IIR Student Competition – International Congress of Refrigeration ICR2015

ICR2015 Yokohama, Japan

Undergraduate Students Project Award
Refrigeration For The Sustainable Cold Chain And Food Safety (RSCC&Fs)

On the occasion of ICR2015, the IIR will sponsor the undergraduate student project competition entitled "ICR2015 Refrigeration for the Sustainable Cold Chain and Food Safety" (RSCC&Fs). Open to undergraduate students from engineering schools, their project should focus on one essential global issue related to food availability and food safety.

Submitted work should provide clear responses to problems relevant to cold chain sustainability and food safety. It can be either experimental (for example energy efficiency audit of a cold store), analytical, numerical, or of a design type.

Either a bachelor thesis or undergraduate study work, it can be done by one student or a group of three maximum. To be eligible for the competition, a bachelor thesis must have been defended at the home university during the school years 2012-2014 or later.

The following list shows a few examples of possible topics:

- Cold chain sustainability and food safety
- Refrigeration energy efficiency (design, audit and monitoring)
- Security of energy supply in food chain; role of renewable energy sources
- Refrigeration energy efficiency in food transportation

Student Competition Rules

- An IIR Member country’s National Committee/Association may submit a maximum of one entry to the competition to be sent electronically to the chairman of the IIR Student Competition Jury.

- Submission must be in English and must include:
  - Title of the work, name(s) and institution(s) of the student(s) with full institution address and email contact(s), name of the supervisor(s) and year when the study or thesis work was defended at the home university.
  - Work Summary in the form of a technical paper prepared according to the author’s guidelines for IIR Congress papers (see Annex below).
  - Power point presentation with 15 slides maximum.

Deadline for contestants to submit their entries
March 20, 2015
Deadline for participants to submit entries (electronically) to the responsible organization (National Committee or Association) of the IIR Member Country.

The Jury and Judging Evaluation Criteria
The jury will make its decision based on submitted Work Summary and Power Point presentation implementing the following awarding criteria:

- Scientific - technical relevance
- Statement of objectives and goals
• Methodology
• Validity and reliability of results
• Structure and quality of study presentation
• Power Point presentation

Evaluation Schedule and Processing
There will be two levels of evaluation: at the country level and at the IIR level.

April 1, 2015
Deadline for the IIR Member Country to select the best entry and forward it electronically to the Chair of the IIR Student Competition Jury with a copy to the IIR Head Office. The Chair distributes all received entries to the members of the IIR Student Competition Jury.

- **Chair of the IIR Student Competition Jury:**
  Prof. Maria S. Todorovic
  University of Belgrade
  Belgrade, Serbia,
  Email: [deresmt@EUnet.rs](mailto:deresmt@EUnet.rs)

- **IIR Head Office:**
  Justine Evans
  IIR Communications and Conference Development Manager
  Email: [j.evans@iifiir.org](mailto:j.evans@iifiir.org)

April 15, 2015
Deadline for the IIR Student Competition Jury members to rank the submitted entries and to send them to the Chair of the IIR Student Competition Jury. The Chair consolidates the rankings and electronically distributes them to the Jury members.

April 30, 2015
Deadline for the IIR Student Competition Jury to hold a conference call to compare and discus their rankings and to make the final decision on the best three entries to be selected as 1st, 2nd, and 3rd place winners. The conference call is organized and managed by the IIR Head Office in Paris. The Head Office announces the results the next day.

The awards are to be presented during the IIR Congress in Yokohama as follows:

The three winners, 1st, 2nd, and 3rd, will be announced and will receive the same honours consisting of:

- An IIR diploma naming the student as the recipient of the 1st, 2nd, or 3rd award
- A €500 cheque
- Full free registration to the IIR Congress.

If an award is given to a group of students, each student will receive the IIR diploma, but only the group leader will receive the full free registration to the Congress, and the €500 cheque will be issued in their name.

The winners will be requested to present their work within the Congress technical program.

The winners will be requested to present their work within the Congress technical program. The work summary will be used for evaluation only and will not be included in the Congress proceedings.

National Committees/Associations should consider enhancing the IIR award by contributing towards winner’s travel expenses to the Congress.
Annex: Guidelines for Preparation of Work Summary for the IIR Undergraduate Student Project Competition

The entire project summary manuscript (i.e. text, figures, tables, references and abstracts) should not exceed eight (8) pages. In order to standardize manuscript for jury evaluation, students are asked to follow the instructions below.

**LANGUAGE**

Manuscripts should be written in English. The terminology of the IIR’s International Dictionary of Refrigeration should be used as much as possible.

**ABSTRACT**

Manuscripts should feature an abstract of at most 150 words in the language of the manuscript. 4 to 6 keywords must be provided after the abstract.

**TYPEFACE AND PARAGRAPH FORMAT**

"Times New Roman" or a similar sans-serif font should be used, along with 11-point type, black ink and single spacing between lines.

Paragraphs are not to be indented.

**MARGINS**

All text of the manuscript must be located within a 170-mm by 252-mm rectangle of an A4 page, with margins as indicated in Table 1.

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**TITLE**

The title of the manuscript should be in font size 14, centered in capital letters and boldface type; one blank line should be included above and below it.

**AUTHOR (S) and MENTOR or PROJECT SUPERVISOR**

The initial of the student’s first name should be given first, followed by the last name. If more than one student participated in the project, their names should be given after the lead student. The Mentor’s or Supervisor’s should be listed last, first name initial followed by the last name. The complete mailing address for the lead student including the fax number and e-mail address should be given, including the name of the university. It is to this address that correspondence is to be sent. The address and university of other students may be given, if necessary. Asterisks should be used to indicate which address goes with which author. The address (es) should be centered and in lower-case letters. The different parts of the address (es) should be separated by commas and if more than one line is necessary, the various lines should be of roughly the same length.

**TITLES AND SUB-SECTION HEADINGS**

Numbered (i.e. 1., 2., 3., etc.) with the exception of the abstracts.
All titles of sections should be centered, in boldface capital letters and numbered (i.e. 1.1., 1.2., 1.3., etc.). A blank line should be placed above and below the titles.

Sub-section headings should be in small, boldface letters and justified left. A blank line should be placed above, but not below, them.

Sub-sub-sections should be avoided. If used, they should be justified left, in normal lower-case letters, with the text beginning to the right of the sub-sub-section heading.

FOOTER

Authors are asked to add a one-line left-justified footer on each page of the manuscript. The line should read “Name of the IIR Conference, Location, and Year.” The footer shall be placed 1.27 cm from the bottom edge of the page.

PAGE NUMBERING

Authors are asked not to number the pages sent by e-mail.

UNITS

The SI system of units should be used.

EQUATIONS

Equations should be centered, numbered in order (i.e. (1), (2), (3), etc.) down the right-hand side of the page and cited in the text with its number, e.g. eq. (1). Equations should be separated from the text above and below by a blank line.

TABLES AND FIGURES

Each table should be numbered (Tables 1, 2, 3, etc.), with the caption being placed above the table. Each figure should be numbered (Figures 1, 2, 3, etc.), with the caption being placed below the figure.

Figures and tables should be incorporated in the text and should not run into the margins. In the text, figures and tables should be named as follows: Figure 1, Figure 2, Figure 3, etc. and Table 1, Table 2, Table 3, etc. Fonts used in figures should be large enough to be legible.

NOMENCLATURE

Except for rare cases where no symbols and abbreviations are used, a Nomenclature should be placed after the keywords. It should contain all symbols and abbreviations used in the manuscript. Use the international system of units (SI). Avoid use of the solidus (/) but present quantities in the denominator always with negative exponents.

REFERENCES

Within the text of a manuscript, bibliographical sources should be cited by giving the last name(s) of the author(s) and the year of publication. The year should always be in parentheses, whether or not the name of the author(s) is.

The two possibilities are illustrated as follows: Albert (1957) showed that the blend was azeotropic.

or: It was shown that the blend was azeotropic (Albert, 1957). When there are two authors, the names of both should be cited, e.g.:

Albert and Klaus (1981) observed that the blend was azeotropic. or: It was observed recently that the blend
was azeotrope (Albert and Klaus, 1981).

When there are three or more authors, only the lead author of the source should be cited. The names of the other authors should be designated by et al. in italics, e.g.:

Lee et al. (1982) developed a new blend. or: A new blend was developed (Lee et al., 1982).

When the same author and the same year of publication are cited from more than one source, the sources should be distinguished in the text by adding the lower-case letter "a" to the year of publication of the first source cited, "b" for the second source, and so on, as shown hereafter:

Klaus (1980a) discovered... and further on in the text: Klaus also pointed out (1980b) that...

The sources cited in the text should be listed in order at the end of the manuscript.

Sources should be in alphabetical order of the author's name or of the lead author if there are several authors. The sources should be presented as follows:

1 - Article from a periodical

Name(s) of the author(s), first name initial(s), year of publication. Title of article, title of periodical and abbreviated according to international standards. Volume number, issue number (between brackets), first and last page.


2 - Paper published in conference proceedings

Name(s) of the author(s), first name initial(s), year of publication. Title of article. Title of the conference, publisher of proceedings: first and last page.


3 - Book

Name(s) of the author(s), first name initial(s), year of publication. Title of the book. Name of publisher, place of publication, number of pages. Establishments can be considered authors when they assume main responsibility for the text and their publications reflect their collective reflections or activities.


4 - Book chapter

Name(s) of the author(s), first name initial(s), year of publication. Title of chapter. In: name(s) and initial(s) of the co-ordinator(s), title of the book, name of publisher, place of publication, first and last page.


The following example of the conference paper is provided as an additional guidance for formatting the Work Summary.
A MODEL FOR MANUSCRIPT SUBMITTED TO THE NTH IIR CONFERENCE ON …

Anton Smith(a), Bernard Jones(b)

(a) Organization 1
City, Zip code, Country, e-mail

(b) Organization 2,
City, Zip code, Country, e-mail

ABSTRACT

This example paper describes the format for papers submitted to the n th IIR Conference on …. The abstract should be no longer than 150 words. It should state clearly the objective of the work, give a concise and factual description of the contents, and present the important conclusions.

Keywords: Refrigeration, Carbon Dioxide, Compressors, COP, Evaporators, Energy Efficiency

1. INTRODUCTION

The introduction should give a statement of the problem and an outline of the paper. The production of a proceedings volume on digital form for a conference such as this IIR Conference in a short period of time presents a significant challenge to the organizers. This example paper will describe the format to be followed. We will prepare the digital proceedings directly from the file that you submit, thus strict adherence to these guidelines by all authors will be greatly appreciated. The format of this model paper can be used as an example and reference.

2. MAIN SECTION

The main body of the paper will consist of one or more main sections describing experimental designs, test procedures, theoretical consideration, and results. Sections with appropriate subtitles should describe the test equipment, measurements, observations, and mathematics needed to perform the experiments. Case histories, systems descriptions or applications should contain original aspects, out-of-standard performances or noteworthy details that should be clearly identified and described. Discussion of the results, qualifications, limits to the accuracy of tests, and calculations should also be included in this part.

2.1 General Format and Page Limit

Please adhere to the following order: Title, Author(s) information, Abstract, Introduction, Main Text (one or more sections and subsections, as appropriate), Conclusions (as appropriate), Acknowledgements, Nomenclature, References, Appendix(es). Papers should be prepared on your word processor. The text is to be single-spaced with one blank line before each new paragraph and two blank lines before each main section heading. A proportional font, such as Times or Times New Roman should be used. (This paper is prepared in Times New Roman.) Use full justification for all text.

The entire manuscript (i.e. including abstract, text, figures, tables, and references) must be eight or fewer pages. Any manuscript having excess pages will not be published.

The paper number should be placed on the right side of the header on every page, as shown above (NN-100, with 100 to be replaced by your paper number). The footer should contain the conference information and page number, as shown below. Please refer to the “Guidelines for Authors” document posted on the Conference website for further information.

2.2 Margins

The text area is to be 17.0 cm wide by 25.2 cm high. Table 1 presents the margin settings for A4 size paper. It is important to adhere to these margins to ensure that your manuscript prints properly on the paper format from the Conference Proceedings.

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<td>2.50 cm</td>
<td>2.00 cm</td>
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Table 1. Page margins for manuscripts submitted to the Nth IIR Conference
2.3 References
Bibliographical sources should be cited by giving the last name(s) of the author(s) and the year of publication. The year should always be in parentheses, whether or not the name of the author(s) is. The citations for Herbe and Lundqvist (1997) and Pearson (1996) provide examples for the format for a journal article and conference proceeding, respectively. In the case of a source with three or more authors (e.g. Hirschfelder et al., 1967), which also provides an example citation for a book, only the name of the first author is cited in the text, but all authors are listed in the entry in the References section. The References section should be alphabetized by the last name of the first author.

2.4 Tables and Figures
Each table should be numbered (Table 1, Table 2, etc.), with the caption being placed above the table. Each figure should be numbered (Figure 1, Figure 2, etc.), with the caption being placed below the figure. In the text, figures and tables should be referred to as follows: “Fig. 1 shows the relationship …” or “the measured values are given in Table 1.” Figures and tables should be inserted into the text soon after they are first referenced (as illustrated by Table 1).

2.5 Equations and Symbols
Use the “Equation Editor” whenever possible. Equations should be centered, with the equation number flush with the right margin. If you are using the “IIR_equation” style, this is accomplished by inserting tab characters before the equation and before the equation number. Equations should be cited in the text with its number, for example, “…as shown in Eq. (1)”. Equations should be separated from the text above and below by a blank line.

Symbols used in equations should be explained directly within the paragraph they first appear or in a nomenclature section at the end of the manuscript. Symbols for physical quantities should be italicized. Exceptions are symbols for established dimensionless groups (e.g. Reynolds Number Re), which should not be italicized. An example equation would be the ideal gas law

\[ pV = RT \] (1)

where \( p \) is pressure in kPa, \( T \) is temperature in K, \( V \) is molar volume in mol\cdotL\(^{-1}\), and \( R \) is the gas constant. If few equations are used, the definition of symbols may follow each equation. Otherwise the manuscript shall include a Nomenclature where all symbols and abbreviations are explained. Use the international system of units (SI). Avoid use of the solidus (/) but present quantities in the denominator always with negative exponents.

A separate nomenclature section should be used when equations are used extensively. The units used should be given, if appropriate. For the Nomenclature section only, a two-column format may be used, if desired, to save space.

2.6 Use of “Styles” in Word
The conference organizers are encouraged to prepare a template of a manuscript with the ‘styles’ features in Microsoft Word. The following explanation may be provided to explain the use of the template. We have prepared this manuscript using the “styles” feature in Microsoft Word. Styles are a very powerful tool that can greatly simplify the formatting of a manuscript, but we find that many authors are unfamiliar with their use. The basic idea is to define a “style” for each element in the paper—title, author list, section headings, text paragraphs, equations, references, etc. When preparing the manuscript the author simply types (or pastes in from other sources) the appropriate words. Then, at the end, the vast majority of the formatting effort is accomplished by simply applying the appropriate “style” to the various elements. Alternately, the author can open this document in Word and replace the elements of this paper with his or her own material. For example, place your cursor over our names in the author list and type your name(s).

The appearance and location of the “Styles Formatting Palette” or “Styles Window” will vary depending on the version of Word that you are using. You may also need to “Show the Styles Window” and select “Show styles in use.” All of the styles defined in this paper start with “IIR_” followed by a descriptive word or two, such as “IIR_TITLE.” A number of other standard styles, defined by Word itself, may also appear. Refer to the topic “About formatting text by using styles” under the Help menu for more information on using styles.

3. CONCLUSIONS
The Conclusions section should list the major conclusions of the work and summarize the significance of the paper as clearly and concisely as possible.

ACKNOWLEDGEMENTS
A short section may acknowledge special assistance, such as financial aid, help of guiding technical committees, individuals, or other groups.

**NOMENCLATURE**

- \( p \) pressure (kPa)
- \( T \) temperature (K)
- \( R \) molar gas constant (8.314 472 J·mol\(^{-1}\)·K\(^{-1}\))
- \( V \) molar volume (mol·L\(^{-1}\))

**REFERENCES**


