

APPROVED

by Decision of the Council of the Faculty of
Chemistry and Geosciences of Vilnius university
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GUIDELINES FOR PREPARATION OF A RESEARCH PAPER AT THE FACULTY OF CHEMISTRY AND GEOSCIENCES OF VILNIUS UNIVERSITY

Structural requirements

The recommended scope of the text is 1–3 author's sheets for the Bachelor's thesis and 1.5–4 author's sheets for the Master's thesis without appendices (1 author's sheet is equal to 40.000 characters including the spaces between words). The scope of other papers depends on the task. All supplementary materials, initial data, software textual output as well as large data sets produced by the author or illustrations should be presented in the appendices.

The paper must be written in scientific style, using correct Lithuanian or English; it must not contain spelling, punctuation or other language mistakes.

The paper should be printed on ISO A4 sized (210 × 297 mm) sheets, using portrait page orientation except tables and figures that are more convenient to lay out using landscape orientation. The pages oriented horizontally (portrait) are separated with section breaks and numbered in the same manner as other pages. If the cartographic illustrations or drawings cannot be minimized to fit the format, larger graphics are allowed. Page format: left margin (inner margin if the text is printed on both sides) 30 mm; right margin (external if printed on both sides) 10 mm; top and bottom margins 20 mm; alignment *Justified*; each paragraph is started with a new line; indentation of the first line is 10 mm.

The text should be computer typed; text typeface – *Times New Roman*, font size – 12 pt, with single spaces between words; line spacing – 1.15. Font size of the text in footnotes – 10 pt, with single spacing between lines. The font size and spacing between lines may be reduced in tables with large volumes of data. It is recommended to set *Normal* style and use it throughout the document. Separate paragraphs, e.g. lengthy citations may be formatted in another way but consistency must be maintained throughout the text.

Pages are numbered consecutively starting with the title page (numbers are not written on title and contents pages) and finishing with appendices. Page number is indicated in the lower right-hand corner using Arabic numerals; font size for numbering 10 pt; periods or dashes are not used.

The paper is divided into chapters, and chapters are divided into section headings and, if necessary, into subheadings. Each section is started on a new page. If chapters contain headings, and headings are subdivided, there must be more than one heading (subheading) in each section. Each section should analyse a separate problem or part of it. Headings and subheadings must not start or end with figures or tables. Structural parts (headings and subheadings) should be numbered. Introduction, conclusions, references, abstract and appendices are not numbered. The names of the headings and subheadings should be written on the same page as the text which is related to them. Names of chapters, headings and subheadings are written on the left side of the line, no punctuation signs are used at the end. Chapters, headings and subheadings are separated by single spacing.

Fonts used in names of different sections of the paper:

- 1) upper case characters for chapters, size 12 pt, font B (Bold) *Times New Roman*;

- 2) headings in lower case characters, size 12 pt, font B (Bold) *Times New Roman*;
- 3) subheadings in lower case characters, size 12 pt, *Times New Roman*;
- 4) Names of annexes are typed in the same manner, however, flush right (aligned right).

The number of the appendix is written one line above the name of the annex (Annex 1).

Graphs, photographs and other visual illustrations are referred to as figures. Figures and tables should be placed as close as possible to the parts of the text to which they relate; reference to them should be indicated. It is recommended that tables and figures follow the text in which they are discussed.

Figures, tables and formulas are numbered; numbering may either be hierarchical, taking into consideration the number of the section (Fig. 1.1, Fig 1.2, Fig. 1.3 etc.) or consecutive (Fig. 1, Fig. 2, Fig. 3). Each figure or table should have a caption as short and clear as possible; references to tables and figures should be presented in the text; the data source for the figure or table has to be indicated. Captions of figures and tables are written in 12 pt size characters. The caption of the figure should be placed immediately below the figure, the caption of the table should be written above the table. The caption is followed by a period sign. The textual information presented in figures should be translated into the language in which the whole paper is written.

The font size, style, and notes are chosen taking into consideration the complete layout of the project. The font should be legible.

It is not allowed to leave half-empty pages except the final pages in a section. The paper should be printed on white paper of good quality (feint-ruled paper is not allowed). The thesis may be printed either on a single side or on both sides of the sheet.

Bachelor's and Master's theses are bound in either a soft or hard cover.

Citations and references to literature and other sources

When other authors' information (numerical data, dates, main ideas, figures, classifications, definitions etc.) is used in the paper, it has to be acknowledged by indicating the source. Only references that have been cited in the body of the paper should be included. The recommended scope of the list of references is at least 20 entries for a Bachelor's thesis and at least 30 entries for a Master's thesis. The majority of sources cited in Master's thesis should be scientific research articles.

The list of references (References) is presented at the end of the paper. Preference should be given to handling citations using *Mendeley* or other citation management tools over manual organisation.

Two styles of referencing are acceptable at the Faculty of Chemistry and Geosciences:

1. Only the number of the source in the Reference list is presented in square brackets immediately after citation in the text, e.g. [1]. Bibliography sources are numbered according to the order of appearance in the text. Anytime the source is referred to again, the text is marked with the same number. At the end of the paper, a list of references provides full publication information for each numbered source. Entries in the reference list are numbered in the order in which they are mentioned in the paper. If the information is based on two sources that are not included consecutively in the references list, they are separated by a comma, e.g. [2,3] or [2,5,6]. If more than one source is cited, and their names appear consecutively in the references list, then only the first and the last number are included, with a dash between the numbers, e.g. [1–4].

When citing the source for the first time, it is possible to mention the surname of the author without initials of the name(s). If the source has more than one author, only the first author is indicated.

- Petrauskas and Jonauskas were the first to use this method of synthesis [1].
- Kazlauskas et al. used this method for synthesis [2] (abbreviation *et alii* (Latin) stands for *and others*).

2. In the text (in-text citation), the source is indicated immediately after citation or reference to it, only the surname of the author and the year of publication are written in parentheses (Jonaitis, 2019). If several sources by the same author published in the same year are cited, then a letter index is added to the year, which corresponds to the order of appearance in the list of references (Petraitis, 2012c). If the source was written by two authors, both surnames are indicated (Juozaitis and Antanaitis, 2018). If the paper was written by more than two authors, only the name of the first author is included, with indication that it was done with co-authors (Aleksaitis et al., 2017). The abbreviation *et al.* (*et alii* (Latin) – and others) is a convention used to indicate multiple authors (co-authors), e.g. (Aleksaitis et al., 2017). The names of all the co-authors must be included in the reference list.

In-text references can be in any style as long as the style is consistent. The citation styles recommended for use at the Faculty of Chemistry and Geosciences are the “Journal of Luminescence” (the source indicated in square brackets) or “American Psychological Association” (APA) (the surname(s) of the author(s) and year of publication in parentheses) styles. The reference list must include all the sources cited in the text.

1. Examples of a reference list according to the “Journal of Luminescence” style:

Only sources that have been mentioned or cited in the text are included in the reference list. Number the references (numbers in square brackets) in the list in the order in which they appear in the text. If the source is cited several times, it is assigned the number that was given when it was mentioned for the first time. The surnames of all the authors must be included in the reference list.

1.1. Reference to scholarly articles [1-4].

List all the authors, indicate the title of the article and an abbreviation of the journal title (for abbreviations, visit <https://www.library.caltech.edu/journal-title-abbreviations>), volume, year and page range. Add DOI (Digital Object Identifier) number if known:

[1] C.R. Ronda, T. Jüstel, H. Nikol, Rare earth phosphors: fundamentals and applications, *J. Alloys Compd.* 275 (1998) 669–676. doi:http://dx.doi.org/10.1016/S0925-8388(98)00416-2.

[2] M. Bettinelli, A. Speghini, F. Piccinelli, A.N.C. Neto, O.L. Malta, Luminescence spectroscopy of Eu^{3+} in $\text{Ca}_3\text{Sc}_2\text{Si}_3\text{O}_{12}$, *J. Lumin.* 131 (2011) 1026–1028. doi:http://dx.doi.org/10.1016/j.jlumin.2011.01.016.

[3] O.D. Marbello, S. Valbuena, F.J. Racedo, Study of the nonlinear optical response and thermal stability of edible oils using the Z-scan technique, *Talanta.* 206 (2020). doi:https://doi.org/10.1016/j.talanta.2019.120226.

[4] C.R. Ronda, Phosphors for lamps and displays: an applicational view, *J. Alloys Compd.* 225 (1995) 534–538. doi:http://dx.doi.org/10.1016/0925-8388(94)07065-2.

If the page numbers are unknown, indicate DOI number alone.

1.2. Reference to books or a book chapters.

[5] G. Blasse, B.C. Grabmaier, *Luminescent materials*, Springer-Verlag, Berlin, 1994. <http://books.google.ch/books?id=zMDvAAAAMAAJ>.

[6] A. Rutgerosson, J. Jaagus, F. Schenk, M. Stendel, L. Barring, A. Briede, B. Claremar, I. Hannsen-Bauer, J. Holopainen, A. Moberg, Ø. Nordli, E. Rimkus, J. Wibig, Recent Change - Atmosphere, in: *Second Assess. Clim. Chang. Balt. Sea Basin*, 2015. doi:10.1007/978-3-319-16006-1.

1.3. Reference to Internet sources [7,8].

[7] B. Dunbar, NASA Image of the Day, Natl. Aeronaut. Sp. Adm. (2017). <https://www.nasa.gov/multimedia/imagegallery/iotd.html> (retrieved 14 August 2019).

[8] Vilniaus miesto savivaldybė, Vilniaus miesto bendrojo plano keitimas, (2019). <https://vilnius.lt/lt/savivaldybe/miesto-pletra/vilniaus-miesto-bendrasis-planas/> (retrieved 1 September 2019).

1.4. Reference to conference proceedings [9].

[9] R.M. Yugueros, J.M.D. Altisent, R.L. Snyder, A.M.T. Alfonso, Future reference evapotranspiration in Duero Valley (Spain), in: Proc. 8th EGU Gen. Assem. EGU 2011, 2011.

1.5. Reference to laws and directives [10].

[10] EU Water Framework Directive 2000/60/EC, DIRECTIVE 2000/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2000 establishing a framework for Community action in the field of water policy, 2017. doi:10.1039/ap9842100196.

1.6. Reference to reports and parts of reports [11,12].

[11] IPCC, Climate Change 2014, 2014. doi:10.1017/CBO9781107415324.

[12] IPCC, Climate Change 2014 Synthesis Report Summary Chapter for Policymakers, Ippc. (2014). doi:10.1017/CBO9781107415324.

1.7. Reference to databases [13-15].

[13] Eurostat, Renewable energy statistics - Statistics Explained, Eurostat. (2018).

[14] I. Harris, P.D. Jones, CRU TS4.01: Climatic Research Unit (CRU) Time-Series (TS) version 4.01 of high-resolution gridded data of month-by-month variation in climate (Jan. 1901- Dec. 2016), Cent. Environ. Data Anal. (2017). doi:10.5285/58a8802721c94c66ae45c3baa4d814d0.

[15] European Environment Agency, Corine Land Cover 2006 raster data, 2010.

2. Examples of presenting a reference list in “American Psychological Association” (APA) style:

The reference list is arranged in an alphabetical order of the authors' last names (surnames). If there is no author, the title moves to that position and the entry is alphabetised by the first significant word, excluding articles such as “A/An” or “The”. If there is more than one work by the same author, order them by publication date – oldest to newest (therefore a 2004 publication would appear before a 2008 publication). If a source has the same author and same date, differentiate between them by assigning lowercase letters a, b, c, etc. They are listed in the reference list alphabetically by title (excluding A or The).

2.1. Reference to scholarly articles (Bettinelli et al., 2011; Marbello et al., 2020; Ronda, 1995; Ronda et al., 1998):

Bettinelli, M., Speghini, A., Piccinelli, F., Neto, A. N. C., Malta, O. L. (2011). Luminescence spectroscopy of Eu^{3+} in $\text{Ca}_3\text{Sc}_2\text{Si}_3\text{O}_{12}$. *Journal of Luminescence*, 131, 1026–1028. <https://doi.org/http://dx.doi.org/10.1016/j.jlumin.2011.01.016>

Marbello, O. D., Valbuena, S., Racedo, F. J. (2020). Study of the nonlinear optical response and thermal stability of edible oils using the Z-scan technique. *Talanta*, 206. <https://doi.org/https://doi.org/10.1016/j.talanta.2019.120226>

Ronda, C. R. (1995). Phosphors for lamps and displays: an applicational view. *Journal of Alloys and Compounds*, 225, 534–538. [https://doi.org/http://dx.doi.org/10.1016/0925-8388\(94\)07065-2](https://doi.org/http://dx.doi.org/10.1016/0925-8388(94)07065-2)

Ronda, C. R., Jüstel, T., Nikol, H. (1998). Rare earth phosphors: fundamentals and applications. *Journal of Alloys and Compounds*, 275, 669–676. [https://doi.org/http://dx.doi.org/10.1016/S0925-8388\(98\)00416-2](https://doi.org/http://dx.doi.org/10.1016/S0925-8388(98)00416-2)

2.2. Reference to a book or book chapter (Blasse and Grabmaier, 1994; Rutgersson et al., 2015).

Blasse, G., Grabmaier, B. C. (1994). Luminescent materials. Retrieved from <http://books.google.ch/books?id=zMDvAAAAMAAJ>

Rutgersson, A., Jaagus, J., Schenk, F., Stendel, M., Barring, L., Briede, A., Wibig, J. (2015). Recent Change - Atmosphere. Second Assessment of Climate Change for the Baltic Sea Basin. <https://doi.org/10.1007/978-3-319-16006-1>

2.3. Reference to the Internet sources (Dunbar, 2017; Vilniaus miesto savivaldybė, 2019).

Dunbar, B. (2017). NASA Image of the Day. Retrieved 14 August 2019, National Aeronautics and Space Administration website: <https://www.nasa.gov/multimedia/imagegallery/iodtd.html>

Vilniaus miesto savivaldybė. (2019). Vilniaus miesto bendrojo plano keitimas. Retrieved 1 September 2019, <https://vilnius.lt/lt/savivaldybe/miesto-pletra/vilniaus-miesto-bendrasis-planas/>

2.4. Reference to conference proceedings (Yugueros et al., 2011)

Yugueros, R. M., Altisent, J. M. D., Snyder, R. L., Alfonso, A. M. T. (2011). Future reference evapotranspiration in Duero Valley (Spain). Proceedings of 8th EGU General Assembly, EGU 2011

2.5. Reference to Laws and directives (EU Water Framework Directive 2000/60/EC, 2017)

EU Water Framework Directive 2000/60/EC. (2017). DIRECTIVE 2000/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2000 establishing a framework for Community action in the field of water policy. In Official Journal of European Communication. <https://doi.org/10.1039/ap9842100196>

2.6. Reference to reports or parts of reports (IPCC, 2014a, 2014b)

IPCC. (2014a). Climate Change 2014. In Climate Change 2014: Synthesis Report. <https://doi.org/10.1017/CBO9781107415324>

IPCC. (2014b). Climate Change 2014 Synthesis Report Summary Chapter for Policymakers. Ipc. <https://doi.org/10.1017/CBO9781107415324>

2.7. Reference to databases (European Environment Agency, 2010; Eurostat, 2018; Harris and Jones, 2017)

European Environment Agency. (2010). Corine Land Cover 2006 raster data. In European Environment Agency.

Eurostat. (2018). Renewable energy statistics - Statistics Explained.

Harris, I., Jones, P. D. (2017). CRU TS4.01: Climatic Research Unit (CRU) Time-Series (TS) version 4.01 of high-resolution gridded data of month-by-month variation in climate (Jan. 1901- Dec. 2016). <https://doi.org/10.5285/58a8802721c94c66ae45c3baa4d814d0>