Министерство науки и высшего образования Российской Федерации
НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ
ТОМСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ (НИ ТГУ)

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Оценочные материалы по дисциплине

Профессиональная коммуникация на иностранном языке

по направлению подготовки

04.04.01 Химия

Направленность (профиль) подготовки:
Трансляционные химические и биомедицинские технологии

Форма обучения
Очная

Квалификация
Магистр

Год приема
2023

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Томск – 2023

1. Компетенции и индикаторы их достижения, проверяемые данными оценочными материалами

Целью освоения дисциплины является формирование следующих компетенций:

УК-4 Способен применять современные коммуникативные технологии, в том числе на иностранном языке, для академического и профессионального взаимодействия.

Результатами освоения дисциплины являются следующие индикаторы достижения компетенций:

ИУК 4.1 Обосновывает выбор актуальных коммуникативных технологий (информационные технологии, модерирование, медиация и др.) для обеспечения академического и профессионального взаимодействия

ИУК 4.2 Применяет современные средства коммуникации для повышения эффективности академического и профессионального взаимодействия, в том числе на иностранном языке

ИУК 4.3 Оценивает эффективность применения современных коммуникативных технологий в академическом и профессиональном взаимодействиях

2. Оценочные материалы текущего контроля и критерии оценивания

Элементы текущего контроля:

– Элементы текущего контроля:

– проверочные работы, в том числе тесты;

– аннотирование научной статьи;

– редактирование готовой научной статьи, содержащей ошибки.

– написание структурных частей научной статьи (аннотация, методика, выводы);

– составление постера для стендового доклада;

– написание тезисов доклада;

– подготовка визуального сопровождения доклада (презентация).

Проверочная работа (ИУК 4.1, ИУК 4.2**).** Данная форма контроля используется в рамках промежуточной аттестации. Критерий оценивания предопределяется следующей процентной шкалой:

менее 50% успешно выполненной работы – «не зачтено»;

50–70% успешно выполненной работы – «зачтено», «удовлетворительно»;

70–80% успешно выполненной работы – «зачтено», «хорошо»;

более 80% успешно выполненной работы – «зачтено», «отлично».

Пример:

Match the principles of academic writing with their descriptions.

1 Using short words and simple syntax to express your scientific findings refers to...

a. precision and clarity

b. economy of expression

c. use of impersonal tone

d. reduction of bias.

2 Presenting your scientific findings in a way understandable for a potential reader refers to...

a. economy of expression

b. reduction of bias

c. focus on the audience

d. care in the use of others' work.

3 Using headings, bullet points, sections, and other paratext devices refers to...

a. care in the use of others' work

b. reduction of bias

c. use of organization and structure

d. continuity in the presentation of ideas.
4 Being politically correct, objective, and avoiding labelling people by their nationality, gender, or affiliation refers to...
a. reduction of bias
b. smoothness
c. continuity in the presentation of ideas
d. precision and clarity
5 The consistent usage of scientific terms refers to...
a. smoothness
b. continuity in the presentation of ideas
c. economy of expression
d. use of organization and structure
6 Focus on the object of your research rather than on the authors or personalities is about...
a. economy of expression
b. smoothness
c. continuity in the presentation of ideas
d. use of an impersonal tone.
7 Avoiding plagiarism refers to...
a. economy of expression
b. precision and clarity
c. care in the use of others' work
d. smoothness
8 Using pronouns (its, their, etc.), linkers (however, moreover, firstly), and other language devices helping to trace the logic of your research is...
a. continuity in the presentation of ideas
b. use of organization and structure
c. economy of expression
d. reduction of bias
9 Using words with only one meaning refers to...
a. smoothness
b. reduction of bias
c. use of structure
d. precision and clarity

Write short descriptions of the characteristics of academic writing provided below: 1) mention the main idea or the function of the characteristic; 2) provide examples if possible.
10 Avoiding wordiness
11 Avoiding redundancy
12 Avoiding long noun strings
13 Using verbs instead of nouns
14 Using sentence structure
15 Using paragraph structure.

Аннотирование научной статьи (ИУК 4.2, ИУК 4.3**).** Данная форма контроля используется в рамках промежуточной аттестации. Обучающемуся предоставляется готовая научная статья по тематике «Химия», взятая из аутентичных источников.
Критериями успешного аннотирования статьи: а) использование профессиональноая лексики в тексте аннотации, б) грамматическая корректность (в т.ч. синтаксическая), в) использование клише, г) соблюдение структуры.

Пример текста для аннотирование

Phosphorus (be) one of essential nutrients for life on earth, and (occur) in soils, sediments, waters, and organisms. Among various forms of phosphorus, orthophosphate, the most frequently measured form of phosphorus, (be considered) to be the only form directly available and rapidly assimilated by bacteria, algae [1] and plants [2,3]. On the other hand, the role of organic phosphorus in different ecosystems (be) still a subject of intensive study [4–6]. This (be) in part due to the lack of reliable organic phosphorus data in many ecosystems because of complex procedures involved in determination of dissolved organic phosphorus [4,7]. To determine total dissolved organic phosphorus in the samples, breakdown of organic phosphorus, by digestion, to dissolved phosphate (be often required). Several methods, including fusion, dry ashing, and boiling samples in perchloric, sulfuric or nitric acid on a hot plate, (be employed) to digest samples for total dissolved phosphorus determination. More recently, autoclaving, UV photo-oxidation and microwave heating (be widely used) [8]. However, there (be) many uncertainties involved in the total dissolved phosphorus measurements [7–9]. The QUASIMEME laboratory performance studies (nutrient section) (indicate) that more than a half of laboratories participated in the inter-comparison study on total dissolved phosphorus cannot produce consistent results and (conclude) that the total phosphorus (be) the most problematic parameter in routine water quality monitoring program [10]. Among various problems, incomplete recovery of organic phosphate compounds (be considered) to cause the underestimate of the total dissolved phosphorus in the natural waters [4,11–13].

One of the most popular methods of total phosphorus digestion (be based) on the oxidation of organic phosphorus by persulfate in acidic solution. The oxidation processes (be usually accelerated) by autoclaving samples at a pressure of 137 kPa to 120 ◦C for a period of time (ranged from 30 min to 5 h) [12,14–17]. This procedure (be adapted) for total dissolved phosphorus analysis in the standard method for the examination of water and wastewater [18] and USEPA Method 365.1 [19]. Because the digestion product of organic phosphorus (be) orthophosphate, same color reagents and procedures (be widely used) for the determination of phosphate and total dissolved phosphorus in the same samples. Slow formation of the phosphoantimonylmolybdenum blue complex in persulfate might cause an underestimate in determination of total phosphorus, particularly in automated analysis where the colored complex (be usually detected) less than 10 min after mixing the sample with reagents [22].

Previous studies (attribute) the slow formation of the phosphoantimonylmolybdenum blue complex in the acidic persulfate digested samples to the decrease in sample pH resulting from decomposition of persulfate to sulfuric acid [12,20,21]. For the total dissolved phosphorus in the fresh water and wastewater, neutralization of digested solution with sodium hydroxide (be recommended) before the total phosphate determination [18,19,23]. For measuring total dissolved phosphorus in seawater samples, a modified mixed reagent with high molybdate and low acidity ([H+]/Mo = 46.5) (be recommended) [12,15,17] to compensate newly formed sulfuric acid from decomposition of persulfate during the digestion process. The same strategy for sea water (be recently suggested) for determination of total dissolved phosphorus in fresh water and waste water samples [24]. Little attention (be paid) to the difference in sample matrix, particularly the modification of sample matrix after addition of oxidizing reagents and subsequent digestion process. The influence of oxidation products on the subsequent phosphoantimonylmolybdenum blue formation (be largely ignored). So far, there (be) no study on the kinetics of formation of the phosphoantimonylmolybdenum blue complex in the persulfate digested sample matrix. To develop an optimal procedure for total dissolved phosphorus determination, it (be) necessary to understand the factors that (control) the rate of the color formation in these digested sample matrix. In this report, we (explore) the kinetics of formation of the phosphoantimonylmolybdenum blue complex in total dissolved phosphorus samples that (undergo) the acidic persulfate digestion by a modified Murphy and Riley method [25,26]. The influences of persulfate and solution pH on the formation of the phosphoantimonylmolybdenum blue complex (be separately examined) and their combined effect (be evaluated).

Редактирование готовой научной статьи, содержащей ошибки (ИУК 4.2, ИУК 4.3**).** Данный инструмент промежуточного контроля ориентирован призван проанализировать сформированность умения самостоятельно работать с аутентичным речевым материалом и совершенствовать его. Отметка об успешно выполненном задании выставляется, если соблюдены следующие параметры: а) все ошибки выявлены и проанализированы, б) найден способ их устранить.

Пример задания на редактирования

The growing demand for middle distillates and the increasing production of heavy crude oils has place hydrocracking as one of the most important secondary petroleum refinery proceses. Hydrocracking is commonly practised in the petroleum refining industry to treat oil residua. During hydrocracking, large compounds are broken to forming low molecular weight compounds. When the reaction takes place over a catalyst in a hydrogen-rich atmosphere other reactions, such as hydrodesulfurization, hydrodemetallization, etc., occur simultaneous. The different rates and selectivity of each reaction depends on the properties of the catalyst used and on the reaction severity. Most of industrial processes employs catalysts with both hydrogenation and acid functions [1]; isomerization and cracking occur on acid sites via ion carbenium chemestry, whereas hydrogenation and dehydrogenation reactions take place on the metallic sites.

Написание структурных частей научной статьи (аннотация, методика, выводы) (ИУК 4.2, ИУК 4.3**).** Данная форма контроля является одной из ключевых в рамках промежуточного контроля и служит допуском к итоговой зачётной процедуре. Критериями успешного выполнения задания являются: а) использование профессиональноая лексики в тексте аннотации, б) грамматическая корректность (в т.ч. синтаксическая), в) использование клише, г) соблюдение структуры.

Пример задания

Write your Introduction following the tips below.

1. Introduce the Research Area. Begin by rereading the notes that you have taken on the importance of your topic and relevant background information. If you used note cards, sort them by keywords to identify multiple works that can be grouped and cited together in your Introduction. If you did not use note cards, figure out other ways to organize your notes by keywords or key concepts.

1.1 Begin writing your opening paragraph, including the all-important first sentence, making sure the research area is clear.

1.2 Stress the importance of your research area and summarize relevant, precedent works. When describing the importance of your research area, focus on research rather than researchers. When presenting background information, paraphrase the work of others; do not use any direct quotations. Remember that your goal is to (1) alert your readers to works that laid the groundwork for your study, (2) illustrate key findings in the field, and (3) summarize essential knowledge related to the current work.

2. Identify a Gap. Start by making a list of the possible gaps that your work fills. Explain the gap(s) and cite relevant literature that will support your claims.

3. Fill the Gap. Finally you can refer to your own work. (Up to this point in your Introduction, your own work should not have been mentioned.) When transitioning from Move 2 to Move 3, at the beginning of this new paragraph, remember to introduce your work by using one of the useful phrases.

3.1 Then give a short description of your work and highlight how the work fills the identified gap. Your introduction can end here.

3.2 Or you can preview principal findings. You'll need to decide if you want to preview findings at the end of your introduction.

Reread and edit your work focusing on each of the following aspects of your writing.

1. Organization. Check your overall organizational structure. Did you follow the move structure outlined in Task 1?

2. Audience and Conciseness. Will your Introduction draw readers into the paper? Is it written for a broader audience, moving from a general focus to a more specific focus? Have you taken steps to ensure that your writing is concise? If you used the word respectively to achieve conciseness by clustering related ideas when summarizing the literature, have you used it properly? Find at least three sentences that can be written more clearly and concisely.

3. Writing Conventions. Check to be sure that you have (1) not used direct quotes, (2) paraphrased the literature accurately, giving credit (in the form of properly formatted citations) where it is due, (3) focused on the science rather than the scientists, (4) used tense and voice purposefully, and (5) created linkages between sentences to enhance the fluidity of your written work.

4. Grammar and Punctuation. Check for typos and errors in spelling, subject-verb agreement, parallelism, and punctuation, paying special attention to your more complex sentences. Be attentive to easily confused word pairs, such as although/while, because/since, farther/further, and that/which.

5. Science Content. Have you correctly conveyed the science of others, and your own? If asked, could you define all of the words you have used in your Introduction

3. Оценочные материалы итогового контроля (промежуточной аттестации) и критерии оценивания

Зачет в первом семестре выставляется по результатам выполнения текущих проверочных заданий, в том числе заданий по критическому анализу, редактированию и созданию структурных частей научной статьи (аннотации, введения, основной части и выводов), а также по итогам участия в итоговом круглом столе. Для получения зачёта студенту необходимо выполнить все задания на оценку не ниже «удовлетворительно».

Круглый стол (обсуждение оптимальных способов представления научных результатов / обсуждение трендов в современной науке). Критерии успешного выполнения задания: 1) использование профессиональной лексики в речи; 2) наличие иллюстративного материала (данные, схемы, таблицы, примеры); 3) диалогичность, т.е. участие в дискуссии, 4) равное распределение ролей внутри фокус-группы, 5) этичное ведение беседы.

Примеры вопросов (ИУК 4.1, ИУК 4.2, ИУК 4.3)

1. Speak on precision and clarity as one of the main principles of academic writing. Provide examples.
2. Speak on economy of expression as one of the main principles of academic writing. Provide examples.
3. Speak on continuity in the presentation of ideas and smoothness (=consistency) as one of the main principles of academic writing. Provide examples.
4. Speak on use of impersonal tone and reduction of bias as one of the main principles of academic writing. Provide examples.
5. Speak on care in the use of others' work and focus on the audience as one of the main principles of academic writing. Provide examples.
6. Speak on the following characteristics of academic writing: 1) absence of contractions, 2) avoiding wordiness and redundancy. Provide examples.
7. Speak on the following characteristics of academic writing: 1) no long noun strings, 2) parallel constructions. Provide examples.
8. Speak on the following characteristics of academic writing: 1) verbs over nouns, 2) sentence and paragraph structure. Provide examples.

9. Speak briefly on the punctuation rules in the English language (mention comma, dash, colon, and parentheses). Provide examples.
10. Speak on the main features (structure, requirements, and techniques) of the Title. Provide examples.
11. Speak on the main features (structure, requirements, and techniques) of the Abstract. Provide examples.
12. Speak on the main features (structure, requirements, and techniques) of the Introduction. Provide examples.
13. Speak on the main features (structure, requirements, and techniques) of the Conclusions. Provide examples.
14. Present a chart containing the main academic vocabulary that you have grasped during the semester (lab equipment, general verbs, nouns, linkers). Speak on the meanings of words and provide the contexts of their usage.

Формулировка «зачтено» выставляется, если студент успешно выполнил предлагаемый зачетный минимум (тест; написание и анализ заголовков, аннотации, введения и выводов к научной статье; участие в круглом столе); владеет различными средствами устной и письменной иноязычной коммуникации с учетом ситуации общения и профессионального контекста, владеет изученной теорией и включенным в нее лексическим и грамматическим материалом; ошибки в речи не затрудняют коммуникацию или затрудняют ее незначительно, студент способен корректировать свое коммуникативное поведение.

Формулировка «не зачтено» выставляется, если студент не выполнил предлагаемый зачетный минимум; не демонстрирует владение средствами устной и письменной иноязычной (профессиональной) коммуникацией с учетом ситуации общения и профессионального контекста, не владеет изученной теорией и включенным в нее лексическим и грамматическим материалом; допускает многочисленные ошибки в речи, которые затрудняют коммуникацию и искажают смысл сказанного; студент не способен корректировать свое коммуникативное поведение.

Ответ на каждый из вопросов круглого стола должен длиться не менее 3-х минут. Каждый участник круглого стола после своего выступления участвует в дискуссии, отвечая на вопросы аудитории. Активное и эффективное участие в дискуссии является необходимым условием получения отметки «зачтено».

Зачет во втором семестре проводится в форме **защиты докладов** (ИУК 4.1, ИУК 4.2, ИУК 4.3) о ходе и результатах своей научно-исследовательской деятельности на английском языке. Презентация должна охватывать ключевые аспекты научного исследования, включая цели, методы, результаты и выводы. После каждой презентации предусмотрено время для обсуждения, в ходе которого студенты могут задавать вопросы и обмениваться мнениями.

Критерии успешного выполнения задания: 1) структура и содержание презентации; 2) ясное изложение цели исследования, используемых методов и полученных результатов; 3) использование профессиональной лексики; 4) иллюстративный материал: презентация должна содержать визуальные элементы (слайды, графики, таблицы), которые поддерживают и иллюстрируют представленный материал; 5) активное участие в обсуждении после презентации, ответы на вопросы и комментирование мнения других участников; 6) этичное ведение беседы: соблюдение этических норм общения, проявление уважения к мнению других участников дискуссии и конструктивная реакция на критику; 7) время выступления: презентация должна укладываться в отведенное время (7-10 минут), что демонстрирует умение структурировать информацию и эффективно управлять временем.

Требование к презентациям: не менее 4-5 слайдов на иностранном языке. План презентации о результатах научно-исследовательской деятельности:

– название работы, ФИО научного руководителя, структурное подразделение;

− цель, задачи, актуальность, новизна, гипотеза, теоретическая и практическая значимость;
− используемые методы исследования и оборудование;
− достигнутые результаты и выводы;
− используемые источники на иностранном языке с кратким описанием их значимости в работе.

Зачет с оценкой «зачтено» выставляется, если студент владеет различными средствами устной и письменной коммуникации, лексическим и грамматическим материалом, знает и использует стилистические и синтаксические особенности научного дискурса в достаточном объеме; ошибки в речи не затрудняют коммуникацию или затрудняют ее незначительно, студент способен корректировать свое коммуникативное поведение. Оценка «не зачтено» выставляется, если студент не демонстрирует владение средствами устной и письменной коммуникации, лексическим и грамматическим материалом, знание стилистических и синтаксических особенностей научного дискурса; многочисленные ошибки в речи не способствуют успешной коммуникации; студент не способен корректировать свое коммуникативное поведение.

4. Оценочные материалы для проверки остаточных знаний (сформированности компетенций)

Тест (ИУК 4.1, ИУК 4.2, ИУК 4.3)

Task 1: Concise Writing

Rewrite these passages to make them more concise. Delete unnecessary words, edit wordy phrases, and use parentheses when appropriate.

1. In order to determine the rate of the reaction, the temperature was increased.

2. Despite the fact that the temperature was increased, the rate of the reaction remained unchanged.

3. After increasing the solvent to 25 mL, the reaction proceeded quickly at room temperature with a reaction time of 30 min and a percent yield of 77%.

4. The polyphenol fraction, which was the most active of all the cranberry fractions, showed the highest antiproliferative activity against HCT116 of 92.1%, against SW620 of 63%, against HT-29 of 61.1%, and against SW480 of 60.1%. (Adapted from Liberty et al., 2007)

Ключи: (other answers possible)

1. In order to determine the rate of the reaction, the temperature was increased.
2. Despite the fact that [Although] the temperature was increased, the rate of the reaction remained unchanged.
3. After increasing the solvent (25 mL), the reaction proceeded quickly at room temperature (30 min, 77%).
4. The polyphenol fraction, which was the most active of all the cranberry fractions, showed the highest antiproliferative activity against HCT116 of (92.1%), against SW620 of (63%), against HT-29 of (61.1%), and against SW480 of (60.1%).

Task 2: Fluid Writing

Revise the second sentence in the following pairs of sentences to make it more fluid (adapted from Ranatunge et al., 2004).

1. Nonsteroidal anti-inflammatory drugs (NSAIDs) are widely used to treat the signs and symptoms of infl mmation, particularly arthritic pain. It is mainly through the inhibition of cyclooxygenases (COXs), key enzymes in prostaglandin (PG) biosynthesis from arachidonic acid, that NSAIDs exert their anti-inflammatory effect.

2. COX-1 and COX-2 are two of the mammalian COX isoforms. The chronic, low-level production of cytoprotective PGs in the gastrointestinal (GI) tract is caused by constitutive COX-

1, whereas the generation of PGs in inflammatory cells is the main function of inducible, short-lived COX-2.

Ключи:
1. The anti-inflammatory effect of NSAIDs is achieved mainly through the inhibition of cyclooxygenases (COXs), key enzymes in prostaglandin (PG) biosynthesis from arachidonic acid.3–5
2. Constitutive COX-1 causes the chronic, low-level production of cytoprotective PGs in the gastrointestinal (GI) tract, whereas the main function of the inducible, short-lived COX-2 is the generation of PGs in inflammatory cells.

Task 3: Formal Vocabulary

Replace the informal verbs italicized in sentences 1–17 with more formal verbs (from the list below) to increase the formality of each sentence. You may need to change the form of verb so that the sentence remains grammatically correct. There may be more than one possible answer.

accumulate discover extract reduce analyze eliminate imply remove conduct enable include report conserve ensure investigate suggest consider enter limit utilize decrease establish obtain withdraw determine examine originate

1. Because of its anticipated easy removal via catalytic hydrogenolysis, we decided to see the application of (R)-phenylglycine amide as a chiral auxiliary in asymmetric synthesis. (Adapted from Boesten et al., 2001)

2. Cr3+ also increased DNA polymerase processivity and cut down its fidelity during DNA replication in vitro (Adapted from Plaper et al., 2002)

3. Chromate may go into cells through the general anion channel, leading to rapid intracellular accumulation. (Adapted from Plaper et al., 2002)

4. Several countries have set up standards for PCBs in dietary products such as fish, meats, and eggs. (Adapted from Llompart et al., 2001)

5. During the study, it was picked up that Cr3+ influences DNA topology. (Adapted from Plaper et al., 2002)

6. The general analytical procedure for the determination of PCBs in full-fat milk is made up of four main steps: (Adapted from Llompart et al., 2001)

7. SPME makes use of a small segment of fused-silica fiber coated with a polymeric phase to take out the analytes from the sample and to introduce them into a chromatographic system. Initially, SPME was used to look at pollutants in water via direct extraction. (Adapted from Llompart et al., 2001)

8. We found out that the time to reach equilibrium between stationary phase and sample headspace was 90 min (Figure 3). (Adapted from Vesely et al., 2003)

9. Once inhaled deep into the lungs, PM2.5 are difficult to get rid of and may pose significant health risks. (Adapted from Dellinger et al., 2001)

10. The Strecker reaction is historically one of the most versatile methods for getting α-amino acids in a cost-effective manner (Adapted from Boesten et al., 2001)

11. CD was also β said to improve the biodegradation of a single hydrocarbon (dodecane). (Adapted from Jozefaciuk et al., 2003)

12. In this manuscript, we tell the results of studies that indicate that PM does indeed contain semiquinone-type radicals. (Adapted from Dellinger et al., 2001)

13. However, Se intake is not the only factor to look at for the reduction of carcinogenesis. (Adapted from Finley et al., 2001)

14. Our mechanistic studies to date mean that the role of zinc is not simply that of a Lewis acid. (Adapted from Demko and Sharpless, 2001)

15. A substantial fraction of the fine particles in the atmosphere comes from combustion sources. (Adapted from Dellinger et al., 2001)

16. Beer was also analyzed by gas chromatography/mass spectrometry (GC/MS) without being derivatized by PFBOA to make sure that there were no other sources of m/z 181 besides the derivatization agent. (Adapted from Vesely et al., 2003)

17. Hydrogen ions are added to the system or are taken away to hold the pH constant. (Adapted from Alberty, 2005)

Ключи:
(1) investigate/examine/consider; (2) decreased/reduced; (3) enter; (4) established; (5) discovered/determined; (6) includes; (7) utilizes, extract, analyze/examine/ investigate; (8) determined/discovered; (9) remove/eliminate; (10) obtaining; (11) reported; (12) report; (13) consider; (14) imply/suggest; (15) originates; (16) ensure; (17) withdrawn/removed

Task 4: Nominalizations

Rewrite these sentences so that they are more concise and in line with chemistry writing conventions. Use nominalizations whenever possible.

1. When we identify trimethylsiloxy-1,2-dioxetane and assign trimethylsiloxymethyl formate as a reaction product, we demonstrate how feasible the trimethylsilyl group migration is. (Adapted from Fajgar et al., 2001)

2. We describe how we prepared and characterized gold nanoparticles (~3 nm in diameter) capped with thiolated cyclodextrins. The CD-capped nanoparticles are hydrophilic, and they bind compounds derivitized from ferrocene as evidenced by values measured by 1 H NMR spectroscopy. (Adapted from Liu et al., 2001)

Ключи: (other answers possible)
1. The identification of trimethylsiloxy-1,2-dioxetane and the assignment of trimethylsiloxymethyl formate as a reaction product demonstrate the feasibility of a trimethylsilyl group migration.
2. The preparation and characterization of gold nanoparticles (~3 nm in diameter) capped with thiolated cyclodextrins are described. The CD-capped nanoparticles are hydrophilic, and they bind ferrocene derivatives as evidenced by 1 H NMR spectroscopic measurements.

Task 5: Unambiguous Writing

Read the following sentences. All have the potential for ambiguity because of the ways in which *this, that*, or *it* is used. Suggest a way to minimize ambiguity in each sentence.

1. (R)- and (S)-warfarin are in their bound forms. *This* takes place within the protein human serum albumin. (Adapted from Clarke et al., 2001)

2. The iron solution in ethanol develops an intense black color that fades to yellow-brown within minutes. From *this*, the cage complex can be isolated in 80% yield. (Adapted from Venkateswara Rao et al., 2004)
3. The α,β-unsaturated aldehyde moiety in these molecules was responsible for their fungicidal action. *This* was described to result from the structural disruption of the cell membrane. (Adapted from Kubo et al., 2001)
4. One of the characteristics of the LSPR biosensor is its generality. *This* is a powerful attribute for fast, high throughput screening of adsorbates. (Adapted from Haes, 2003)
5. The extraction was performed with a liquid-liquid extractor; 50 mL of dichloromethane (Merck) and 50 mL of sample were used. *It* was maintained for 24 h. (Adapted from Fraile et al., 2000)
6. Once this process is explored with the model system to assess the level of enantioselectivity, we will then prepare alkyl zinc reagent 48 using standard methods and cross couple *it* to aryl bromide 18 using the appropriate chiral catalysts (Scheme 7). (Adapted from Vyvyan, 2001)

Ключи: (1) This binding; (2) This solution; (3) The fungicidal action; (4) This generality OR . . . its generality, which is a powerful . . .; (5) The extraction; (6) 48

Task 6: Active and Passive Voice
Rewrite these sentences so that they correctly use passive voice to describe experimental procedures.
1. We heated the mixture to 65 ºC for 15 min.
2. We added 0.31 mmol of Me_4ZnLi_2 to a solution of 1a (30 mg, 0.21 mmol) in THF (4 mL).
3. We attached the in situ NIR probe to a steel holder on the fermentation tank, and we immersed the probe into milk broth.
4. We added several drops of water to quench the reaction, and we stirred the mixture vigorously for 10 min to allow the precipitation of zinc salts.

The Experimental section below (adapted from Pal et al., 2004) contains several errors in the use of passive voice. Identify and correct the errors.

Experimental Section Materials.
Boron trichloride (Aldrich), sodium tetraphenylborate (Aldrich), and cobaltocene (Strem) used as received. 9-Hydroxy-1-oxophenalene synthesized according to literature procedures. Toluene was distilled from sodium benzophenone ketyl immediately before use. Acetonitrile was distilled from P_2O_5 and redistilled from CaH_2 immediately before use.
9-N-Benzyl-1-oxophenalene.
A mixture of 9-hydroxy-1-oxophenalene (0.98 g, 0.005 mol) and benzylamine (10 mL) was refluxed for 10 h in argon. After cooling, yellow crystals were formed and were separated by filtration. The crude product was purified by column chromatography on Al_2O_3 with $CHCl_3$ to give a yellow solid (1.3 g, 92%) and further purification done by crystallization from hexane.

Ключи:
1. The mixture was heated to 65 ºC for 15 min. 2. To a solution of 1a (30 mg, 0.21 mmol) in THF (4 mL) was added 0.31 mmol of Me_4ZnLi_2. 3. The in situ NIR probe was attached to a steel holder on the fermentation tank and immersed into milk broth. [Note that it is permissible to include "was" with "immersed," but it is less concise that way.] 4. Several drops of water were added to quench the reaction, and the mixture was stirred vigorously for 10 min to allow the precipitation of zinc salts. 6.2
Experimental Section Materials.
Boron trichloride (Aldrich), sodium tetraphenylborate (Aldrich), and cobaltocene (Strem) were used as received. 9-Hydroxy-1-oxophenalene was synthesized according to literature procedures.

Toluene was distilled from sodium benzophenone ketyl immediately before use. Acetonitrile was distilled from P_2O_5 and redistilled from CaH_2 immediately before use.
9-N-Benzyl-1-oxophenalene.
A mixture of 9-hydroxy-1-oxophenalene (0.98 g, 0.005 mol) and benzylamine (10 mL) was refluxed for 10 h in argon. After cooling, yellow crystals were formed and were separated by filtration. The crude product was purified by column chromatography on Al_2O_3 with $CHCl_3$ to give a yellow solid (1.3 g, 92%) and further purification was done by crystallization from hexane.

Task 7: Parallelism
Rewrite these sentences so that they are parallel grammatically (and conceptually). If the sentence does not need to be rewritten, write "correct as is".
1. The low yields in Friedel-Crafts reactions are due to the polyalkylation of aromatic compounds, the production of racemic mixtures, and forming other undesirable products.
2. Stable free radicals such as nitroxides have been used in correlation with EPR to study the effects of changes in pH and the determination of rate constants for spin exchange.
3. Pedal motion, a key process of photoreaction in crystals, is considered to occur only in crystals that have an orientational disorder or a large void around the molecules.
4. The present reaction allows various types of silylated carbocycles to be prepared safely, inexpensively, and in an efficient manner

Ключи:
(1) the formation of [instead of forming]; (2) to determine [instead of the determination of]; (3) correct as is; (4) efficiently [instead of in an efficient manner]

Task 8: Subject–Verb Agreement
Check these sentences for subject–verb agreement. Identify the subject and main verb. If agreement is faulty, correct it. Otherwise, indicate "correct as is".
1. American lager beer samples used for the aldehyde analysis was stored at 30 ºC for 4, 8, or 12 weeks. (Adapted from Vesely et al., 2003)
2. A stock solution containing a mixture of the standard compounds in ethanol was prepared in the concentration 100 ppb each. (Adapted from Vesely et al., 2003)
3. H NMR and 13C NMR spectra was recorded in ppm on a 300 MHz instrument using TMS as internal standard. (Adapted from Swenson et al., 2002)
4. Isooctane, acetone, and sodium hydroxide were obtained from Merck.
5. Blends of olive oil and hazelnut oil was prepared by mixing these oils. (Adapted from Ozen and Mauer, 2002)
6. In the new series, each diagram contains points, and each point has associated with it a phase-point variable and a time. (Adapted from Andersen, 2003)
7. Every rate coefficient for the forward reaction is expressed by a complex rate coefficient. (Adapted from Yasuda et al., 2002)
8. Some electron-rich aromatic nitriles requires higher temperatures. (Adapted from Demko and Sharpless, 2001)
9. All specimens were exposed to rainfall for an additional 5 days. (Adapted from Lebow et al., 2003)
10. All of the mass were collected on one filter.
11. Unpaved road dust or aerosols contributes to haze in class I airsheds.
12. Each particle, from dust, soot, or soil, react with light in a unique way.
13. Minutes or even hours are required to complete the separation process.
14. $PM_{2.5}$ or PM_{10} were monitored at each site.
15. A single core sample or multiple surface samples were collected at each site.

Ключи: (1) samples . . . ~~was~~ were; (2) solution . . . was; correct as is; (3) spectra ~~was~~ were; (4) Isooctane, acetone, and sodium hydroxide were; correct as is; (5) Blends . . . ~~was~~ were; (6) each . . . contains . . . each . . . has; correct as is; (7) Every rate coeffi cient . . . is; correct as is; (8) Some electron-rich aromatic nitriles ~~requires~~ require; (9) specimens were; correct as is; (10) mass ~~were~~ was; (11) dust or aerosols ~~contributes~~ contribute; (12) Each particle . . . ~~react~~ reacts; (13) Minutes or even hours are; correct as is; (14) PM2.5 or PM_{10} ~~were~~ was; (15) A single core sample or multiple surface samples were; correct as is.

Информация о разработчиках

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