

Useful phrases

The lists below offer general phrases that can be used in many kinds of research papers. For mastering the terminology and phraseology specific to a field, regular reading of the relevant literature is necessary.

Note: The numbering below follows the numbering of the parts in the **Guidelines for writing a paper**.

3. Abstract

As **the Abstract** is a short version of the paper, some of the phrases used in the other parts of the paper are also used in the abstract and are not mentioned here. You can find them below under each section of the paper. Some hints on how to start the Abstract follow:

Introductory sentences

The paper/article

discusses/deals with/analyses/considers/explains/describes/establishes/introduces

develops/presents/provides/studies/represents/features/contains/concentrates on

covers/suggests/proposes/shows

demonstrates the feasibility of

opens up a new field/issue

gives/aims to give a comprehensive account of

offers a solution to

serves as an introduction to

The main objective/goal/purpose of the paper/article is

Common mistakes:

Wrong:

In this paper there/it is presented a novel method of

Right:

This paper presents a novel method of
In this paper, a novel method of is presented

4. Sections of the paper

4.1. Introduction

In most cases, **the Introduction** section is treated as a whole and is not divided into subsections. The subheadings below should only help you organize the information.

4.1.1. Problem background, state of the art

..... plays an important/vital role in

..... is an important issue for

..... is extensively/widely used in

..... is a very effective method for

In the last few years there has been a growing interest in

Quite recently, considerable attention has been paid to

..... have/has been gaining importance in recent years

..... have/has been utilized in many applications such as

4.1.2. Literature review/Summary of previous research

- Referring to the sources in general

Current research on is focused on

Previous studies indicate that

The literature on shows a variety of approaches

Much research on has been done.

The focus of recent research has been on

..... has/have been widely researched/investigated.

In recent years, research on/into has become very popular.

In the last decade has attracted much attention from research teams

For several years great effort has been devoted to the study of

Several publications have appeared in recent years documenting

Previous research has documented/shown/demonstrated that

To solve this problem/issue, many researchers have proposed various methods of (+-ing)

In the literature, several theories have been proposed to explain

- Referring to individual authors

..... and are discussed in [3] and [6].

X [4] and Y [3] indicate that

X et al. [1] argue that

One of the first examples of is presented in [2].

Another/The latest solution is described in [3].

The results obtained/offered by X in [5] suggest that

Recently, several authors [4], [5], [7] have proposed (a new theory)

X [2] and X [5] have demonstrated that

A/The most interesting approach to this issue has been proposed by [2].

X [6] has also found that However, our researchers have arrived at the conclusion/have concluded that

..... was experimentally measured by [7].

X et al. [7] studied and showed that

X [11] developed a novel sensor using

In this work and in related references it was observed that

In [8] it was shown that

As reported by X [2],

In a recent paper by X [9],

- Saying that little research has been done in a particular field

However, to the author's/authors' best knowledge, very few publications can be found/are available in the literature that discuss/address the issue of

To the author's/authors' knowledge, has/have been scarcely investigated from the point of view of/from the theoretical point of view.

- Pointing out limitations of previous research

A key limitation of this research is that (it does not address the problem of))

The major drawback of this approach is

However, most of the previous studies do not take into account

This approach may not be practical/orthodox/conventional in all situations.

Reference [3] analyses and compares various aspects of Nevertheless, there are still some interesting and relevant problems to be addressed.

However, studies on are still lacking.

The problem with this approach is in that it

Although several studies have indicated that, little attention has been paid/given to

4.1.3. Problem statement, purpose/main objective of the paper

- **Problem statement and description of the objective of the paper** are very specific parts of the paper and the phrases used depend on the nature of the problem. Examples showing how closely this part is related to the literature review and previous research are given below.

(A theory of) has recently been presented in [.....]. However, several practical questions arise when dealing with: 1) It is important to (identify). 2) It is key to (predict). 3. It is crucial to (establish when). To answer all these questions, we present an original approach which

Even though (the efficiency of) has been improved in recent years, most improvements have been achieved by (minimizing the amount of energy lost in). Nonetheless, it is possible to further improve (the efficiency by). With this goal, this work (explores, seeks to).

Based on the approach presented in [3], the purpose of this paper is to

In this paper, while we refer to our earlier work [2], [3], and [4], the focus is different.

Like most authors, we

The objective/aim of this paper/study is to propose

The paper presents/proposes a new approach to

This article introduces a new type of

In this paper, we/the authors offer

In this paper, we explore the possibility of

In this study, a new technique that improves is suggested.

See also **Abstract, Introductory sentences.**

4.1.4. Framework of the paper (usually the last part of the Introduction)

The remainder of the paper is organized as follows/into sections:

Section II describes/outlines, Section III discusses/analyses (Experimental results) are presented in Section IV; Section V concludes the paper.

In Section II, will be discussed. Section III is devoted to Section IV presents (the experimental results). The conclusion is reported in Section V.

The proposed (design) is discussed in Section II (The implementation of the proposed design) is presented in Section III. Section IV shows (the experimental results of). Finally, Section V concludes with a summary.

In Section II we explain In Section III we introduce our The measurements are presented in Section IV. Section V summarizes the results of this work and draws conclusions.

4.2. Body/Core of the paper

General information

The Body of the paper is very specific in its content. For this reason, the number of generally applicable phrases is smaller than in the other parts. Examples of some of these phrases are given below.

There are, however, linguistic means common to all kinds of research papers, i.e. words and phrases expressing *cause, results, addition, similarity, etc.* For lists and usage of these words

and phrases see A Remedial Course in English Grammar: Clauses and Guidelines for Academic Writing: Text structure.

4.2.1. Materials and Methods/Methods of Approach

- Describing what was done and how it was done

We started by investigating

We designed a new technique for

We used a new approach.

These experiments were carried out to find out

In order to verify the validity of the method, we carried out several experiments.

All the tests/measurements were carried out at room temperature.

The (signals) were measured before and after

To illustrate, a simulation was performed.

The analysis was performed in order to

We checked for the presence of

(The chemical structure of) was examined by (the technique).

A gradual change (in temperature) was observed.

The increase in was not caused by/was not due to a decrease in

The (optimized condition) was obtained from

- Describing numerical methods

The equation that describes is as follows:

Equation (2) represents/defines/expresses

The equation can be written as, where

Thus, the following equation is obtained:

..... can be computed by the following equation:

Equations (5) and (6) approximate (the original formulas).

..... satisfies equation (3).

Equations (2) and (3) demonstrate that

(3) implies that

..... is described by (5).

The function f is given/defined by.....

Let f be given/defined by

To simplify (3) we can

For simplicity we ignore the dependence of on

It follows from (3) that

Substituting/inserting (4) and (6a) in(to) (6b), we obtain

Substitution/Insertion of (4) in(to) (5) yields

Now we can derive according to (2)

We can now proceed analogously to

This is true for/This holds for

Similarly, (5) is also valid/true for the following relation.

Assume/Let us assume that (3) holds for

(6) holds under the condition that

We will make the following assumptions:

From now on we assume that

Let us define the following dependence/relation by/as

Let (3) satisfy the following relation

Equality holds in (10) if and only if
The inequality is satisfied if and only if
We shall write the above expression as
In this way we obtain
According to (5) we have/obtain
.... is obtained as/can be obtained as
..... is denoted (M) and defined as
..... takes the form /..... can be written in the form
As is clear from (5,)
We first prove that/Let us first prove that
It remains to prove that
It is clear/evident/obvious that

- Referring to/Describing figures, graphs, tables, diagrams

Fig. 2 shows/presents/depicts/outlines/illustrates/represents
Fig. 3 gives an example of
Such cases are depicted in the following figures.
This is illustrated in Fig. 5.
..... is/are shown/given in Figs. 3 and 4.
..... can be found in Fig. 8.
Consider Fig. 2, which plots versus/against
As can be seen from Figs. 5 and 3,
As shown in Fig. 1,
As follows from the figures shown above,
From this figure it can be seen that
For the resulting plot, see Fig. 2.
For visual representation of the dependence the reader is referred to Tables V and VI.
Table II summarizes

Common mistake

Wrong	Right
As shown in the Fig. 1	As shown in Fig. 1
The Fig. 2 presents	Fig. 2 presents

See also Guidelines for Presentations, Discussions and Chairing: **Slides, graphs, tables, diagrams.**

4.2.2. Results

Some of the phrases listed under **Materials and Methods** may also be suitable for the **Results** section, e.g. summarizing what was done, referring to diagrams, graphs, etc.

It has been found that
The results show that
The results thus obtained are compatible with
The overall measurement results are summarized in Table II.
As mentioned earlier/above,
The previous sections have shown that
This method is based on
The method was tested on

The method is an effective way to improve
The analysis and simulation indicate that
The analysis plays a crucial role in
As may be seen below,
We have introduced a new approach to
A similar approach is used for
This approach may fail if/due to
One of the big advantages of (this approach/method) is that
To verify this method, is compared with
The only disadvantage/drawback of such is
There is no evident relationship between and
..... are in good agreement/correspond with
There is a good match between and
To illustrate the result, a simulation of was performed.
The simulation results match the calculations.
The differences in (temperature) result in significant differences in
The decrease/increase in can be contributed to
To overcome/avoid this problem/difficulty, it is necessary to adopt a
One possible solution to this problem is to (use)
This solution requires

4.2.3. Discussion

For more phrases see also **Introduction and Conclusion(s)**.

- Stating the main objective

In this paper we propose/examine/study
This paper proposes/has proposed
The purpose of the paper/study is to
The paper presents/has presented several solutions to
This paper is a modest contribution to the ongoing discussions about/on
It was the main purpose of the paper to draw attention to
The main concern of the paper was to
In our paper, the focus of attention was/is on
This study shows/has shown that
This experiment/technique/demonstrates that

- Specifying the objective

Particular attention is paid to
The author's attention was focused/concentrated not only on but also on
We have addressed not only but also
We have also considered the consequences of

- Pointing out the originality of the solution

Our paper presents an innovative/a novel view of
The originality of our solution lies in the fact that
This is a novel solution to
Our results describe for the first time the
To our knowledge, this is the first study to deal with/examine/investigate
Only one other study, to our knowledge, has come up with
This paper presents a pilot study to find the answer to

Our observations that are not new, but

- Interpreting the facts

The data obtained is/are broadly consistent with the major trends

These results agree/concur/are consistent/are in good agreement with other studies which have shown that

In contrast to some reports in the literature, there were

An important implication of these findings is that

The finding was quite unexpected/surprising and suggests that

The most likely explanation of the negative result is

The findings have a number of possible limitations, namely

So far, the significance of this finding is not clear.

- Stating the limitations of the research

The main limitation of the experimental result is

One question still unanswered is whether

The analysis does not enable us to determine

These results are not conclusive.

- Suggesting possible applications (possible applications are commonly found in the Conclusion(s) section; they may, however, be mentioned in this section, too. For useful phrases see **Conclusion(s)**).

4.2.4. Conclusion(s)

The Conclusion(s) section usually starts with

- Stating the objective

The objective presented in the Conclusion(s) section should agree with the objective stated in the **Introduction**. For suitable phrases see **Introduction** and **Discussion**.

- Drawing conclusions

From the research that has been carried out/done/conducted/performed/undertaken, it is possible to conclude that

Based on the results, it can be concluded that the research into has been very successful.

From the outcome of our investigation it is possible to conclude that

The findings of our research are quite convincing, and thus the following conclusions can be drawn:

Summing up the results, it can be concluded that

In conclusion, it is evident that this study has shown

This paper has clearly shown that

It has been demonstrated/shown/found that

The results/data obtained indicate/have indicated/suggest/show that

The existence of (these effects) implies that

- Suggesting possible application(s)

The proposed method can be readily used in practice.

The technique/approach/result is applicable to

..... can be successfully used for a number of applications.

The/our has great potential for other applications such as

This research was concerned with; however, the results should be applicable also to

The findings suggest that this approach could also be useful for

The findings are of direct practical relevance.

- Suggesting further research

In our future research we intend to concentrate on

Future work will involve

On the basis of the promising findings presented in this paper, work on the remaining issues is continuing and will be presented in future papers.

The next stage of our research will be (experimental confirmation of our theory).

Further study of the issue would be of interest.

Clearly, further research will be needed/required to prove/validate

Several other questions remain to be addressed/resolved.

More research into is still necessary before obtaining a definitive answer to

Further study of the issue is still required.

Further research on/into is desirable/necessary (to extend our knowledge of)

Continuing/continued research on/into appears fully justified because

More tests/experiments/calculations will be needed to verify whether

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