the essence of the concept of "risk".

- 1) the probability that the chosen alternative deviates from the realized goal;
- 2) the probability of achieving the desired result;
- 3) lack of confidence in achieving the goal;
- 4) the possibility of material, moral and other losses related to the implementation of the chosen alternative in conditions of uncertainty.

**Results.** External threats to the economic security of the enterprise occur outside the enterprise. Internal threats are the sum of the negative consequences of the internal problems of the enterprise. Force majeure is one of the threats to economic security caused by emergency situations.

In particular, small businesses are characterized by the following threats:

- 1) use of administrative opportunities for profit;
- 2) using administrative opportunities to increase pressure on so-called competitors or raiders; increased administrative risks. These are changes in legal documents, regulatory documents, changes in administrative and supervisory bodies, changes in its position in relation to the company for any reason;
- 3) dependence of the enterprise on officials or intermediaries, including its employees.

**Discussions.** Most small businesses specialize in one area. It also poses

certain threats:

- 1) increased competition in the market of products produced by a highly specialized enterprise;
- 2) increased competition in the region is important in cases where the transportation of these products leads to a significant increase in prices for the consumer (primary industry, production of a number of goods);
- 3) decrease in demand for manufactured products due to objective reasons;
- 4) unfair competition in all its forms;
- 5) monopolization of the market.

**Conclusion.** Various criteria can be used to assess risks and threats to economic security. The selection of the criteria involves assigning a sign or a set of signs to each threat, based on which a conclusion is made about the state of economic security of the enterprise. Thus, we can conclude that the work to ensure the economic security of the enterprise is complex and continuous. We can highlight the main aspects of the company's activity in the field of economic security:

- 1) organizational side - in this case, both the company itself and its organizational integrity, as well as the normal operation of the main units (departments, services, etc.) must be maintained;
- 2) legal side - this means that the company constantly complies with applicable laws, which is expressed in the absence of lawsuits against the company by law enforcement and regulatory authorities;
- 3) information side - security can be evaluated as maintaining a state of protection against leakage or disclosure of internal confidential information in various forms;
- 4) economic side - is manifested in the stable or growth trend of the main financial and economic indicators.

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## МОДЕЛИРОВАНИЕ ТРУБЧАТОГО РЕАКТОРА ПИРОЛИЗНОЙ УСТАНОВКИ С ИСПОЛЬЗОВАНИЕМ ПРОГРАММНОГО ОБЕСПЕЧЕНИЯ COMSOL MULTIPHYSICS

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**Аннотация.** В данной статье представлена наглядная реализация научного исследования процесса разложения биомассы при высоких температурах в отсутствие кислорода в трубчатом реакторе пиролизной установки (ПУ), который моделируется с помощью программного обеспечения Comsol Multiphysics. Разработанная модель трубчатого реактора РР в упрощенной геометрии позволяет значительно сократить объем вычислительной работы, время расчета на 72% и является инструментом для исследования и оптимизации процесса пиролиза.

**Ключевые слова:** трубчатый реактор, Comsol Multiphysics, 3D-моделирование, биомасса, пиролиз.

Особенностью современных научных методов изучения сложных физико-химических процессов и технологических систем является создание моделей описания процессов и прогнозирования изменений в состоянии исследуемых систем. В качестве объекта моделирования рассматривается трубчатый реактор ПУ, который является самой важной составляющей производства биотоплива на основе пиролиза, предназначенной для реализации необходимых теплехимических процессов [1].

Comsol Multiphysics - это мощный инструмент для моделирования, который позволяет формулировать, анализировать и редактировать уравнения химических реакций, а также уравнения, функции и переменные, описывающие кинетику реакций. Он также предлагает пользователям передовые математические и численные методы, адаптированные для расчета химических систем [2].

В трубчатом реакторе пиролизной установки биомассы происходят следующие физические процессы [3,4,5]:

- Термическое разложение: Пиролиз биомассы - это термическое разложение органических соединений. В процессе пиролиза происходят химические реакции, в результате которых углеводороды разлагаются на более легкие молекулы или химические элементы.
- Радиационное нагревание: В радиационной секции находятся трубчатые реакторы пиролиза, обогреваемые теплом сгорания внешне подаваемого горючего газа в горелках этой секции.
- Теплообмен: В трубчатом реакторе также происходит процесс теплообмена, который влияет на температурное поле внутри реактора.