

Automatic Packing system for Hydrphonic substitute packaging at mass scale ¹

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Abstract – The project which is being developed is a system that eases the packing process of Coco peat blocks. The primary aspect is to develop an efficient system that is electronically controlled for packaging process of the blocks of coco peat covered with polythene or silicon materials, so that it can be delivered as final product for indoor irrigation

Index Terms -packing, coco-peat, die-cutting.

I. INTRODUCTION

The Increasing socialization, modernization needs the product packaging more robust and rapid . Packaging sits on the important position of the exchange of goods in the market has become increasingly prominent, has generally attracted the attention of people. Mechanization, the universal application of automation equipment makes more dynamic in these areas, the packaging industry is no exception. Now most of the packaging process has been converted into mechanical operations by hand i.e (human operator has to control the machine). This not only reduces the degree of labor, but also to speed up the production rate to improve productivity, which results in continuous improvement, innovation, so that the majority of consumers are generally able to accept. Which obviously promoted the marketing of products, improve the competitiveness of products in the market, but also it can bring high profits for the enterprise. Through the comprehensive evaluation and selection of many kinds of schemes which are effective.

Most of the mechanical structure and mechanism of the packaging is complex, and the action with high requirements. The food and pharmaceutical packaging machine is easy to clean with medicine and food hygiene and safety requirements. Packaging machines are generally used continuously variable speed device, in order to flexibly adjust the packaging speed, adjust the packaging machine production capacity. Packaging machinery could be a special kind of skilled machinery, a large style of production restricted. In order to facilitate the manufacture and maintenance, reduce equipment investment, in the design of packaging machine should pay attention to standardization, versatility and versatility. High automation of packaging machinery, most of the PLC, SCM control, to achieve intelligent. Packaging machinery to realize the specialization of packaging production, greatly improve the assembly potency. Packaging mechanization reduces the labour intensity, improve working conditions, protect the environment, save raw materials, and

reduce the cost of products. To ensure the health and safety of packaging merchandise, improve product packaging quality; enhance the fight of the market sales. To extend the shelf life of the product, to facilitate the circulation of products. Products victimisation the packaging machine will scale back the world of packaging sites, saving infrastructure investment. Chinese packaging industry begin to grow in the 1980s. There was a scanty few of mushroom strains packaging machine applied in China, and lower potency than developed countries because of the lower start line and smaller scale. Improving the degree of automation is the main tendency for the development of the packaging industry in the world. So the design of coco peat packing is implemented.

Packaging is necessary for commerce and virtually all goods. Industrial equipment, building materials, etc., require crating and often bundling to promote transportation. Examples abound: steel may be coated to prevent rusting; rebar's are banded together; girders are supported on wood. Taken as a whole, packaging could be the world's largest industry but it is classified as most of wood (pallets are the major use for wood), part of glass, plastic, paper, machinery, etc.

Packaging is the science, art and technology of enclosing or protecting products for distribution, storage, sell, and use. Packaging also refers to the process of designing, evaluating, and producing packages. Packaging can be described as a coordinated system of preparing goods for transport, warehousing, logistics, sale, and end use. Packaging contains, protects, preserves, transports, informs, and sells. In many countries it is fully integrated into government, business, institutional, industrial, and personal use

They hold expertise in providing a performance oriented Automatic Plastic Packing Machine, extensively used for packaging applications. Owing to its quality attributes like service efficiency and robust construction, offered packing machine is widely demanded in several industries. Moreover, provided packing machine is also available in different specifications and models to cater diverse requirement of our clients. In addition to this, our quality experts check it on various industry defined quality parameters to ensure hassle free performance. 🏠

- Features 🏠
- High strength
- Corrosion resistance
- Precisely engineered

They have marked a distinct position in the market by offering superior quality Automatic Plastic Packing Machine

that is manufactured using optimum quality components that are procured from certified vendor of the market.

Problem Statement

Design and develop a semi automatic human assisted packaging system for coco-peat blocks. Which involves cutting vent holes for ventilation inside the packing, the shape of the vent hole will be either circle or square.

1) *Paper Size*: Prepare your paper in full-size format on US 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 US letter size paper are set as follows: top = 0.75 inches, bottom = 1 inch, side = 0.625 inches. 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
Type Size for Papers

Type size (pts.)	Appearance		
	Regular	Bold	Italic
6	Table superscripts		
8	Section titles ^a , references, tables, table names ^a , table captions, figure captions, footnotes, text subscripts, and superscripts		
9		Abstract, Index Terms	
10	Authors' affiliations, main text, equations, first letter in section titles ^a		Subheading
11	Authors' names		
22	Paper title		

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II. HELPFUL HINTS

A. Figures and Tables

Try to position figures and tables at the tops and bottoms of columns and avoid 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 ($\text{A}\cdot\text{m}^{-1}$).” 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, at 8-point type.

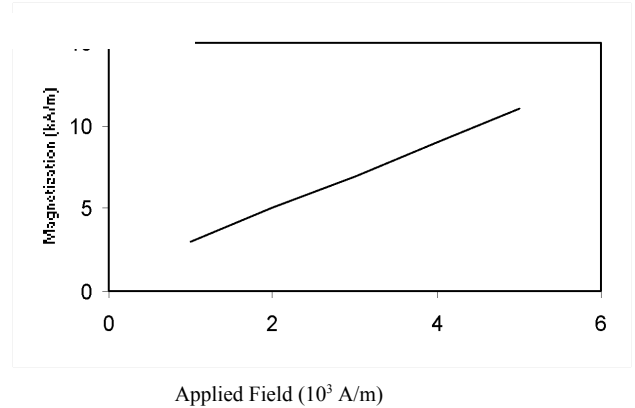


Fig. 1 Magnetization as a function of applied field.
Note how the caption is centered in the column.

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). *IEEE Transactions* no longer use a journal prefix before the volume number. For example, use “*IEEE Trans. Magn.*, vol. 25,” not “vol. MAG-25.”

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 IEEE, 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. Do not 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 “cm³,” not “cc.” Do not mix complete spellings and abbreviations of units: “Wb/m²” or “webers per square meter,” not “webers/m².” 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.

III. UNITS

Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) 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.

IV. 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” in America 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.

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