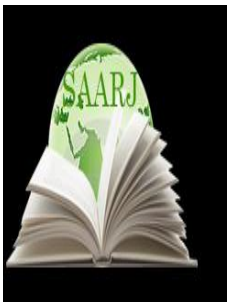
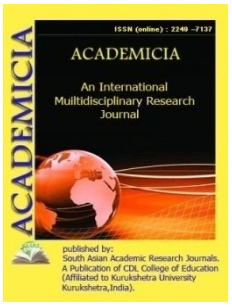


ACADEMICIA
An International Multidisciplinary Research Journal
(Double Blind Refereed & Peer Reviewed Journal)



DOI: 10.5958/2249-7137.2021.01295.7

SCIENTIFIC AND METHODOLOGICAL BASES OF INTEGRATIVE IMPROVEMENT OF THE COURSE "POLYMER CHEMISTRY" UNDERGRADUATE EDUCATION "CHEMISTRY"

Kurbonova Gulchekhra Rayimovna*; Nishonov Mirkozimjon Fozilovich**

*Teacher at Chemistry Department,
Fergana state University,
UZBEKISTAN

**Professor,
Chairman of Chemistry Department,
Fergana state University, UZBEKISTAN
Email id: Nishonov17157@scientifictext.ru

ABSTRACT

In this article, we will show how polymers are taught in the section on this topic. Information on the history of the Department of Polymers at the Faculty of Chemistry is provided at universities. Polymer science courses at the University of Concept are an integral part of the curriculum in seven programs - chemistry, biochemistry, bioengineering, civil engineering in materials, chemical analysis, chemistry and civil engineering in chemistry. A detailed description of the polymer-based courses included in the curriculum, as well as the scientific and methodological basis for the integrative improvement of the course "Polymer Chemistry" in the bachelor's degree program "Chemistry" in universities.

KEYWORDS: *Polymer Chemistry, Methodology, Chemistry, Integrative Improvement, Teaching Methods, University, Curricula.*

INTRODUCTION

Polymers are a part of our lives; scientists dedicated to polymer science are developing new materials, thinking about environmentally friendly methodologies and meeting people's needs. In many universities, polymer science is taught by academics associated with traditional chemistry departments (organic, analytical, physical, and inorganic chemistry). Like various sciences, polymer chemistry has its own language and terminology. Poly- means many, inheritance- means

size. Also, the molecular mass of polymers is very large. Their exact scientific name is called high-molecular compounds. However, you are well aware that the so-called "polymer" is synonymous with science, technology and is widely used in life. The molecule of polymers is also called a macromolecule because they actually have a molecular mass. Polymers are high-molecular compounds whose macromolecules have a chain structure, consisting of groups of atoms (joints) that repeat many times.

Due to the interdisciplinary nature of teaching polymer chemistry to undergraduate students, there are specific difficulties in conveying the topic clearly. It aims to propose a new curriculum for teaching this core course to overcome some major barriers. In particular, new integrative research methods are being added to the professors responsible for teaching first-year polymer chemistry. Starting with the simplest chemical pathway, i.e. live anionic polymerization, we intended to facilitate polymerization. In addition, some pedagogical challenges are highlighted in this article. These new scientific methods of polymer teaching are based on knowledge of organic chemistry.

What is the purpose of the science of "polymer chemistry"? In fact, it is to acquaint undergraduate students in the field of chemistry with the basics of polymer chemistry and its important practical features, which the chemist-bachelor should know, and to help them to test their theoretical knowledge in practice. The general course focuses on explaining the properties of polymers that differ from ordinary submolecular compounds due to the large size and chain structure of macromolecules. The general theoretical course of the subject "Chemistry of Polymers" is carried out by students through laboratory work.

Teaching improvement processes:[1]

- Strategies for providing teaching and workshop opportunities to improve teaching staff;
- Creating opportunities to improve academic courses and research through conferences;
- Update by reading more books and articles related to the course;
- Improving methods in the classroom and allowing students to focus on the learning process through relationships such as improving and enhancing the teacher-student relationship. World experience shows that the relationship between teacher and students certainly affects the quality of education.

Polymer chemistry course materials and learning outcomes should be reviewed periodically and modified. The development of scientific and methodological bases for the integrated improvement of the course of polymer chemistry and the introduction of innovations in this area require the use of modern and interactive teaching methods, mainly through the initiative. Pedagogy is a fundamental and applied science. First fundamental applied research andis characterized by the expression of fundamental priorities. The strategic goal of fundamental research is to identify laws and regularities, to create theories and concepts, to systematize the properties and significance of real objects.

The increasing use of IT or web directories will also make it easier to educate students through changes in content as a result of new research. Polymer Chemistry course materials will be posted on the website, which students can access and can easily use both intensive and integrative coursework. Electronic materials and computer-based software are used to support the course material.

It is necessary to continuously use traditional and interactive methods during the teaching of students, mainly in the course of Polymer Chemistry. It is also important in this area, as it is in every field. The laboratory room is a place where students test their theoretical knowledge in practice. Chemistry is a complex science and we need to be able to explain it to students in a simple and easy way through various interactive and interactive lessons, using modern methods. Fundamental research performs not only prognostic, ontological, but also heuristic and methodological functions to reveal new aspects of the problem in the education system that need to be explored and to develop heuristic technologies and strategies for applied research.

In the context of information globalization, the enrichment of science with different information, a high degree of freedom to analyze and interpret information, like other disciplines, determines the sense of looking at the science of pedagogy from different angles, ie perspectives. An understanding of the course of polymer chemistry that is incompatible with its nature, and attempts to forcibly assimilate approaches, may also be overlooked. The main way to preserve the fundamental nature of this science is to clarify and correctly explain its methodology.

Why is the motivational method necessary for the course of polymer chemistry ?!

Motivation for everyone is a power and a power that inspires a sense of inner confidence that can empower you to take a bold step toward your goal. I believe that the most important result will be a good result if teachers and professors teach students using motivational methods during the course. These methods and integrative scientific methods have been tested in my own teaching activities.

According to the results of the new research, lessons are organized on the basis of interactive methods by introducing the content of the course and giving assignments to improve the overall skills of the student. The main purpose of this course is to acquaint students with current methods of spectroscopic analysis. They are used in a variety of analytical applications by studying and linking their performance, design, problems, and using the following methods with data:

- Instrumental integrative research methods;
- Analytical interactive methods;
- Methodology of analysis and thinking.

The result of science as a system of scientific knowledge and scientific activity is reflected in new scientific knowledge of theoretical and practical type. In general, the existence of truth and novelty is the most fundamental value for scientific knowledge. Science as a component of culture is based on a socio-cultural perspective, a specific historical and cultural context, develops in an axiological context; on the other hand. - serves as a basis for the development of science and culture.

Based on the need for a scientific and methodological basis for the integrated improvement of the course "Chemistry of Polymers" in the bachelor's degree program "Chemistry", which fully reflects the methodology of scientific and pedagogical research, the creative team provided textbooks, methods and manuals. was created. Because this science is complex, understanding a textbook can certainly be a little harder at the beginning. You will have to rely on philosophical and logical thinking in situations like this. According to pedagogical, methodological and

scientific research, using the results of scientific research on the course of polymer chemistry, it is possible not only to understand the essence of the course of polymer chemistry, but also to study the lessons intensively.

In conclusion, I can say that the educational process is always in need of innovation, new teaching and learning methods. A solution to this problem can be found mainly through the scientific research of university students and teachers. In teaching the science of polymer chemistry to young people on the basis of interactive, integrative scientific methods, which have become popular in recent years, it is necessary to conduct lessons with students, both collectively and individually.

By studying the scientific and methodological basis of the integrative improvement of the course "Polymer Chemistry" in the bachelor's degree program "Chemistry" in universities, we see both the quality of education and its level. Basically, it is necessary to conduct research in this area and use the power of modern technology, as well as to guide students in this regard. In the future, we intend to develop new methods in the field of polymer chemistry and to train mature and knowledgeable personnel through lessons based on each of the integrative scientific methods used in the further development of these fields in our country.

REFERENCES:

1. Askarov MA, Ismailov II Chemistry and physics of polymers. Tashkent, Uzbekistan, 2004.
2. Young, RJ (1987) Introduction to Polymers, Chapman & Hall ISBN 0-412-22170-5
3. RashidovaS.Sh., Nadjimutdinov NN, Usmanov TI Introduction to polymer chemistry. Tashkent. 2003.
4. http://goldbook.iupac.org/
5. “Glossary of Basic Terms in Polymer Science,” IUPAC Recommendation http://goldbook.iupac.org/src_PAC1996682287.htm
6. http://www.chemistry.com
7. Нишонов, М. Ф., Юнусов, М. М., &Курбонова, Г. Р. (2020). ПРЕПОДАВАНИЕ ТЕМЫ «АЗОТНАЯ ПРОМЫШЛЕННОСТЬ» НЕТРАДИЦИОННЫМ МЕТОДОМ. Проблемысовременнойнауки и образования, (12-2 (157)).