CALL FOR PAPERS

The Institution of Engineers (India)

In service of the Nation since 1920

37th Indian Engineering Congress

December 16-18, 2022, Chennai

Hosted by Tamilnadu State Centre

Theme

Role of Engineers for Creating A Sustainable & Self Reliant India

Technical Partner

Anna University, Chennai

Venue:

Hotel Le Royal Meridian, Chennai

About The Institution of Engineers (India)

The Institution of Engineers (India) or IEI is the largest multidisciplinary professional body in India that encompasses 15 engineering disciplines and provides engineers a global platform for sharing professional interests. IEI has a membership strength of over 9 lakhs. Established in 1920, with its headquarters at Kolkata, IEI has rendered over a century of service to the engineering fraternity and the nation. In this period of time it has been inextricably linked with the history of modern-day engineering. In 1935, IEI was incorporated by Royal Charter and remains the only professional body in India to be accorded this honour. Today, its quest for professional excellence has given it a place of pride in almost every prestigious organization across the globe. IEI functions among professional engineers, academicians and research workers. It provides a vast array of technical, professional and supporting services to the Government, Industries, Academia and the Engineering fraternity, operating from 125 State/Local Centres, seven Foras located across the country and an organ viz Engineering Staff College of India (ESCI), Hyderabad and six Overseas Chapters. IEI has been recognized as Scientific and Industrial Research Organization (SIRO) by the Ministry of Science & Technology, Govt. of India and provides Grant-in-Aid to UG/PG/PhD students of Engineering Institutes & Universities to conduct research and development on engineering subjects. IEI holds the International Professional Engineers (IntPE) Register for India under the global International Professional Engineers Alliance. The Institution also awards the Professional Engineers (PE) Certification.

In order to create sharp focus on National priority areas, The Institution of Engineers (India) has established the following Organ and Fora to work in close co-operation with the stake holders in the respective fields.

- Engineering Staff College of India (ESCI), Hyderabad for providing continuing education and Research & Development, is an autonomous Organ of IEI
- National Design and Research Forum (NDRF), Bangalore to encourage design talents in engineering and technology
- National Skill Development Forum (NSDF), Shimla to enhance skill of engineering and technical personnel
- Rural Development Forum (RDF), Kolkata to encourage and promote multifaceted development of rural India
- Safety and Quality Forum (SQF), New Delhi to address the aspects of Safety and Quality in Engineering Profession
- Sustainable Development Forum (SDF), Patna for expression of authoritative views on technologies for sustainable development and for enunciating practical solutions to the problems faced by India
- Water Management Forum (WMF), Ahmedabad to promote and advance the engineering and practice of water resources management in its totality.
- Disaster Awareness and Management Forum, The Disaster Awareness and Management cell, located at the IEI Uttarakhand State Centre, Dehradun, was operational since the calamity of Kedarnath shrine area in 2013 and has been extending technical co-operation and assistance in natural calamities e.g. landslide, cloud bursting, earthquake etc, keeping in close liaison with the Disaster Management Department, Government of Uttarakhand. The Council at its 709th meeting held on July 30-31, 2021 at Hyderabad decided to upgrade the Cell to Disaster Awareness and Management Forum (DAMF) of IEI.

IEI in collaboration with Springer regularly publishes peer-reviewed International Journal in five series, namely, Series A, Series B, Series C, Series D and Series E covering 15 engineering disciplines, which are Scopus Indexed.

For further details, please visit: www.ieindia.org

Indian Engineering Congress

The aim of the Indian Engineering Congress is to bring to fore the developments in various fields of engineering and prepare our engineers to face the future challenges for sustainable development of the country.

The objectives of the Indian Engineering Congress are:

- To debate and discuss the theme of the Congress to create awareness, promote ideas, innovations in their respective engineering disciplines.
- To provide Engineers with a forum for exchange of knowledge, updating information and developing a sense of responsibility in their professional functioning.
- To promote and inculcate social responsibilities of engineers towards fulfilling the basic needs of common citizen of our country.
- To promote the engineering practice that meets the challenges of sustainable and renewable energy demands.

Theme of the 37th Indian Engineering Congress

Role of Engineers for Creating A Sustainable & Self Reliant India

The Indian engineering community is working on the philosophy of self-reliance and self-sufficiency. With the seamless engineering and technology capabilities, tempered by congruent government policies, role of Indian engineers will be crucial towards achieving a sustainable and self-reliant India.

Sustainable Development, from engineering perspective, emphasizes on use of energy and resources in a sustainable manner. It is the path to meet the needs of today and securing the needs of tomorrow. Sustainability is of major concern

in current context as reckless pattern of production and consumption has resulted in polluted air and water quality which is detrimental to the health of the population. An overuse of resources is threatening the biodiversity, emission and global warming.

Towards this end, the sustainable engineering practices come to our rescue. To quote Benoit Cushman-Roisin, *"engineering in context, engineering with a conscience, engineering for a finite planet and the indefinite future."*

Sustainability has always been at the heart of the Indian Culture and embedded in its value system. However, with economy developing rapidly and its associated challenges of human rights and creating an equitable society to achieve the social, economic and environmental goals covered under SDGs, the scope and definition of sustainable development has widened.

Aspiring to be in the forefront of Sustainable development, various meaningful schemes with focused areas have been launched by Government of India. Swach Bharat Abhiyan-the 'Clean India Mission' is a nationwide campaign with focus on sanitation for all; Ayushmaan Bharat Yojana-'Healthy India' is a flagship scheme with a focus to achieve universal health coverage; Sashakt Bharat-an initiative for 'Empowered and Resilient India' for helping the underprivileged to have access to nutrition, child health, education, sanitation, drinking water, electricity and housing; Samagra Bharat -for an 'Inclusive and Entrepreneurial India'; Sanatan Bharat- for a 'Sustainable India' and Sampanna Bharat-the 'Prosperous and Vibrant India' for inclusive and sustainable growth. As one of the fastest growing economy India is striving to achieve a USD 5 trillion economy by 2025. To achieve the target set by the Government of India the engineers have a pivotal role to play providing the infrastructure and technological support. Engineers are the backbone for successful implementation of the all the schemes launched by the Government and should provide the thrust and motive required for accelerated growth of the economy in a sustainable environment.

Sub-Themes:

- Engineering Solutions for a Self-reliant economy
- Industry 4.0 and Sustainability
- Engineering Education for Sustainable Development
- Entrepreneurship and innovation for Aatmanirbhar Bharat
- Various Government Schemes and its relevance to SDGs

Call for Papers

Engineering professionals from Industries, Academic Institutions, Research & Development Organisations, Government Departments and Entrepreneurs are invited to contribute papers pertaining to the theme and sub-themes of the Congress under each of the following 15 engineering disciplines of IEI. The papers should focus on sharing the experience, concepts, innovative ideas, research findings etc.

Aerospace Engineering	**Agricultural Engineering**
Architectural Engineering	**Chemical Engineering**
Computer Engineering	**Civil Engineering**
Electrical Engineering	**Electronics and Telecommunication Engineering**
Environmental Engineering	**Marine Engineering**
Mechanical Engineering	**Metallurgical & Materials Engineering**
Mining Engineering	**Production Engineering**
Textile Engineering	The above areas are indicative. Authors may also submit papers on other areas based on the main theme of the 37th Indian Engineering Congress

Submission of Synopsis / Full Text

The authors are requested to submit the synopsis and full text (post-acceptance of synopsis) through e-mail to **iectech@ieindia.org**

Nodal Dates

Last date for receipt of abstract	15th October 2022
Information of provisional acceptance	31th October 2022
Last date for receipt of full length paper	10th November 2022
Communication of acceptance	16th November 2022

Guidelines for Authors

Authors intending to submit a paper for 37th Indian Engineering Congress are advised to adhere to the guidelines as mentioned below. The papers not conforming to these guidelines may not be considered for review / publication. The full text of accepted papers will be published by a reputed publisher in the **Technical Volume of the 37th Indian Engineering Congress (with ISBN).**

Preparation of Full Text of Paper

1. **Synopsis of Paper** within 500 words with maximum five key-words have to be submitted along with **Full Text**. The

author should mention the Engineering Discipline of the paper on the top right hand corner.

2. Papers should be camera-ready in MS-Word format, not exceeding 3000 words in length and should not carry more than 5 illustrations /photographs.
3. The language of the Publication is English. The mode of presentation should be in third person.
4. SI units should be used wherever possible. Other units, if used, should be given only in parentheses preceded by SI units.
5. Mathematical symbols should be typed and care should be taken to differentiate between similar characters (e.g. 1 and I), upper and lower case letters and superscripts and subscripts.
6. Lengthy mathematical proofs and derivations and extensive test data are discouraged. If absolutely essential, they should be given as an appendix.
7. The Template of Paper can be downloaded from the link :

   https://www.ieindia.org/webui/IEI-Activities.aspx#Call_Papers

   The decision will be communicated to those authors whose paper is accepted.

Copyright

The Declaration Form of IEI can be downloaded from the link:

https://www.ieindia.org/webui/IEI-Activities.aspx#Call_Papers

Submit your papers to the following email address

Director (Technical)
The Institution of Engineers (India),
8 Gokhale Road, Kolkata – 700020
Email: iectech@ieindia.org
Website: www.37iec.org

Preparation of Papers in Two-Column Format forpublications of IEI

Xxx Sharma, YyyRao and …..

Department of (Dept. name)
(college / university / organisation name)
(full address with pin code)

{Corresponding author's email: abc@....com}

Abstract - These instructions give you the basic guidelines for preparing papers for IEI Convention Proceedings. Abstract should be between 150 and 200 words. Paper should not exceed 3000 words including 5 illustrations.

Keywords - No more than 6 and separated with;.

INTRODUCTION

Your goal is to simulate the usual appearance of papers in *IEI ConventionProceedings*. For items not addressed in these instructions, please refer to the last issue of your conference's proceedings for reference or ask your conference Publications Chair for instructions.

A. Preparing Your Paper

1) Paper Size: Prepare your paper in full-size format on letter size paper (8.5 by 11 inches).

2) Type Sizes and Typefaces: Follow the font type sizes specified in Table I. The font type sizes are given in points, same as in the MS Word font size points. Times New Roman is the preferred font.

3) Paper Margins: Paper margins on the letter size paper are set as follows: top = 1 inch, bottom = 1 inch, side = 1 inch. Each column measures 3.5 inches wide, with a 0.25-inch gap between the two columns.

4) Paper Styles: Left- and right-justify the columns. On the last page of your paper, adjust the lengths of the columns so that they are equal. Use automatic hyphenation and check spelling and grammar. Use high resolution (300dpi or above) figures, plots, drawings and photos for best printing result.

TABLE I
(TITLE:….)

Sl. No.	Appearance		
	Regular	Bold	Italic
1	Title of Paper	Y	N
2	Authors' names, main text, equations,	N	N
3	Authors' affiliations	N	Y
4	Abstract, Keywords	Y	N
5	Section titles, references, tables, table names, table captions, figure captions, footnotes, text subscripts, and superscripts	N	N
6	Subtitles	N	Y

B. Preparing Your Paper for IEI

Instructions for preparing papers must be strictly followed.

HELPFUL HINTS

A. Figures and Tables

Try to position figures and tables at the tops and bottoms of columns andavoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be centered below the figures; table captions should be centered above. Avoid placing figures and tables before their first mention in the text. Use the abbreviation "Fig. #," even at the beginning of a sentence.

Figure axis labels are often a source of confusion. Use words rather than symbols. For example, as shown in Fig. 1, write "Magnetization," or "Magnetization (M)" not just "M." Put units in parentheses. Do not label axes only with units. In the example, write "Magnetization (A/m)" or "Magnetization" Do not label axes with a ratio of quantities and units. For example, write "Temperature (K)," not "Temperature/K."

Multipliers can be very confusing. Write "Magnetization (kA/m)" or "Magnetization (10^3 A/m)." Figure labels should be legible, at8-point type.

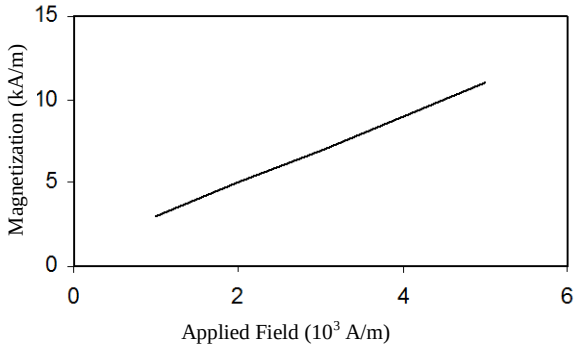

Fig. 1 Magnetization as a function of applied field.
Note how the caption is centered in the column

B. References

Number citations consecutively in square brackets [1]. Punctuation follows the bracket [2]. Refer simply to the reference number, as in [3]. Use "Ref. [3]" or "Reference [3]" at the beginning of a sentence: "Reference [3] was the first …"

Number footnotes separately in superscripts. Place the actual footnote at the bottom of the column in which it was cited. Do not put footnotes in the reference list. Use letters

for table footnotes (see Table I). *IEI* no longer use a journal prefix before the volume number.

Give all authors' names; use "et al." if there are six authors or more [4]. Papers that have not been published, even if they have been submitted for publication, should be cited as "unpublished" [4]. Papers that have been accepted for publication should be cited as "in press" [5]. In a paper title, capitalize the first word and all other words except for conjunctions, prepositions less than seven letters, and prepositional phrases.

For papers published in translated journals, first give the English citation, then the original foreign-language one [6].

C. Abbreviations and Acronyms

Define abbreviations and acronyms the first time they are used in the text, even if they have been defined in the abstract. Abbreviations such as SI, MKS, CGS, ac, dc, and rms do not have to be defined. Do not use abbreviations in the title unless they are unavoidable.

D. Equations

Number equations consecutively with equation numbers in parentheses flush with the right margin, as in (1). To make your equations more compact, you may use the solidus (/) and the exp function, etc. Italicize Roman symbols for quantities and variables, but not Greek symbols. Use an en dash (–) rather than a hyphen for a minus sign. Use parentheses to avoid ambiguities in denominators. Punctuate equations with commas or periods when they are part of a sentence, as in

$$\frac{e^{ix}}{2} = \frac{\cos x + i \sin x}{2} \Rightarrow \exp(ix)/2 = (\cos x + i \sin x)/2 \quad (1)$$

Symbols in your equation should be defined before the equation appears or immediately following. Cite equations using "(1)," not Eq. (1)" or "equation (1)," except at the beginning of a sentence: "Equation (1) is …"

E. Other Recommendations

The Roman numerals used to number the section headings are optional. Donot number ACKNOWLEDGEMENT and REFERENCES and begin Subheadings with letters. Use two spaces after periods (full stops). Hyphenate complex modifiers: "zero-field-cooled magnetization." Avoid dangling participles, such as, "Using (1), the potential was calculated." Write instead, "The potential was calculated using (1)," or "Using (1), we calculated the potential."

Use a zero before decimal points: "0.25," not ".25." Use "cm^3," not "cc." Do not mix complete spellings and abbreviations of units: "Wb/m^2" or "webers per square meter," not "webers/m^2." Spell units when they appear in text: "…a few henries," not "…a few H." If your native language is not English, try to get a native English-speaking colleague to proofread your paper. Do not add page numbers.

UNITS

Use SI as primary units. English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as "3.5-inch disk drive."

Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in an equation.

SOME COMMON MISTAKES

The word "data" is plural, not singular. In American English, periods and commas are within quotation marks, like "this period." A parenthetical statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.) A graph within a graph is an "inset," not an "insert." The word alternatively is preferred to the word "alternately" (unless you mean something that alternates). Do not use the word "essentially" to mean "approximately" or "effectively." Be aware of the different meanings of the homophones "affect" and "effect," "complement" and "compliment," "discreet" and "discrete," "principal" and "principle." Do not confuse "imply" and "infer." The prefix "non" is not a word; it should be joined to the word it modifies, usually without a hyphen. There is no period after the "et" in the Latin abbreviation "et al." The abbreviation "i.e." means "that is," and the abbreviation "e.g." means "for example." An excellent style manual for science writers is [7].

ACKNOWLEDGMENT

The preferred spelling of the word "acknowledgment" is without an "e" after the "g." Try to avoid the stilted expression, "One of us (R. B. G.) thanks …" Instead, try "R.B.G. thanks …" Put sponsor acknowledgments in the unnumbered footnote on the first page.

REFERENCES

[1] M. King, B. Zhu, and S. Tang, "Optimal path planning," *Mobile Robots*, vol. 8, no. 2, pp. 520-531, March2001.

[2] H. Simpson, *Dumb Robots*, 3rd ed., Springfield: UOS Press, 2004, pp.6-9.

[3] M. King and B. Zhu, "Gaming strategies," in Path Planning to the West, vol. II, S. Tang and M. King, Eds. Xian: Jiaoda Press, 1998, pp. 158-176.

[4] B. Simpson, et al, "Title of paper goes here if known," unpublished.

[5] J.-G. Lu, "Title of paper with only the first word capitalized," *J. Name Stand. Abbrev.*, in press.

[6] Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, "Electron spectroscopy studies on magneto-optical media and plastic substrate interface," *IEEE Translated J. Magn. Japan*, vol. 2, pp. 740-741, August 1987 [*Digest 9th Annual Conf. Magnetics Japan*, p. 301, 1982].

[7] M. Young, *The Technical Writer's Handbook*, Mill Valley, CA: University Science, 1989.

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The Institution of Engineers (India)

Rev: 12/1911

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ALL FIELDS ARE MANDATORY

This **Declaration Form must be signed by the Author(s)** of the Paper. In absence of the duly filled-in Declaration Form paper will not be taken up for publication. Any change in the mailing address after submission of this Declaration Form, should promptly be intimated to the Institution.

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2. I/We declare that I/we shall not submit the paper for publication in any other Journal or Annual Technical Volume till the decision of the Institution is made known to me/us.
3. If the paper is finally accepted by the Institution for printing in its Journal or Annual Technical Volume, I/we agree not to send the paper for publication in any other Journal or Annual Technical Volume.
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5. I/We understand that submission of false or incorrect information/undertaking would invite appropriate penal actions as per norms/rules of the Institution.
6. **I/We agree with the provision of the Bye-Law 118 of The Institution of Engineers (India) which states that copyright of each paper published in Institution Journal or Annual Technical Volume in full or in Abstract at its centres shall lie with the Institution.**

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