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CHEMISTRY

KIMYO YO'NALISHI
UCHUN INGLIZ TILI

(Darslik)

O'ZBEKISTON RESPUBLIKASI
OLIY VA O'RTA MAXSUS TA'LIM VAZIRLIGI
TOSHKENT VILOYATI
CHIRCHIQ DAVLAT PEDAGOGIKA INSTITUTI

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ABSTRACT

"English for Chemistry" is a comprehensive textbook designed to help chemistry students, researchers, and professionals improve their English language skills in the context of their chosen field. The textbook is organized into 36 thematic chapters, each focusing on a particular area of chemistry, as well as dedicated sections on grammar, vocabulary, and pronunciation.

The journey begins with an introduction to the basic English language skills and scientific vocabulary necessary for studying chemistry. As students progress through the textbook, they explore a wide range of topics, from the scientific method and laboratory equipment to elements, compounds, and chemical reactions. These foundational chapters are designed to strengthen their understanding of the key concepts and principles in chemistry, while also enabling them to practice and enhance their English language skills in a scientific context.

As students delve deeper into the textbook, they encounter more advanced topics, such as thermochemistry, gases, solutions, acids and bases, and chemical equilibrium. These subjects provide a well-rounded understanding of chemistry and allow them to confidently discuss and explain these concepts in a professional setting.

In addition to these core chemistry topics, the textbook also covers specialized areas of chemistry, including organic chemistry, biochemistry, environmental chemistry, materials science, and analytical chemistry, among others. By examining the diverse applications of chemistry across various industries and fields of research, students gain a deeper appreciation for the importance of effective communication in English for chemistry professionals.

The grammar, vocabulary, and pronunciation sections of the textbook are designed to complement the chemistry content and support the development of students' English language skills. These sections cover essential aspects of English grammar, technical, academic, and general vocabulary. The pronunciation section

provides guidance on the pronunciation of technical terms, intonation patterns in scientific communication, and accent reduction strategies.

"English for Chemistry" aims to provide students with a comprehensive, accessible, and engaging resource to support their journey towards mastery of the English language within the field of chemistry. Whether they are a student embarking on their studies, a researcher seeking to expand their knowledge, or a professional looking to enhance their communication skills, this textbook offers a wealth of information, guidance, and practical tools to help them achieve their goals. By developing their English language skills in conjunction with their understanding of chemistry, they will be better equipped to engage with the global scientific community, share their ideas, and contribute to the ongoing advancement of human knowledge.

ANNOTATSIYA

"Kimyo yo'nalishi uchun ingliz tili" - bu kimyo fakulteti talabarlari, tadqiqotchilar va mutaxassislariga o'zlari tanlagan yo'nalish bo'yicha ingliz tili bo'limlarini oshirishga yordam berish uchun mo'ljallangan keng qamrovli darslikdir. Darslik 36 ta mavzudan iborat bo'lib, ularning har biri kimyoning ma'lum bir sohasiga, shuningdek grammatika, lug'at va talaffuzga bag'ishlangan bo'limlarga qaratilgan.

Darslik asosiy ingliz tili ko'nikmalari va kimyoni o'rganish uchun zarur bo'lgan ilmiy lug'at bilan tanishishdan boshlanadi. O'quvchilar darslik bilan tushunar ekan, ilmiy metod va laboratoriya jihozlaridan tortib elementlar, metallar va kimyoviy reaksiyalargacha bo'lgan turli mavzularni o'rganadilar. Mavzular kimyo fanidagi asosiy tushunchalar va tamoyillar haqidagi tushunchalarini mustahkamlash, shu bilan birga ularga ingliz tilini ilmiy kontekstida amaliyotda qo'llash va faollikni oshirishga imkon berish uchun mo'ljallangan.

Talabalar darslikni chuqurroq o'rganish jarayonida termokimyo, gazlar, erimlar, kislotalar va asoslar, kimyoviy muvozanat kabi ilg'or mavzularga duch keladilar. Ushbu fanlar kimyo haqida har tomonlama tushuncha beradi va ularga ushbu tushunchalarni professional sharoitda ishonchli tarzda muhokama qilish va tushuntirishga imkon beradi.

Ushbu asosiy kimyo mavzularidan tashqari, darslik kimyoning baholashgan sohaslarini, jumladan, organik kimyo, biokimyo, atrof-muhit kimyosi, materialshunoslik va analitik kimyoni va boshqalarni o'z ichiga oladi. Turli sohalar va tadqiqot sohaslarida kimyoning turli xil qo'llanilishini o'rganib

chig'ib, talabalar kimyo bo'yicha mutaxassislar uchun ingliz tilida samarali mulogot qilishning ahamiyatini chuqurroq tushunishadi.

Darslikning grammatika, lug'at va talaffuz bo'limlari kimyo fanining mazmunini to'ldirish hamda talabalarning ingliz tilini o'rganish ko'nikmalarini rivojlantirishga yordam berishga mo'ljallangan. Ushbu bo'limlar ingliz tili grammatikasi, texnik, akademik va umumiy lug'atining muhim jihlatlarini qamrab oladi. Talaffuz bo'limida texnik atamalarning talaffuzi, ilmiy mulogotdagi intonatsiya naqshlari va urg'uni kamaytirish strategiyalari bo'yicha ko'rsatmalar berilgan.

"Kimyo yo'naltirishi uchun ingliz tili" talabalarga kimyo sohasida ingliz tilini o'zlashtirish yo'lidagi harakatlarni qo'llab-quvvatlash uchun keng qamrovli, mavjud va qiziqarli manba bilan ta'minlashga qaratilgan. Ular o'rganishni endi boshlagan talaba bo'ladimi, o'z bilimini kengaytirishga intilayotgan tadqiqotchi yoki mulogot ko'nikmalarini oshirishga intilayotgan mutaxassis bo'ladimi, bu darslik ularga o'z maqsadlariga erishishda yordam beradigan ko'plab ma'lumotlar, yo'l-yo'riqlar va amaliy vositalarni taqdim etadi. Kimyo haqidagi tushunchalari bilan birgalikda ingliz tili ko'nikmalarini rivojlantirish orqali ular jahon ilmiy hamjamiyati bilan aloqa qilish, o'z g'oyalari bilan o'rtoqlashish va insoniyat bilimlarining doimiy rivojlanishiga hissa qo'shish ko'nikmalariga ega bo'ladi.

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PREFACE

Chemistry, often referred to as the "central science," is a subject that bridges multiple scientific disciplines, including physics, biology, and materials science. The study of chemistry allows us to understand the natural world, leading to numerous advances in human knowledge and technology. As a result, chemistry has become an integral part of our everyday lives, shaping the world we live in and the products we consume.

The ability to communicate effectively is paramount for those who study and work in the field of chemistry. With English being the predominant language for scientific communication, it is essential for chemistry students and professionals to develop the necessary language skills to effectively read scientific literature, write reports, and communicate with their peers in the English-speaking world.

This textbook, "English for Chemistry," is designed to provide a comprehensive and accessible guide for chemistry students, researchers, and professionals who seek to improve their English language skills in the context of their chosen field. The content of this book is organized into 36 thematic chapters, each addressing a particular area of chemistry, along with specific sections on grammar, vocabulary, and pronunciation. This structure allows readers to focus on the specific topics that are most relevant to their needs, while also providing a comprehensive overview of the language skills required for success in chemistry.

The first chapter, "Introduction to English for Chemistry," serves as an essential starting point for students who are new to the subject. It introduces the basic English language skills necessary for studying chemistry and familiarizes readers with scientific vocabulary. As the textbook progresses, readers will explore a variety of chemistry topics, such as the scientific method, laboratory equipment and techniques, elements and compounds, and chemical reactions. These chapters provide a solid foundation for understanding key concepts and principles in chemistry, while also enabling readers to practice their English language skills in a scientific context.

Further chapters delve into more advanced topics, including thermochemistry, gases, solutions, acids and bases, and equilibrium. These subjects are essential for a well-rounded understanding of chemistry, and the textbook's focus on English language proficiency ensures that readers can confidently discuss and explain these concepts in a professional setting.

The textbook also covers specialized areas of chemistry, such as organic chemistry, biochemistry, environmental chemistry, materials science, and analytical chemistry, among others. These chapters provide insight into the diverse applications of chemistry in various industries and fields of research, highlighting the importance of effective communication in English for chemistry professionals.

In addition to the core chemistry content, this textbook also emphasizes the development of research and presentation skills, which are crucial for success in academia and industry. The chapters on research skills and presentation skills in chemistry provide practical guidance on conducting research, analyzing data, and presenting findings in a clear and engaging manner.

The grammar, vocabulary, and pronunciation sections of the textbook are designed to support the development of English language skills throughout the course. These sections cover essential aspects of English grammar, such as parts of speech, tenses, articles, passive voice, and conditionals, as well as technical, academic, and general vocabulary. The pronunciation section offers guidance on the pronunciation of technical terms, intonation patterns in scientific communication, and accent reduction strategies.

In conclusion, "English for Chemistry" is a valuable resource for chemistry students and professionals who wish to enhance their English language skills and expand their knowledge of the subject. By providing a comprehensive overview of the key concepts and principles in chemistry, along with targeted guidance on grammar, vocabulary, and pronunciation, this textbook empowers readers to effectively communicate their ideas and findings in the global scientific community.

It is our hope that this textbook will serve as a valuable resource for students, educators, and professionals alike, providing the tools and knowledge necessary for success in the exciting and ever-evolving field of chemistry. As you embark on your journey through the pages of this book, we encourage you to actively engage with the material, ask questions, and strive to apply your newly acquired knowledge and language skills in real-world contexts. This active engagement with the content will not only deepen your understanding of the subject matter but also help you develop essential critical thinking and problem-solving abilities, which are invaluable in both your academic and professional pursuits.

The authors of this textbook have drawn upon their extensive experience in the fields of chemistry and English language education to create a comprehensive and user-friendly guide that is specifically tailored to the needs of chemistry students and professionals. Each chapter has been carefully designed to present complex concepts in a clear and accessible manner, with numerous examples, illustrations, and exercises to reinforce learning and facilitate the application of new knowledge.

Furthermore, this textbook recognizes the importance of collaboration and communication within the scientific community. Throughout the chapters, you will find suggestions for group activities and discussions that encourage you to share your ideas, collaborate with your peers, and develop a deeper understanding of the material through the exchange of diverse perspectives. This collaborative approach not only enhances your learning experience but also fosters the development of essential teamwork and interpersonal skills that will serve you well in your academic and professional endeavors.

As you progress through the chapters, it is important to remember that learning is an ongoing process, and mastery of any subject requires dedication, persistence, and curiosity. It is our hope that this textbook will inspire you to continually challenge yourself, expand your knowledge, and refine your English language skills in the context of chemistry. By doing so, you will be better equipped to engage with the international scientific community, contribute to the advancement of human knowledge, and make a meaningful impact in your chosen field.

In closing, we would like to express our gratitude to the many educators, researchers, and professionals who have contributed their expertise and insights to the development of this textbook. Their dedication to the advancement of chemistry education and the promotion of effective scientific communication has been instrumental in shaping this valuable resource.

As you embark on your journey through "English for Chemistry," we wish you every success in your studies and future endeavors. We hope that this textbook will serve as a trusted companion, providing you with the knowledge, skills, and confidence you need to excel in the dynamic and rewarding field of chemistry. And remember, the pursuit of knowledge and the development of effective communication skills are lifelong endeavors; embrace the journey and continue to grow and evolve as a chemistry student, professional, and global citizen.