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Title Calibri Size 12 Bold

(Engineering Analysis / Design / Optimization + Technical Object + Operational Context)

Author 1[1*], Author 2[2]
[1]Department, Faculty, University/Affiliation, City, Country
[2]Department, Faculty, University/Affiliation, City, Country

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Abstract: An abstract is a concise and self-contained summary of an engineering research article, thesis, review paper, or technical report, intended to provide readers with a rapid understanding of the study's **technical purpose, methodology, key findings, and originality**. The abstract appears at the beginning of the manuscript and serves as the primary point of entry for readers, reviewers, and abstracting/indexing services. In engineering journals, the abstract must focus on technical and measurable aspects of the study. It should clearly describe the engineering problem, the methods employed (experimental, numerical, analytical, or hybrid), the main results expressed in **performance-based or quantitative terms, and the novel technical contribution** of the work. Abstracting and indexing services rely heavily on abstracts to accurately categorize engineering literature; therefore, clarity, precision, and technical relevance are essential. The abstract length may vary depending on publisher requirements but is generally limited to **150–250 words**. The abstract must be written as a single paragraph, without citations, equations, figures, tables, or non-technical narratives.

Keywords: [keyword 1]; [keyword 2]; [keyword 3]; [keyword 4]; [keyword 5] (minimum 5 keywords, listed in alphabetical order)..

INTRODUCTION

Field Facts / Technical Facts (Engineering Problem Identification)

This paragraph describes **real engineering conditions observed in practice**. Authors should explain the actual performance limitations, inefficiencies, failures, or uncertainties encountered in the operation, design, or application of a specific system, device, or material. The discussion must focus on **measurable technical phenomena**, supported by field measurements, experimental observations, preliminary tests, engineering standards, or operational reports.

Literature Review Facts (State of the Art and Research Gap)

This paragraph reviews relevant engineering studies by **grouping previous works into at least three technical approaches**, such as experimental investigations, numerical/simulation-based studies, and optimization or data-driven methods. Each group should be briefly summarized, followed by a clear identification of **technical limitations**

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or unresolved parameters. The paragraph must explicitly state the **engineering research gap** addressed by this study.

Research Objectives (Purely Technical Objectives)

This paragraph states the **technical objectives of the study**, formulated in an operational and measurable manner. Objectives must directly address the identified research gap and focus on engineering outcomes. Acceptable objectives include:

1. analyzing system response under defined boundary conditions;
2. evaluating the influence of specific geometric, material, or operational parameters;
3. developing or improving an engineering model or design;
4. optimizing performance metrics such as efficiency, stress, flow uniformity, accuracy, or durability;
5. validating experimental or numerical results.

Technical Contribution / Engineering Hypothesis

This paragraph explains the **technical novelty and expected contribution** of the research. If hypotheses are used, they must be expressed as **engineering performance assumptions**, such as anticipated improvements in efficiency, accuracy, stability, or reliability compared to conventional approaches. The contribution should be positioned within the advancement of engineering knowledge and practice.

RESEARCH METHOD

Unit of Analysis

Specify the engineering object under investigation, such as a device, system, component, material specimen, flow domain, or structural model.

Research Design

Explain the selected engineering research design (experimental, numerical, analytical, or hybrid) and justify its suitability for addressing the technical objectives.

Data Sources

Describe data sources, including experimental measurements, sensor data, simulation outputs, or validated secondary technical data.

Data Collection Techniques

Explain how data are obtained, including test rigs, instrumentation, sensors, simulation setups, boundary conditions, and calibration procedures.

Data Analysis Techniques

Describe the engineering analysis methods used, such as statistical evaluation, performance metrics, numerical solvers, error analysis, or validation procedures.

The stages involved in research, concept development, or case resolution are written in the methodology section. Mathematical equations must be numbered sequentially and starting with (1) until the end of the paper including the appendix (attachment). This numbering must begin and end with an opening bracket and a closing bracket and be written to the right. Add one blank line above and below the equation (Macks, 2000).

$$\rho = \frac{\vec{E}}{J_C\left(T = \text{const.}\right) \cdot \left(P \cdot \left(\frac{\vec{E}}{E_C} \right)^m + \left(1 - P\right) \right)} \tag{1}$$

The nomenclature of mathematical equations is written in a separate section after the Bibliography.

RESULT AND DISCUSSION

Result 1 / Evidence 1

Data. Present the first set of engineering data related to the defined objectives.

Visualization. Provide tables, graphs, schematics, or contour plots.

Restatement. Summarize the data in a clear technical description.

Description. Identify 3–4 dominant patterns or trends.

Interpretation. Explain the engineering significance of the results.

Result 2 / Evidence 2

(Use the same structure as Result 1)

Result 3 / Evidence 3

(Use the same structure as Result 1)

Table

Each table must be given a caption under the table. Information on the table is given above the table. Information is written in lower case except for the first character in each sentence. All images must be numbered sequentially. Figures are placed in the middle of the page (center aligned), while tables begin at the left edge (left aligned) of the page.

Tabel 1. Table Title [citation *APA Style*]

Get and Place:			
weight	conditions	Place accuracy	Code
<= 1 kg	easy	approx.	AA
		Loose	AB
		Tight	AC
	difficult	approx.	AD
		Loose	AE
		Tight	AF
	handful	approx.	AG
> 1kg <= 8kg		approx.	AH
		Loose	AJ
		Tight	AK
> 8 kg <= 20kg		approx.	AL
		Loose	AM
		Tight	AN
Handel tool: Get, Place and Place a side		Approx.	HA
		Loose	HB
		Tight	HC

An example of making a table can be seen in Table 1 and Table 2. If the contents of the table come from a particular source, write down the reference with the number (Chen, 1993).

Tabel 2. Title Table (Chen, 1993).

Title Column	**Column A (*t*)**	**Column B (*t*)**
First line	1	2
Second Line	3	4
Net line	5	6

Figure

The way of presenting images can be seen in Figure 1. If the image is a secondary source, it is necessary to state the source. Image captions are placed at the bottom of the image. Pictures don't need to be framed

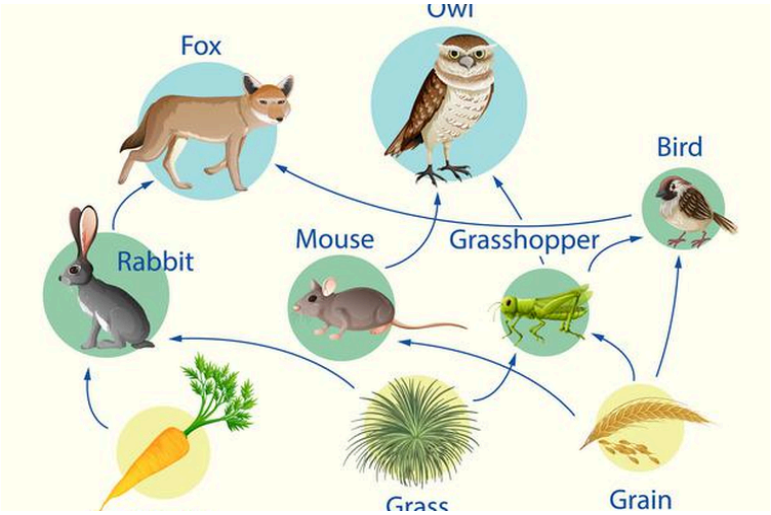


Figure 1. Title Figure (Chen, 1993).

Sub Heading 1

Sub Heading 2

DISCUSSION

Summary of Results

Summarize the key engineering findings without repeating numerical details.

Technical Explanation

Explain the physical, mechanical, thermal, or fluid-dynamic mechanisms responsible for the observed results.

Comparison with Previous Studies

Compare the findings with existing engineering literature to highlight improvements, differences, and novelty.

Engineering Interpretation

Discuss the implications of the results for system design, performance optimization, and operational reliability.

Practical Implications and Engineering Actions

Explain how the results can inform design improvements, engineering decisions, or technical standards.

CONCLUSION

The Conclusion section summarizes the most important findings of the study as the key lessons derived from the overall research process and results. These main findings represent the most significant outcomes that address the research objectives and provide both practical and academic value to readers.

Furthermore, this section highlights the scientific contributions of the study to the advancement of engineering knowledge. These contributions may include the provision of new empirical data, the identification or validation of critical variables, the development of concepts or analytical approaches, and implications for engineering methods, design practices, or decision-making processes. In this way, the study not only reports results but also demonstrates its added value to the body of knowledge and engineering applications.

Finally, the Conclusion acknowledges the technical and methodological limitations that influenced the scope of the findings. These limitations are briefly outlined to clarify aspects that could not be fully addressed within this study, and to provide recommendations for future research that may explore broader conditions, deeper analyses, or more comprehensive approaches to further advance the field.

DECLARATIONS

Artificial Intelligence (AI) Use Statement

Option A – No AI Tools Used

The authors declare that no generative artificial intelligence (AI) tools were used in the preparation, writing, analysis, interpretation, or revision of this manuscript.

Option B – AI-Assisted Language Editing

The authors acknowledge the use of [Name of AI Tool, Version/Provider] solely for language refinement, grammar checking, spelling correction, and stylistic editing of the manuscript. The AI tool was not used to generate or fabricate research data, perform

statistical analyses, interpret research findings, or independently formulate scientific conclusions. All AI-assisted revisions were critically reviewed and verified by the authors, who retain full responsibility for the accuracy, originality, integrity, and final content of the manuscript.

Option C – Generative AI Used in Manuscript Preparation

The authors acknowledge the use of [Name of AI Tool, Version/Provider] for [Clearly Describe the Purpose and Scope of AI Use] during the preparation of this manuscript. All AI-generated or AI-assisted content was critically evaluated, independently verified, and revised where necessary by the authors. The authors take full responsibility for the accuracy, scientific validity, originality, ethical compliance, and final content of the manuscript.

Author Contributions Statement

[Author 1 Full Name]: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Writing – original draft.

[Author 2 Full Name]: Conceptualization, Methodology, Validation, Supervision, Writing – review & editing.

[Author 3 Full Name]: Validation, Visualization, Supervision, Writing – review & editing.

All authors have read and approved the final version of the manuscript and agree to be accountable for their respective contributions and the integrity of the published work.

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Conflict of Interest Statement

Option A – No Conflict of Interest

The authors declare that they have no financial, professional, institutional, or personal conflicts of interest that could have influenced the design, conduct, analysis, interpretation, or reporting of this study.

Option B – Potential Conflict of Interest Disclosed

The authors disclose the following potential conflicts of interest: [Describe the Nature of the Conflict, Relevant Relationships, and Involved Parties]. These circumstances have been transparently disclosed to ensure the integrity and objectivity of the research.

REFERENCES

All references must be written following APA Style (7th Edition). Authors are strongly encouraged to use Mendeley Desktop or other citation management software to ensure consistency and accuracy.

- Reference Requirements
- A minimum of 15 references is required.
- References must be peer-reviewed journal articles, conference proceedings, books, or authoritative technical standards.
- At least 80% of the references must be published within the last five (5) years.
- Each reference must include an active DOI whenever available.
- References without DOI should be minimized and are only acceptable for standards, books, or official technical reports.

Books:

Chen, W. K. (1993). *Linear networks and systems*. Belmont, CA: Wadsworth.Book

Chapter / Article in Edited Book:

Bourne, J. E. (1964). Synthetic structure of industrial plastics. In J. Peters (Ed.), *Plastics* (2nd ed., Vol. 3, pp. 15–67). New York: McGraw-Hill.

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Goldenstein, C. S., Spearrin, R. M., Jeffries, J. B., & Hanson, R. K. (2017). Infrared laser-absorption sensing for combustion gases. *Progress in Energy and Combustion Science, 60*, 132–176. https://doi.org/10.1016/j.pecs.2016.12.002

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Payne, D. B., & Gunhold, H. G. (1986). Digital sundials and broadband technology. In *Proceedings of IOOC-ECOC* (pp. 557–998).

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British Standards Institution. (1990). *B.S. 764*. London: British Standards Institution.

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Rebecca, E. E. (1987, November 3). Alternating current fed power supply. *U.S. Patent* No. 7,897,777.

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Afrinaldi, F. (2005). *Rangka belt conveyor* [Gambar teknik]. Universitas Andalas, Padang.

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Calmer, S. (1999, June 1). *Engineering and art* (2nd ed.). [Online]. *27*(3). Available: www.enggart.com/examples/students.html [Accessed May 21, 2003].

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Duncan, M. (2000, October 25). Engineering concepts on ice. *Internet*: http://www.iceengg.edu/staff.html [Accessed November 29, 2003].

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Bart, B. (2002, October 14). Going faster. *Globe and Mail*, sec. A, p. 1.

Telehealth in Alberta. (2003, November 12). *Toronto Star*, sec. G, pp. 1–3.

Thesis/Dissertation:

Mack, S. (2000). *Desperate optimism* (Master's thesis, University of Calgary, Canada).

NOMENCLATURE

The nomenclature, accompanied by the meaning of all mathematical equations or other nomenclature in the Articles, is written in this section.

E The meaning for variable E

J_c The meaning for variable J_c