

**FIV2024-XXXX (paper number)**  
**INSTRUCTIONS FOR FORMATTING PROCEEDINGS PAPERS OF THE**  
**FIV2024 (TIMES NEW ROMAN, CENTERED, BOLD, SIZE 14)**  
**(SINGLE BLANK LINE SIZE 14)**

**First Author's Name** (Times New Roman, Bold, size 10)

**Second Author's Name** (Times New Roman, Bold, size 10)

Institution and address for first and second authors - if the same (Times New Roman, size 9)

e-mails (Times New Roman, size 9)

(single space line, size 10)

**Third Author's Name** (Times New Roman, Bold, size 10)

Institution and address for third author (Times New Roman, size 9)

e-mail (Times New Roman, size 9)

(single space line, size 10)

**Same format for other authors, if any**

(single space line, size 10)

**Abstract.** *The abstract should describe the objectives, context, and significance of the research, methods, results, and main conclusions of the paper in about 200 words. It should not include formulas or references to a bibliography. It must be written in only one paragraph. (Times New Roman, italic, size 10)*

(single space line, size 10)

**Keywords:** *keyword 1, keyword 2, keyword 3 .... (up to 5 keywords separated by commas) (Times New Roman, italic, size 10)*

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**1. INTRODUCTION (TIMES NEW ROMAN, BOLD, SIZE 10)**

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These instructions are intended to serve as a guide for the formatting of papers to be published in the Proceedings. The proceedings will be published in PDF format.

Papers **MUST** be formatted according to these instructions. This file can be used as a template for Microsoft Word™. It can also be used as a formatting guide for users of other word-processing programs.

Submissions are limited to a maximum of 10 pages, including tables and figures.

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**2. TEXT FORMAT**

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Manuscripts should be in English, typewritten on A4 pages in Times New Roman font, size 10, except for the title, author affiliation, abstract, and keywords, for which special formatting instructions are given above. Use single space between lines throughout the text.

The block of text containing the title, author names and affiliations, abstract, and keywords must be indented 0.1 cm from the left margin and marked by a 2 ¼ pt wide black line on the far left.

Pages must have a top margin of 3 cm and all other margins (left, right and bottom) must have 2 cm. The text must be justified. The first line of each paragraph must be indented by 0.5 cm. Sufficient information must be given directly in the text or by reference to available published work. Footnotes should be avoided. **PAGES SHOULD NOT BE NUMBERED.**

All symbols and notations must be defined in the text. Physical quantities must be expressed in the SI (metric) units. Mathematical symbols that appear in the text must be written in italics. Units should not be italicized (e.g., kg, m, MJ, kW/m<sup>2</sup>, instead of *kg, m, MJ, kW/m<sup>2</sup>*).

Bibliographic references should be cited in the text using the last name of the author(s) and the year of publication, according to the following examples: "Recent work (Simas and Di Gregorio, 2019), ..." or "Recently, Simas and Di Gregorio (2019), ...". In the case of three or more authors, the form "(Caraguay et al., 2022)" should be used. Two or more references with the same authors and the same publication year must be distinguished by appending "a", "b", etc. to the publication year. For example, "In the papers of Santos et al. (2013a) and Santos et al. (2013b), ...".

Acceptable references are journal articles (Caraguay et al., 2022), articles published in conference proceedings (Santos et al., 2013a, 2013b), (Nostrani et al., 2019), conference proceedings (Carvalho et al., 2018), books (Mendonça and Fancello, 2019), master's theses (Spillere, 2022) and doctoral theses or dissertations (Santos, 2020), patents (Binder et al., 2016), (Fernandes et al., 2018), reports if publicly available (EPE, 2022), websites and specific pages in websites (MLA, 2020), and submitted articles (if the journal is indicated).

References should be listed at the end of the manuscript according to the instructions in Section 4.

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## 2.1 Section titles and subtitles

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Section headings and subheadings must be left-aligned and bolded in Times New Roman, size 10. They must be numbered with Arabic numerals separated by periods. No more than 3 subheadings should be used.

There must be a single line of size 10 above and below each section title/subtitle.

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## 2.2 Mathematical equations

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Mathematical equations must be indented 0.5 cm from the left margin. They must be written in Times New Roman (or Cambria Math), italics, font size 10 pt. Arabic numerals must be used as equation numbers, enclosed in parentheses and right justified, as shown in the example below. Equations should be designated as either "Eq. (1)" in the middle of a sentence or "Equation (1)" at the beginning of a sentence. Matrix and vector quantities can be indicated either by square and curly brackets, as in Eq. (1), or by boldface, as in Eq. (2). A blank line must be inserted above and below each equation. The symbols used in the equations must be defined immediately before or after their first occurrence.

"The equation of the dynamical system is written in one of the two forms,

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$$[M]\{\ddot{x}(t)\} + [C]\{\dot{x}(t)\} + [K]\{x(t)\} = \{f(t)\}, \quad (1)$$

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or,

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$$\mathbf{M}\ddot{\mathbf{x}}(t) + \mathbf{C}\dot{\mathbf{x}}(t) + \mathbf{K}\mathbf{x}(t) = \mathbf{f}(t), \quad (2)$$

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where  $[M]$  or  $\mathbf{M}$ ,  $[C]$  or  $\mathbf{C}$ , and  $[K]$  or  $\mathbf{K}$  are the mass, dissipation, and stiffness matrices, respectively, and  $\{\ddot{x}\}$  or  $\ddot{\mathbf{x}}$ ,  $\{\dot{x}\}$  or  $\dot{\mathbf{x}}$ ,  $\{x\}$  or  $\mathbf{x}$ , and  $\{f\}$  or  $\mathbf{f}$  are the acceleration, velocity, displacement and input force vectors, respectively."

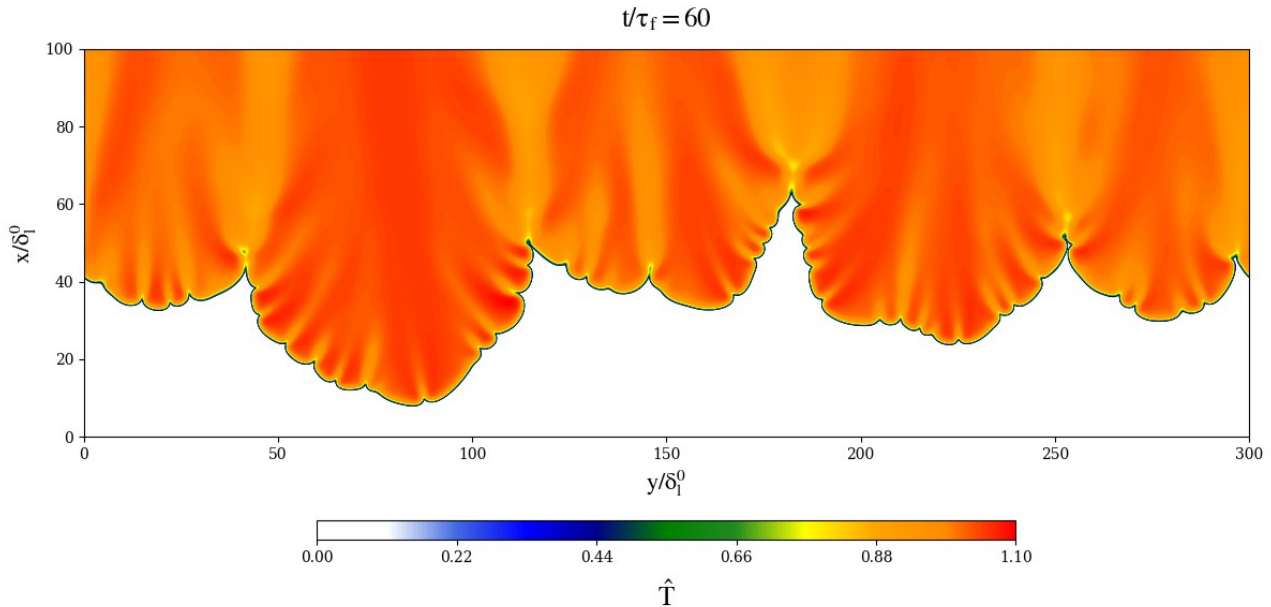
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## 2.3 Figures and tables

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Figures and tables should be placed as close as possible to the place in the text where they are first mentioned and must be numbered consecutively in Arabic numerals. Figures must be mentioned either as "Figure 1" in the middle of a sentence or as "Figure 1" at the beginning of a sentence.

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Figure 1. Schematic diagram of the control strategy.

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Both the figures and their captions must be centered in width. Figure captions should be no longer than 3 lines, centered, and in Times New Roman size 10.

A blank line must be inserted before and after each figure.

The legend for the data symbols and the labels for each curve should be included in the figure. The labels should be large enough to be easily read. All units must be in the S.I. (metric) system.

Color figures and high-quality photographs may be included in the manuscript. To reduce file size and maintain graphic resolution, figures must be saved in GIF (figures with less than 16 colors) or JPEG (for higher color density) before inclusion in the manuscript.

Tables must be designated as either "Table 1" in the middle of a sentence or "Table 1" at the beginning of a sentence. Both the tables themselves and their titles must be centered in width. Table titles should be no longer than 3 lines. The font and size used in the tables must be similar to that used in the body of the text (both in size and style). Units must be given in the S.I. (metric) system. Any explanations should be at the foot of the tables, not in the tables themselves.

A blank line must be inserted before and after each table.

The design of the table margins is up to you. An example can be found in Table 1.

In this template, cross- references are used for equations, figures and tables. The corresponding labels are equation, figure, and table, respectively.

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Table 1. Experimental results for flexural properties of CFRC-TWILL and CFRC-4HS composites.  
Span/depth ratio = 35:1. Average results of 7 specimens.

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Composite Properties	CFRC-TWILL	CFRC-4HS
Flexural Strength, MPa <sup>(1)</sup>	209 ± 10	180 ± 15
Flexural Modulus, GPa <sup>(1)</sup>	57.0 ± 2.8	18.0 ± 1.3
Mid-span deflection at the failure stress, mm	2.15 ± 1.90	6.40 ± 0.25

<sup>(1)</sup> measured at 25°C

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## ACKNOWLEDGEMENTS

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This optional section must be placed before the list of references. Authorship should be limited to those who made a significant contribution to the conception, design, execution, or interpretation of the reported study. If other individuals were involved in specific substantive aspects of the research project, they should be identified in this section. In addition, all sources of financial support for the project should be disclosed, as well as any potential situations that could be perceived as a conflict of interest.

The following text is an example:

We thank Prof. H. Simas for providing the lab floor and equipment used to make the prototype, and Dr. T. Hoeltgebaum of LAR - Prof. Raul Guenther Robotics Laboratory - UFSC for providing the raw data for their prototype. This work was funded by FAPESC under grant number xxxxxx/xxxx. The locomotion devices of the robot were kindly provided by TIF Robotics Ltd.

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## REFERENCES

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The list of references must be inserted as a new section at the end of the manuscript. The first line of each reference must be left-justified. All other lines must be indented 0.5 cm from the left margin. All references listed in the reference list must have been mentioned in the text.

References must be listed in alphabetical order by the last name of the first author. See the following examples:

- Binder, R., Klein, A.N., Binder, C., Hammes, G., Parucker, M.L. and Ristow Junior, W., 2016. "Metallurgical composition of particulate materials, self-lubricating sintered products and process for obtaining self-lubricating sintered products". Patent, United States Patent and Trademark Office, Registry number: US-9243313-B2, Application date: 09 September 2009, Publication date: 06 December 2016.
- Caraguay, S. J., Pereira, T. S., Giacomelli, R. O., Cunha, A., Pereira, M., Xavier, F. A., 2022, The effect of laser surface textures on the corrosion resistance of epoxy coated steel exposed to aggressive environments for offshore applications, *Surface and Coatings Technology*, Vol. 437, pp. 128371.
- Carvalho, J.C.M., Martins, D., Simoni, R., and Simas, H., 2018. *Multibody Mechatronic Systems - Proceedings of the MUSME Conference held in Florianópolis, Brazil, October 24-28, 2017*. Mechanisms and Machine Science. Springer International Publishing.
- EPE, 2022, *National Energy Balance 2022, Final Report* (in Portuguese), Empresa de Pesquisa Energética EPE, Rio de Janeiro, e.gov.br/sites-pt/publicacoes-dados-abertos/publicacoes/PublicacoesArquivos/publicação-675/topico-638/BEN2022.pdf. Accessed 02 May 2023.
- Fernandes, R.B., Teixeira, J.S.V., Boeing, F., Pedro Filho, A., Berramashi, E.A., Tounier, M.B., Silva, M.B., and Caminha Junior, L., 2018. "System for monitoring controlled areas in work environments (in Portuguese)". Patent, INPI - Instituto Nacional da Propriedade Industrial, Brazil, Utility Model, Registry number: BR10201806780403, Deposit: September 04, 2018.

- Mendonça, P.T.R. and Fancello, E.A., 2019. *The method of finite elements applied to mechanics of solids (in Portuguese)*. Editora Orsa Maggiore, Florianópolis.
- MLA, 2020. *MLA works cited: Electronic sources (web publications)*. Modern Language Association, Purdue Online Writing Laboratory, Purdue University, [https://owl.purdue.edu/owl/research\\_and\\_citation/mla\\_style/mla\\_formatting\\_and\\_style\\_guide/mla\\_works\\_cited\\_electronic\\_sources.html](https://owl.purdue.edu/owl/research_and_citation/mla_style/mla_formatting_and_style_guide/mla_works_cited_electronic_sources.html). Accessed 12 January 2021.
- Nostrani, M.P., Kruss, P., De Negri, V.J. and Dell'Amico, A., 2019. "An aircraft actuator driven by digital hydraulic pumps". In *Proceedings of the XVIII International Symposium on Dynamic Problems of Mechanics - DINAME 2019*. ABCM - Brazilian Society of Mechanical Sciences and Engineering, Armação de Búzios, RJ, Brazil.
- Santos, D.D., Furtado, G.M., Frey, S.L., Naccache, M.F., and de Souza Mendes, P.R., 2013a. "Flow of elasto-viscoplastic fluids inside a cavity". In *Proceedings of the 22nd International Congress of Mechanical Engineering - COBEM 2013*. Ribeirão Preto, Brazil.
- Santos, D.D., Furtado, G.M., Frey, S.L., Naccache, M.F., and de Souza Mendes, P.R., 2013b. "Numerical investigation of elastic and viscous effects on inertial viscoplastic fluid flows". In *Proceedings of the 22nd International Congress of Mechanical Engineering - COBEM 2013*. Ribeirão Preto, Brazil.
- Santos, V.O., 2020. *Experimental and numerical analysis of the fretting corrosion mechanism at the stem-head and stem-cement contact surfaces of hip prostheses (in Portuguese)*. Master's thesis, Graduate Program in Mechanical Engineering, Federal University of Santa Catarina, Florianópolis, Brasil.
- Simas, H. and Di Gregorio, R., 2019. "A technique based on adaptive extended jacobians for improving the robustness of the inverse numerical kinematics of redundant robots". *Journal of Mechanisms and Robotics*, Vol. 11, p. 020913.
- Spillere, A.M.N., 2022. *Boundary layer effects on acoustic liners for turbofan engines: from experimental methods to optimization techniques*. Ph.D. thesis, Graduate Program in Mechanical Engineering, Federal University of Santa Catarina, Florianópolis, Brasil.