How to Use the `imeko_acta` LaTeX class

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ABSTRACT
This article describes how to use the imeko_acta.cls class LATEX to produce high quality typeset papers that are suitable for submission to the Acta IMEKO journal.
This class has been created with the intention of requiring the most reasonable minimum effort to the users (authors of papers) in term of packages to load and options to specify.
The editorial team of Acta IMEKO strongly encourages authors to use this LATEX 2ₙ template file to produce their manuscript. Please refer to the author for any suggestion, bug filing and complaint.

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1. THE TITLE PAGE

The title page is created with the standard LATEX command `\maketitle`. Before this command is called, the author must declare all of the text objects which are to appear in the title area.

1.1. Paper Title

Use the classic `title` command. It is safe to put it just after the `\begin{document}` line.

1.2. Authors

Description of authors' management.

1.3. Sections

If a section is long or deals with different topics, make a subdivision in subsections. Avoid further subdivision of a subsection.

When subsections are used, there must be at least two. Use the style named "Level2Title" for the header of a subsection.

1.3.1. Test

If a section is long or deals with different topics, make a subdivision in subsections. Avoid further subdivision of a subsection. When subsections are used, there must be at least two. Use the style named "Level2Title" for the header of a subsection.

1.4. Numbering of subsections

Subsection numbering follows the outline numbering format which is configured in the template. Subsection headings use the Calibri font and are in bold.

This template uses automatic outlined numbering for the sections and subsections. We recommend that the author makes use of this feature. If the author does not feel comfortable with it, he may choose to manually number the sections and subsections.

Configuring a blank Word document to use automatic outline numbering is not always as straightforward as it should be. We point out, nevertheless, that the configuration is already done in this template and the author just can use it. It suffices to place the cursor in the section or subsection title and select the "Level1Title" or "Level2Title" styles already available from the menu or ribbon. This simple procedure is the same that should be used for all other parts of the paper (paper title, main text, abstract, etc.). The author does not have to worry about the numbering at all.

An even simpler procedure would be just to copy and paste an existing section or subsection title and rewrite the text. The author, however, can choose to use manual numbering by deleting the automatic number that comes with the use of the proper style and input the numbers he wishes for each section.

2. ABOUT ILLUSTRATIONS AND TABLE

2.1. Location

Illustrations and tables can have two formats: column wide or page wide. Figure 1 is an example of the first kind [?]. Figure 5 gives an example for a page wide figure. Page wide figures and tables should be placed inside a frame. Column wide ones can be placed inside a frame or directly in the middle of the body text. In both cases they should be located on top or bottom of the page where
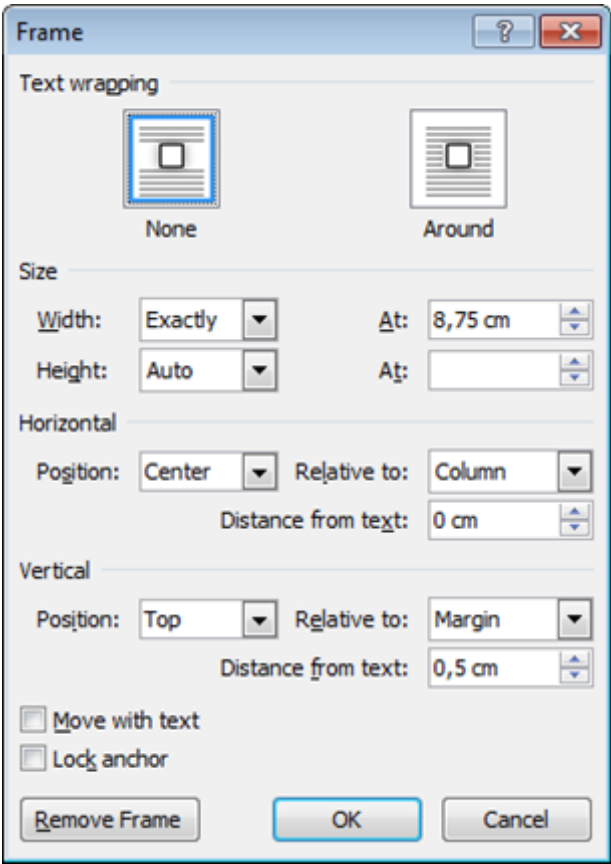

Figure 1. Microsoft Word frame formatting window. It can be accessed by clicking on the frame content to make the frame border visible, clicking in the frame border to select it and finally right click the frame border to show up the pop-up menu and choosing the option "Format Frame".
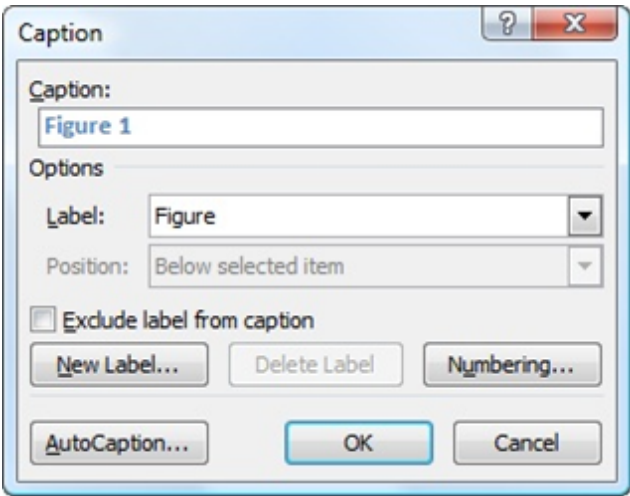

Figure 2. Microsoft Word caption insertion window. It can be accessed by right clicking on the picture or table and selecting "Insert Caption" from the pop-up menu.

they are first referred to in the text if possible. Figures should be configured with the "Figure" style.

2.2. Managing Frames

To create a frame, we recommend that the author copies and pastes one of the frames in this template. Before doing that, however, it is important to understand how they are configured.

Figure 2 shows the window where the configuration is done. It can be accessed by:

1) clicking on the frame content to make the frame border visible;
2) clicking in the frame border to select it;
3) right clicking the frame border to show up the pop-up menu and choosing the option "Format Frame".

That window has 4 sections organized from top to bottom ("text wrapping", "size", "horizontal" and "vertical"). Text wrapping should always be set to none. The size should be exactly 18 cm for page wide illustrations and tables and 8.75 cm for column wide ones. The horizontal setting should be centred relative to the column or page for column wide or page wide content respectively. The vertical setting can be top relative to margin or bottom relative to margin depending where the frame is supposed to be located (top or bottom) of the page. The frames in this template have all the proper formatting and can be used as is. The only setting the author will need to manage when crating new frames by copy and pasting existing ones is the vertical setting that will have to be changed from top to bottom depending on the new frame location.

The copying and pasting of frames should be done with care because the new frame will have the same configuration as the original frame and may overlap with it making one of them invisible to the user. We suggest that the author selects the original frame, chose "copy" (CTRL+C), place the cursor in a page or column that has no frame in the same position as the original and chose "paste" (CTRL+V). It is up to the author to manage in which page or column each frame is to be located.

The more complicated situation is when the author wants to copy a page wide frame that is in the top of a page to a new frame located in the bottom of the same page. Because the original frame vertical setting is top the new pasted frame will also have the same setting and will overlap with the original one if placed in the same page. The solution is to paste the frame in a different page where no frames exist in the top (can be a temporary blank page at the end of the document), change the vertical setting to bottom and perform a cut and paste to the desired page. It will then show up at the bottom of that page. If the author prefers to create a frame from scratch, he/she can choose "insert text box". Then he/she should right click on the text box border and select from the pop-up menu the option to format the text box. In the window that becomes visible press "convert to frame". The properties of the frame should be adjusted as described previously.

2.3. Captions

Place the figure captions directly below the figure inside the frame and choose the style "Figure caption". Figure captions have the format "Figure x. aaa." where x stands for the figure number and aaa for the figure caption. Figures should be numbered consecutively with Arabic numerals starting from 1. Note that the caption should end with a period.

The paragraph spacing before the caption should be 6 pt and after the caption should be 12 pt. This is defined in the "Figure caption" style. This formatting should be overridden in the case of figures placed at the bottom of a page so that the paragraph spacing after the caption is 0. See, for instance, the caption of Figure 5.

Table captions should be placed inside the frame directly above the table. Format it with the style "Table caption". Table captions
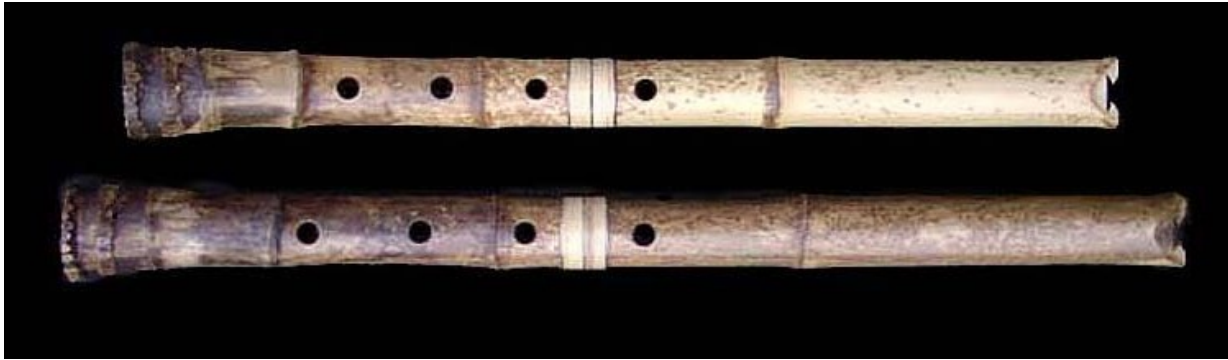
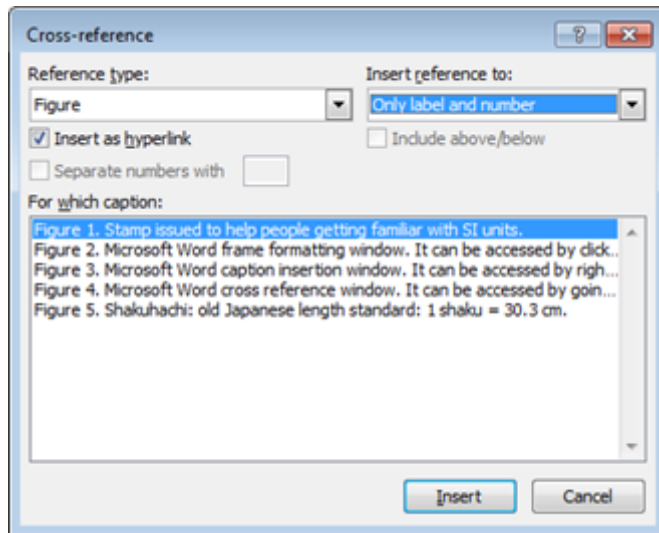Figure 3. Shakuhachi: old Japanese length standard: 1 shaku = 30.3 cm

Figure 4. Microsoft Word cross reference window. It can be accessed by going to the menu "References" and choosing "Insert Cross Reference".

have the format "Table y. aaa." where y stands for the table number and aaa for the table caption. Tables should be numbered consecutively with Arabic numerals starting from 1. Tables and figures should have separate numberings. Note that table captions should also end with a period.

The paragraph spacing before the table caption should be 12 pt and after the caption should be 6 pt. This is defined in the "Table caption" style. This formatting should be overridden in the case of tables placed at the top of a page so that the paragraph spacing before the caption is 0. See, for instance, the caption of Table 1.

2.4. Tables

Tables span a full page in width, for example, Table 1, or a full column, see Table 2. Avoid breaking tables across pages. Table captions are placed ABOVE the table. Table 1 summarizing the various styles used in this template, whereas Table 2 shows a subset of the data given in Table 1.

2.5. Numbering

Microsoft Word permits to have figure and table numbering done automatically. The author is asked to use this feature, if possible, instead of numbering them by hand. The captions in this template already use automatic numbering. The best way for the author is just to copy and paste those captions and change the text accordingly. Because the number in the copied caption label will not be automatically updated, the author can place the cursor in the caption number and press the key F9 to update it (the number background turns grey because it is a "field code").

If the author wants to use automatic caption numbering but creates captions from scratch, he/she can right click on the picture or table and select "Insert Caption" from the pop-up menu. A window will be displayed (Figure 3) where one can choose the label "Figure" or "Table" and insert the caption text. If those labels are not in the drop-down list the author can add them by using the "New Label" button.

2.6. Referring to figures and tables in the text

If automatic caption numbering is used the author should refer to the figures and tables in the text using automated references. A reference can be inserted in a given point in the text by going to the menu "References" and choosing "Insert Cross Reference" (Figure 4). Select which figure or table are to be cited, the label type ("Figure" or "Table") and that only the label and number should be used in the citation. Keep the option "insert as hyperlink".

3. ABOUT EQUATIONS

All equations should be numbered consecutively throughout the paper. Do not use outline numbering per section. LaTeX 2" automatically handles all of this. Numbers are placed between parentheses aligned right, and without a label, see equation (1) as an example, expressing the saturation current ID in a MOSFET transistor [?]:

$$I_D = \frac{W^- ffl_0 ffl_{0x} V_{GS}^2}{2Lt} \tag{1}$$

where W is the channel width, L the channel length, ffl_0 the dielectric constant of free space and ffl_{0x} of the oxide, $^-$ is the mobility in the channel, t the oxide thickness and V_{GS} the gate voltage [?]. Make sure that all symbols are defined unambiguously. When confusion may arise, add the units of the parameters between square brackets. Use SI and derived units only [?].

Long equations that normally span more than one column should be wrapped over more lines, broken at a suitable place by arithmetic symbols (=, +, −, ×) as separator. An example is equation (2) about the surface heat flux per unit area along a flat plate [?].

$$P_f^{"}(x) = 0{:}538^{\v{}}_f \left(\frac{Pr}{\circ}\right)^{1/3} \left(\frac{\o_w(x)}{-}\right)^{1/2} \times$$
$$\int_0^x \left(\int_0^x \sqrt{\frac{\o_w zeta}{-}} d_1\right)^{-1/3} \frac{@T_w(x_1)}{@x_1} dx_1 \tag{2}$$

Equations are considered part of the previous sentence and should, when appropriate, have a period or a comma after them, as in (2).

Table 1. Overview of styles and font sizes used in this template.

Section	Font	Size (pt)	Format	Special
Title	Calibri	20	bold	Only first letter is capital
Authors	Calibri	12	bold	
Affiliation and email address	Calibri	9	italic	
Abstract text	Calibri	9	normal	
Keywords	Calibri	8	normal	label in bold
Citation	Calibri	8	normal	label in bold
Editor	Calibri	8	normal	label in bold
Dates	Calibri	8	normal	label in bold
Copyright	Calibri	8	normal	label in bold
Funding	Calibri	8	normal	label in bold
Corresponding author	Calibri	8	normal	label in bold
First-level Section headings	Calibri	10	Bold	numbered, all caps
Subsection headings	Calibri	9	Bold	outline numbered
Body text	Garamond	10	normal	justified
Acknowledgements, Appendix	Garamond	10	normal	as body text
Footnotes	Calibri	8	normal	as body text
Equations	Garamond/Symbol	10	italic	numbered
Equations (subscript/superscript)	Garamond/Symbol	70% of 10	italic	numbered
Equations (sub-subscript/superscript)	Garamond/Symbol	60% of 10	italic	numbered
Table text	Calibri	8	normal	bold headings
Figures	Calibri	9	normal	centered
Captions of figures and tables	Calibri	8	normal	justified
References	Garamond	9	normal	numbered

Note that punctuation of equations must follow the normal rules of grammar. Therefore, for example, equations can be followed by a dot only if the sentence is finished.

Very short equations that are not further referred to may be inserted in line with the text, for instance $R = V/I$. Make sure that all variables are in italic, also when used in the main body.

Note that the font size for equations is 10 pt and that it must be reduced to 70 % and 60 % in the case of subscript/ superscript and sub-subscript/superscript respectively.

Mind proper notations. Some typical errors or wrong formats should be avoided at the very beginning:

- variables must be italic: $V2$
- numbers and units not: 3 V
- space between value and unit: 3 kHz, 10
- units never between square brackets [...].

Table 2. Example of a small table.

Section	Font
Title	Calibri
Authors	Calibri
Affiliation and email address	Calibri
Abstract text	Calibri
Keywords	Calibri
Citation	Calibri
Editor	Calibri
Dates	Calibri
Copyright	Calibri
Funding	Calibri
Corresponding author	Calibri
First-level Section headings	Calibri
Subsection headings	Calibri

4. ABOUT REFERENCES AND CITATIONS

References are limited to published works or papers that have been accepted for publication and should give full bibliographical information. They are placed in the section References at the end of the manuscript, in order of their appearance in the text.

References are cited in the text by a number between square brackets. Ensure that every reference cited in the text is also present in the reference list and vice versa.

Citation of multiple or consecutive references must follow the notation [1], [2], [4] or [1]-[3], respectively.

Unpublished results and personal communications may be included in the reference section following the standard reference style and should include a substitution of the publication date with either "Unpublished results" or "Personal communication".

Citation of a reference as "in press" implies that the item has been accepted for publication. The format of references is as follows:

a. For journal articles: Initials and last name(s) of each author, Title of article (first word only capitalized), Journal title, volume number, (year), pages.

b. Book references: Author(s) as above, Title of book (main words capitalized), publisher, city of publication, year, ISBN.

c. For a chapter in an edited book: Author(s) as above, Title of article (first word only capitalized), in: Title of book (main words capitalized). Editor(s). Publisher, city of publication, year, ISBN, pages.

d. Conference proceedings: Initials and last names of each author, Title of article (first word only capitalized), name of the conference, place, country, date, pages.

e. Links to web content, for example freely downloadable papers, can be included as shown in [5].

f. Where available, DOIs of references must be added as shown in [1].

g. References that are not in English, must be followed by the language, for example, in the form [In Italian] as shown in [7].

There is a section break at the end of the paper (after the references) so that the content of the last page is equally divided between the two columns.

5. CONCLUSIONS

The concluding section contains the major achievements of the research presented in the manuscript. It should be concise but informative [?]. When numerical results are an essential part of the research, for instance a wider measurement range, higher uncertainty [?], they should be included in the conclusions. Notice that conclusions are not the same as an abstract.

ACKNOWLEDGMENT

Here persons or institutes may be acknowledged for their technical, scientific or financial support. List them in this section, and not as a footnote or otherwise.