The Title of the Manuscript

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Abstract

The first important part of your paper is its title. The title can be either descriptive or, more attractively, declarative. It should be interesting, and intelligible that conveys the importance of your work. To be effective, a title should be about six words or less. An equally important part of the paper is the Abstract section. Write an informative Abstract that makes the readers want to find your paper and start reading it, as usually known, the abstract sells the papers. Abstracts between 100 to 175 words are generally well received.

Keywords: Carefully select an appropriate list of five keywords that represents the real content of your paper. This will help the readers find your paper more easily as they search through the database search engine.

عنوان البحث باللغة العربية

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الخلاصة

الجزء الأول والمهم في الورقة العلمية هو عنوانها. ممكن أن يكون العنوان وصفيا أو أكثر جاذبية تصريحيا. يجب أن يكون العنوان شيقًا ومفهومًا ينقل أهمية عملك. ولكي يكون فعالا، يجب أن يتكون العنوان من حوالي ست كلمات أو أقل. أما الجزء الثاني والذي لا يقل أهمية عن عنوان البحث هو جزء الخلاصة. اكتب ملخصًا لعملك يجعل القراء يرغبون في العثور على بحثك والبدء في قراءته. وكما هو معروف عادة، المستخلص هو الجزء الذي يقوم بتسويق البحث. يفضل ان يتراوح عدد الكلمات في الملخصات من 100 إلى 175 كلمة.

1. Introduction

When you sit down and start writing your paper try to address as wide a reader as possible by using simple words, explain clearly as possible and provide sufficient explanatory material related to your research but do not exceed our laid down constraint of number of pages which is at most **12 pages** including references for **full-length article** and **20 pages** for **review article**. Overlength fees will be applied after these certain number of pages are exceeded.

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Every technical paper must be organized according to a format. There are many different formats that the researchers may follow. For instance, most papers must have an Abstract and References, and some may have one or more Appendixes. But, essentially, between these two parts the format can differ from one author to another depending on the topic or the purpose of the paper (i.e. a research article or a review), for example, a rough format can be: Introduction, Background (presented in the form of Literature Review or Related Work), Theories, Experiment, Results and Discussion, and finally Conclusions and Recommendations.)

Introduction section is the most important part of the format and must be included in any type of papers. It is the part where you introduce your line of research and to give the reason why you perused it (your research motivation), or you may also describe the work that was prior to your own (background of your work) but try not to make your description just as a list of references that tells nothing regarding the earlier work. Make your Introduction an informative summary of your paper that the reader can have an idea what he is going to find in the body of the paper.

The template is structured as follows. Page setup and the different font sizes and styles are presented in Section 2. Section 3 explains how to correctly use abbreviations and acronyms.

1.1 Page Setup and Fonts

Your paper must use a page size corresponding to A4 which is 210 mm (8.27") wide and 297 mm (11.69") long. Top, bottom, left, and right margins should be 2.5 cm. Use Times New Roman font throughout the manuscript, in the sizes and styles shown in Table 1.

Table 1 Recommended fonts and sizes.

Style name	Brief description
Article Title	14 pt, bold
Author Name	**12 pt, bold**
Author Affiliation	10 pt, *italic*
Abstract	10 pt
Keywords	10 pt
Heading 1	**12 Pt, bold**
Heading 2	*12 pt, italic*
Heading 3	*11 pt, italic*
Body Text	12 pt
Figure caption	10 pt
Table caption and body text	10 pt
References Text	11 pt

1.2 Abbreviations and Acronyms

In technical writing there are generally three types of abbreviations:

1- An abbreviation that is first introduced in the text. This abbreviation is placed within parentheses directly following its first occurrence of the spelled-out words in the text. Mostly, they are the initials of the words written in capital letters (e.g. University of Baghdad (UoB)). Thereafter, this abbreviation can be used instead of the words throughout the rest of the paper. However, try not to invent abbreviations just to save space, use words instead and make your paper more readable.

2- An abbreviation that is commonly known in the field of research (e.g. SNR for signal-to-noise-ratio). However, some of these abbreviations are slangs and should be avoided in writing, like *lab* for *laboratory*.

3- Acronyms are special case of abbreviations when these abbreviations are pronounced as words such as NATO.

Abbreviations and acronyms are written either in capital letters or small letters depending on the way it has been originated; try to check a dictionary to be more certain.

1.3 Equations

We prefer to start this section by strongly advising you to use the built-in functions of your word processor to create equations. This will increase the legibility of your writing.
There are many ways you must follow in writing equations. Most of them are related to the grammar rules of English because equation should be regarded as being part of the text and punctuated accordingly. For short and uncomplicated equations, they can be treated as nouns in sentences:

If an object starts with a velocity u at a time $t = 0$ and at a later time t has a velocity of v, then its change in velocity is $\Delta v = v - u$ and $\Delta t = t$.

Longer and more complicated equations should be written on a separate line, centered, and numbered consecutively beginning with (1) along the right margin, to the end of the paper. This number is used when referring to the equation throughout the text.

The duration of the heating cycle can be approximated by the equation

$$t = 2R_t C_t, \tag{1}$$

where t = cycle time, s; R_t = resistance, Ω and C_t = capacitance, F.

Within the text, the reference to these equations is an abbreviation to the word "Equation" written as "Eq. (1)". However, if you begin your sentence with a reference to an equation, the word must be spelled out fully.

As a final note, all variables/symbols mentioned in the equation and not previously defined should be listed (use semicolon to separate them) and explained, most commonly, in the text following it starting with the word "where" or "with" but do not capitalize or indent these two words. As an example, refer to Eq. (1).

1.4 Tables and Figures

In general, 'Results' section is where you are going to share your data with the readers using tables and figures, and it is perhaps the most important part when writing a research paper. Tables and figures should be produced in clear and effective way that demand careful planning that, sometimes, starts at the manuscript writing stage itself. When presenting tables and figures, it is important to avoid repeating the information which is already elaborated in text and should not be again given in tables or figures. This makes the paper unnecessarily lengthy and tables and figures, meaningless. Their placement should be at the center of the page and properly referenced and numbered consecutively, in the order in which they are mentioned in the text. Often, readers review tables and figures before reading the text, therefore, each of which should stand alone in a complete and informative manner.

1.4.1 Tables

Tables should be well structured and organized to attract the interest of readers in your work as they can easily be understood without referring to the text. They are often used for reporting extensive **numerical data** that have been, for example, obtained from conducting multiple experiments and cannot be presented in a graph. These tables are called quantitative tables, as shown in Table 2 which is excerpted from its original work in [1]. Tables are easy to create using simple programs such as Microsoft Word's table feature, i.e., they should NOT be in picture format. All tables share common elements including the caption, column titles, and body.

- Table title (caption) should be brief, clear, and descriptive but sufficiently explained the data included, as such they can be lengthy or short depending on the topic of the paper. Captions for tables are placed above the table (center aligned).

- Column titles (headings) normally used to simplify the table and describing the material below it that help the reader to quickly understand what the table is presenting. Column headings are centered over the columns of numerical data (forming a T-shape). If there are unites that must be stated, then add them in the first row below the column headings.

- The body of the table is usually a group of rows and columns of data. Center-align this data within the body of the table and make it neat and clear by giving plenty of space. Sometimes things seem complicated if the rows and columns need to be grouped or subdivided, in this case, there should be a row or column subheadings.

Table 2- Summary of the AFM information of CdS QDs

Sample	Roughness Average	Root Mean Square	Ten Point High	Average Diameter

	Sa (nm)	Sq (nm)	Sz (nm)	D (nm)
8	0.25	0.29	1.25	55.12
10	0.64	0.77	2.22	61.02
12	1.5	1.73	3.42	74.9

It is also worth mentioning that tables are also a powerful way of showing textual information such as specifications or comparisons. These tables are called qualitative tables, as can be seen in Table 1.

1.4.2 Figures

Figures are used liberally to illustrate thoughts, generally, as a graph, a photograph, or a chart. Photographs in technical papers are mostly of apparatuses used during experiments, however, use it if it really adds something to your explanation; otherwise, schematic drawing serves better. On the other hand, charts and graphs are just another way of presenting the same data that is presented in tables, although in a more pictorial and interesting way. At the same time, however, you get less detail or less precision in a chart or diagram than you do in the table. When using figures, there are several requirements to keep in mind:

- Graphs usually has x and y axes that must be associated with *labels*. Be sure to add sufficient information into the label but try not to get too much into it, for example, *Average Speed (cm/sec)*.

- For all types of figures, you must add a *figure title* (caption) presented and numbered in the same way of table caption, except for the position of the figure caption that is placed below the figure (center aligned).

- Figures, in general, should be in high quality, and the preferred figure format is TIFF. The TIFF should be saved at a minimum resolution of 500 dpi (dots per inch) at final size. You can use 600 dpi if you need more resolution but remember it will create a much bigger file size. You can change the scaling if you need to. TIFF file, especially those containing color, should be large. We encourage authors to provide color figures. Figure legends should be related to figures, and they should be placed outside the figures, NOT inside. The size of all letters and symbols should be appropriately fitting figures. As an example of TIFF files, you can refer to Figures 1 and 2.
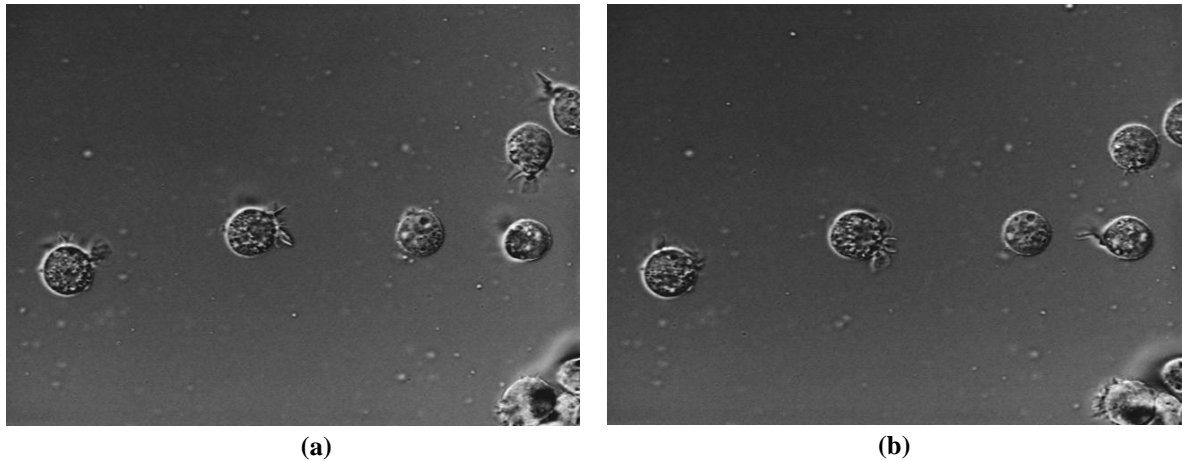
(a) **(b)**

Figure -1 This figure depicts a high-resolution black/white image of biological cells as an examples of TIFF files (a) Frame 1 (b) Frame 2
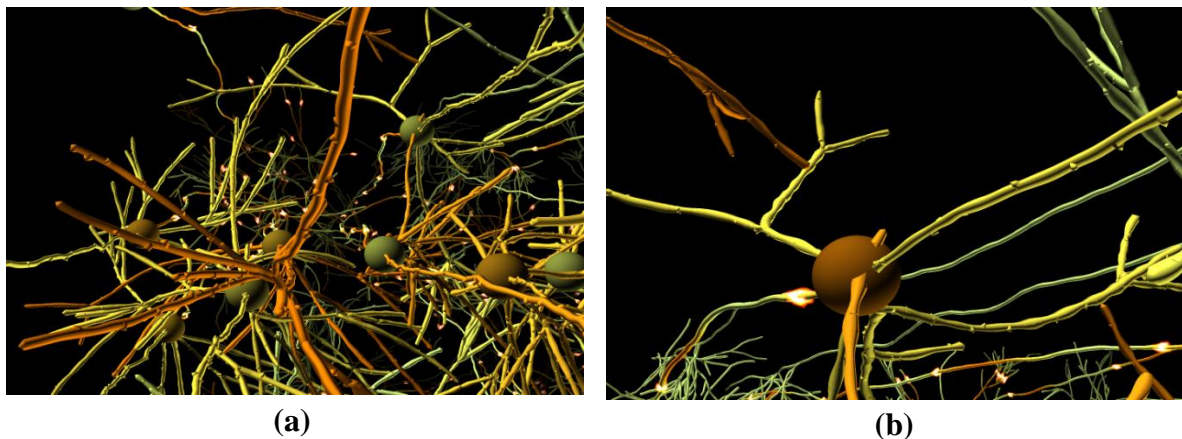

(a) **(b)**

Figure -2 This figure depicts a high-resolution color image of a still from an animation about brain cells as an examples of TIFF files (a) Frame 1 (b) Frame 2

3. Acknowledgements

It is the proper section in the paper to thank all the people who helped you most in carrying out your research work. For example, a supervisor, a sponsoring institution, a funding body, and your colleagues or other researchers who have helped in the preparation and agreed to share with you their unpublished results. Acknowledge people's help and contribution will ensure the integrity of your research. It is also worth remembering that the style of writing the acknowledgement should be in a professional manner, so try to avoid any emotional or personal thoughts.

4. Ethical responsibilities of authors

This journal is committed to upholding the integrity of the scientific record. As a member of the Committee on Publication Ethics (COPE) [2] the journal will follow the COPE guidelines on how to deal with potential acts of misconduct. Authors should refrain from misrepresenting research results which could damage the trust in the journal and ultimately the entire scientific

endeavor. Maintaining integrity of the research and its presentation can be achieved by following the rules of good scientific practice, which includes:

1. The manuscript has not been submitted to more than one journal for simultaneous consideration.

2. The manuscript has not been published previously (partly or in full), unless the new work concerns an expansion of previous work (please provide transparency on the re-use of material to avoid the hint of text-recycling ("self-plagiarism")).

3. A single study is not split up into several parts to increase the quantity of submissions and submitted to various journals or to one journal over time.

4. No data have been fabricated or manipulated (including images) to support your conclusions.

5. No data, text, or theories by others are presented as if they were the authors own ("plagiarism"). Proper acknowledgements to other works must be given (this includes material that is closely copied (near verbatim), summarized and/or paraphrased), quotation marks are used for verbatim copying of material, and permissions are secured for material that is copyrighted.

6. Authors whose names appear on the submission have contributed sufficiently to the scientific work and therefore share collective responsibility and accountability for the results.

5. Statements on compliance with ethical standards and standards of research involving animals

Any use of animals for scientific purposes must be ethical, humane, and responsible. There are national laws and rules and international conventions and agreements regarding the use of laboratory animals, and both researchers and research institutes must comply with these. Any person who plans to use animals in experiments must familiarize themselves with the current rules. In particular, authors should ensure that their research complies with the commonly accepted '3Rs' in https://www.nc3rs.org.uk/the-3rs:

- Replacement of animals by alternatives wherever possible,
- Reduction in number of animals used, and
- Refinement of experimental conditions and procedures to minimize the harm to animals.

For further guidance authors should refer to the Code of Practice for the Housing and Care of Animals Used in Scientific Procedures [3]. Also, animals endorses the ARRIVE guidelines (www.nc3rs.org.uk/ARRIVE) for reporting experiments using live animals. Authors and reviewers can use the ARRIVE guidelines as a checklist, which can be found at www.nc3rs.org.uk/ARRIVEchecklist.

If your work includes animals, it is necessary to include a statement of compliance with standards of research involving animals, as follows

"All experiments with humans or animals must approved by the Ethical Committee of the institution in which the work was carried out. For experiments with human subjects, the following sentence must be indicated in a section before the References: "All experiments followed were in accordance with Helsinki Declaration of 1975, as revised in 2000. An informed consent for all human subjects included in the study is also required. For studies with animals, authors must indicate the following sentence in a section preceding the References: "All institutional and national guidelines for the care and use of laboratory animals were followed." The Iraqi Journal of Science will not accept articles in which the ethical aspects are open to doubt."

If you publish an article and there are reasons to believe that you could have used animals but did not, then you should write:

"This article does not contain any studies involving animals performed by any of the authors."

6. Disclosure and conflict of interest

A conflict of interest is any relationships or spheres of interest that may directly or indirectly influence or bias the work. All authors should include a statement disclosing any financial or other substantive conflicts of interest that may be construed to influence the results or interpretation of their manuscript. All sources of financial support for the project should be disclosed, for example

"Conflict of interest: Author X.X.X. owns shares of Company Y mentioned in the article. Author Y.Y.Y. is a member of Committee XXXX."

If there is no conflict of interest the authors should state that:

"Conflict of Interest: The authors declare that they have no conflicts of interest."

7. Citations and references

Finally, this section is compulsory and important to be included when you are not only writing an academic paper but also for scientific reports or any other documents. It is where you state a point that you have obtained from somewhere else, then you will probably need to **cite** those **references**. But why? Because when you are making a claim you need to tell the readers where your evidence comes from, so they can check for themselves. This is to ensure validity and reliability for the point you have made and to make it clear whether this point is your own idea, or it has been quoted, paraphrased, or summarized in your documents or presentations.

How to cite and reference a source, and how to format it, depend on the style set by the journal you are submitting your manuscript to. Here in *Iraqi Journal of Science*, we follow the **Standard IEE numbered style**, in which its citation guide can be found in details at

https://libguides.nps.edu/citation/ieee#book-print (Please click here). IEEE **cross-referencing** is made up of the following two elements:

- In-text citations indicate references by numbers in box brackets in line with the text. The reference numbers must always be given even when the actual authors are referred to, for example

  "…. multi-objective evolutionary algorithm with decomposition (MOEA/D) of Zhang and Li [4] …. using three different decomposition approaches [5]."

- To finish citing sources, a numbered list of references in the order in which they have been cited in the text must be provided at the end of your manuscript. There are many facilities that have been granted to help manage citing your sources, such as EndNote, Mendeley and for simplicity you can just use the built-in reference function in Microsoft Word.

The following examples show the IEEE standard style for a variety of electronic and print sources, such as Journal Articles/Print ([1] and [4]), Conference Proceedings/Print [5], and Book/One author [6].

Acknowledgement

References

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