

Academic English: Writing a Research Article
(Bioscience) Engineering

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(Bioscience) Engineering

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TABLE OF CONTENTS

EXERCISES	IX
INTRODUCTION: YOU AS A WRITER	XI
Unit 1: ACADEMIC STYLE	1
1.1. Managing Tone	2
1.2. Improving conciseness	8
1.3. Enhancing flow	12
Unit 2: ACADEMIC VOCABULARY	25
2.1. Lexical accuracy	26
2.2. Spelling	29
2.3. Consulting the Internet during the writing process	33
Unit 3: LITERATURE REVIEWS	35
3.1. Referencing	36
3.2. Reporting verbs	40
3.3. Evaluative language	45
Unit 4: INTRODUCTIONS	49
4.1. Framing the research question	53
4.2. Highlighting a need	57
4.3. Presenting your research	62
Unit 5: METHODS	69
5.1. Structure	70
5.2. Flow and conciseness	73

Unit 6: RESULTS	87
6.1. Describing and justifying the procedure and/or results	90
6.2. Adequately referring to visuals	91
6.3. Describing general findings	94
6.4. Including more detailed findings	98
6.5. Commenting on the findings	100
Unit 7: DISCUSSIONS	107
7.1. Consolidating your research space	112
7.2. Indicating the limitations of your study	119
7.3. Recommending action or further research	125
Unit 8: ABSTRACTS, TITLES AND ACKNOWLEDGEMENTS	131
8.1. Abstracts	132
8.2. Titles	136
8.3. Acknowledgements	137
REFERENCE SECTION	139
Unit 1: ACADEMIC STYLE	141
1.1. Managing tone	142
1.2. Improving conciseness	151
1.3. Enhancing flow	155
Unit 2: ACADEMIC VOCABULARY	167
2.1. Lexical accuracy	168
2.2. Consulting the Internet during the writing process	171
Unit 3: ACADEMIC GENRES	173
3.1. Literature reviews	174
3.2. Introductions	183
3.3. Methods	188
3.4. Results	194
3.5. Discussions and conclusions	203
3.6. Abstracts	209

3.7. Titles	212
3.8. Acknowledgements	213
Unit 4: GRAMMAR REFERENCE SECTION	215
4.1. Adjectives and adverbs	216
4.2. Adverbial position	217
4.3. Conditionals	219
4.4. Linking expressions	221
4.5. Parallel Constructions	223
4.6. Participle clauses	225
4.7. Passive Voice	227
4.8. Punctuation	229
4.9. Quantifiers	240
4.10. Relative clauses	242
4.11. Spelling	246
4.12. Tenses	249
4.13. Verb agreement	250
Unit 5: WRITING AIDS	253
5.1. Books on academic writing	254
5.2. General websites on academic writing	256
5.3. Search engines and dictionaries	256
5.4. Journal style guides	257
5.5. Grammar books	258
5.6. Editing / revising / proofreading	258
KEY	263
INDEX	319
SOURCES	323

EXERCISES

INTRODUCTION: YOU AS A WRITER

First, answer these questions individually. Then discuss in groups.

1. What type of texts have you written so far (e.g. research articles, letters and emails, scholarly assignments and progress reports)? What type of text will you be writing in the near future?
2. What is your attitude towards writing (negative – neutral – positive)? Do you know why? What exactly do you (dis)like about writing?
3. What have you been praised for or criticized for in the past as a writer?
4. What do you think are the main differences between writing in your mother tongue and in English?
5. What would you like to learn about writing research articles? In other words, what do you expect from this course?

Unit 1:
ACADEMIC STYLE

1

Session aims

- Writing in a sufficiently formal register
 - Adopting an impersonal style
 - Writing clearly and concisely
 - Structuring paragraphs and sentences
 - Clarifying the relationship between points

 - Language focus: Relative clauses
-



To achieve fluent academic discourse, your text needs the correct tone, conciseness and a good flow. These three criteria will be discussed in more detail in this unit.

1.1. Managing Tone

A. Formality

Exercise 1

Read the following passage which is taken from an Introduction. Underline the formal elements and complete the scheme below the text.

(1) Photostability testing of drug substances and products is conducted in order to determine if and to what degree they are likely to undergo photodegradation under the illumination conditions encountered during their manufacture, storage, and handling. **(2)** A number of important issues such as loss of efficacy and formation of toxic photoproducts are associated with drug photodegradation. **(3)** The results obtained from photostability testing are highly dependent upon such variables as choice of illumination source, sample placement, temperature, and humidity. **(4)** In order to standardize such testing, a monograph describing the guidelines for photostability testing of drug substances and products has been published by the International Committee on Harmonization (ICH).

formal elements	examples

Formality is achieved by:

→ Formal vocabulary

- Avoid colloquial vocabulary (words and expressions used in everyday spoken language) (exercise 2);
- Limit the use of run-on expressions such as ‘and so forth’ and ‘etc.’.

→ Formal grammatical constructions

- Do not contract words;
- Be careful about using imperatives and direct questions;
- Replace phrasal verbs by single-word verbs (exercise 3);
- Place adverbs with the verb (exercise 4);
- Write in a more impersonal style (exercise 5).



Reference section: Formality

Exercise 2

Replace the colloquial phrases in bold by more formal language.

1. Improved analytical approaches are necessary to meet **more and more** stringent regulatory requirements for the determination of impurities.
2. **As far as we know**, no data are available to confirm these findings.
3. The toxic responses differ **a lot**.
4. There is **not very much** research on the use of palm oil as coarse aggregate in the production of concrete.
5. **We can see that** no significant changes in the shape or the arrival time of the pulse are introduced by the presence of the foam.
6. The system provides a highly automated, turnkey, multi-dimensional approach **that we can apply** to a variety of complex mixtures with little user intervention.

7. This paper **is about** conditions for the approximation of functions in certain general spaces using radial-basis-function networks.
8. The system **is put into practice** in C using a relational database system.

Exercise 3

Choose a verb from the list to replace the less formal words in bold. You may need to make other changes so that the sentences are still grammatical.

enhance	investigate	enable	constitute
facilitate	attribute	arise	elucidate
reduce	expedite	provide	describe

1. Molecular beacon probes combined with amplification by NASBA **make** homogeneous, real-time detection of RNA **possible**.
2. This interaction is **made better** by other sequence motifs.
3. Additionally, greater knowledge of acquired thermotolerance regulation should **make** the manipulation of crops **easier**.
4. We **looked into** the feasibility of applying this approach in our research.
5. The poor response of vegetation growth **was put down** to the high pH of the interstitial waters of this substrate.
6. The visual range **becomes smaller** in the presence of substantial aerosol particles.
7. However, they have failed to **come up with** a satisfactory explanation for this phenomenon.
8. Phase differences in pressure measurements which **come** from time delays between the structure and the sensor must be taken into account.
9. These elements **make up** the so-called Platinum Group Elements.
10. The new high efficiency Chromolith C18 column was found to have the excellent performance characteristics necessary to **speed up** the approach.
11. To **make** the ground state properties of Ni-Fe-Al **clear**, DFT calculations with our ab initio mixed-basis pseudopotential (MBPP) code were performed.
12. The first part of this article **gives** the present situation.



Language focus: Adverbial position

In academic writing, single adverbs tend to be placed with the verb (midposition). If there is no auxiliary, the adverb in midposition is placed before the main verb.

Wheelchair tie-down systems typically **use** four adjustable-length straps to secure the front and rear of the wheelchair to anchorages in the floor of the vehicle.

When the verb 'be' is on its own, the adverb comes after it.

These data **are** generally consistent with those of Moore et al. (21) and Parravicini et al. (25), who used a specific antibody to detect relatively high levels of HHV-8 vIL-6 in PEL and MCD, respectively.

The adverb is usually placed after the first auxiliary verb, except for the adverb of manner. Compare:

This model **was** originally developed by Ponten (1977). (*after the first auxiliary*)

The evaluation of structural integrity using Lamb waves **has** long been acknowledged as a very promising technique [2] and [3]. (*after the first auxiliary*)

It is shown that the low-frequency Lamb waves **could be** successfully used to interrogate composite structures after a repair has been undertaken. (*after ALL auxiliaries*)



Reference section: Adverbial position

Exercise 4

Find a single adverb to replace the words in bold and place it with the verb.

1. Measurements of Re and PGE abundances suggest that, **as a rule**, clinopyroxene has low Re and PGE concentrations.

2. **After this**, early fractions containing more polar compounds were analysed using a weaker isocratic eluent.
3. **In essence**, in the case of HPLC, separations are carried out in one dimension.
4. Environmental managers are faced with having to determine the extent of environmental contamination and identifying habitats at risk **all the time**.
5. **Now and then**, the water supply must be inspected to prevent blockages.
6. The different BSE parameters that are being used **at the present time** can lead to significant differences in calculated model ages.
7. **In our previous study**, we have shown that the coordinatively unsaturated silyl, aryl osmium(II) complexes, $\text{Os}[\text{Si}(\text{Oet})_3](\text{Aryl})(\text{CO})(\text{PPh}_3)_2$ (Aryl = Ph, *o*-tolyl) are resistant to C-Si reductive elimination even at elevated temperatures.
8. These transducers have been used **with success** to excite and capture the A_0 and S_0 modes at low frequencies in other studies.
9. **Bit by bit**, minute cracks develop in the matrix.
10. By using an unequal error protection scheme, the slice group containing the most important macroblocks can be protected **in a better way** than the other slice group.

B. Impersonal style



Academic style is typically depersonalised: most fields favour a style in which the personal author disappears behind arguments and analysis.



Reference section: Impersonal style

Exercise 5

Answer the following questions about using personal pronouns in research articles. The following examples can help you in your discussion.

1. Are first person pronouns 'I' and 'we' used in research articles in your field?
2. If they are, in which context and for what purpose are they used?
3. If they are not, how is their use avoided?
 - Since most readers of this review can be expected to be familiar with earlier editions of the text, **I will summarize** the differences between the new edition and the second.
 - **As we will see in Chapters 5** through 8, nonionic contaminants are sorbed to natural substances usually either by a partition process (a solution phenomenon) or by an adsorption process (a surface phenomenon).
 - **We defined context as** information used to characterise the situation of an entity.
 - In summary, **we have discovered that** nucleic acid polymers form a hybrid material with carbon nanotubes.
 - **We** especially **acknowledge** our editor, Harry Briggs, for his enthusiastic advocacy and stoic patience.



Reference section: Personal pronouns

1.2. Improving conciseness



The goal of concise writing is to use the most effective words. Concise writing does not always have the fewest words, but it always uses the strongest ones. Writers often fill sentences with weak or unnecessary words that can be deleted or replaced.

Compare the following examples:

- X **The test** was displacement-controlled with a speed of 2 mm/min and **the test was stopped** at a maximum midspan deflection of 34.54 mm for a total span of 170 mm.
- ✓ **The test** was displacement-controlled with a speed of 2 mm/min and **was stopped** at a maximum midspan deflection of 34.54 mm for a total span of 170 mm.

- X There are **not any** data **available** on the response of these drill cuttings to saline water.
- ✓ There are **no data** on the response of these drill cuttings to saline water.

- X **This will allow an assessment of** fluctuations in lamp output during **the course of** the experiments.
- ✓ Fluctuations in lamp output **can thus be assessed during** the experiments.



Reference section: Improving conciseness

Exercise 6

A. Improve conciseness by replacing the words in bold.

1. This will **bring more clarity in** the relationships between the different elements.
2. Both thermoplastics **have the ability to** resist high temperatures.