

Finete Element Analysis of ABS Submerged Pump Shaft

Mr. Syed Salman, Mr. Mahesh T.S, Mr. Prakash H R, Dr.Nandeeshaiah

Abstract— Metallic component are been used right from their origin, because of their ability in strength, durability and many other properties. Even non-metallic components have been used for more than 25 years, though they have the capacity to replace the metallic components. It has got restricted in particular fields and high budget projects, the main drawback of these non-metallic components are cost.

Index Terms—Flanges, pumps, ABS materials.

I. INTRODUCTION

Pumps can be classified into three major groups according to the method they use to move the fluid: direct lift, displacement, and gravity pumps. It can be operated by some mechanism (typically reciprocating or rotary), and consume energy to perform mechanical work by moving the fluid. Pumps operate via many energy sources, including manual operation, electricity, engines, or wind power.

Procedure for Paper Submission.

II. POSITIVE DISPLACEMENT PUMPS

Positive displacement pumps, unlike centrifugal or roto-dynamic pumps, theoretically can produce the same flow at a given speed (RPM) no matter what the discharge pressure. Thus, positive displacement pumps are constant flow machines. However, a slight increase in internal leakage as the pressure increases prevents a truly constant flow rate.

III. INTERNAL GEAR PUMP

Internal gear pumps are exceptionally versatile. While they are often used on thin liquids such as solvents and fuel oil, they excel at efficiently pumping thick liquids such as asphalt, chocolate, and adhesives. The internal gear pump is non-pulsing, self-priming, and can run dry for short periods. They're also bi-rotational, meaning that the same pump can be used to load and unload vessels. Because internal gear pumps have only two moving parts, they are reliable, simple to operate, and easy to maintain.

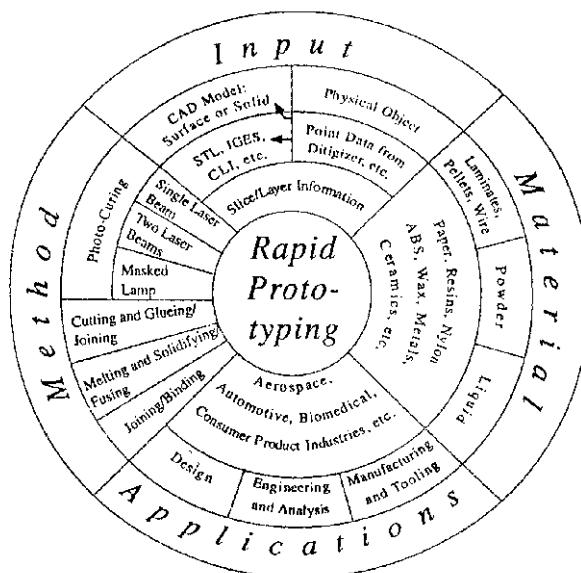
Mr. Syed Salman received the B.E. degree in Mechanical Engineering from AIT, Chikkamagalore, 2010. now pursuing M.Tech at GEC, Hassan in 2015.

Mr. Mahesh T S B.E. from SIT Tumkur in 1992, ME from UVCE Bangalore University in 2005 and Pursuing Ph.D. at VTU Belgaum. Before joining GECH, he served at KIT, Tiptur from 1997-2010. His areas of interest are Design Optimization, Mechanical Vibrations, FEA and Smart Materials. He has 01 national publication to his credit.

Mr. Prakash H R received the B.E. degrees in Mechanical Engineering from Malnad College of Engineering, Hassan in 2012. M.Tech in Government Engineering College, Hassan in 2014. at present he is served at GEC, Hassan As a guest lecture from 2014.

Dr. Nandeeshaiah B.E and M.Tech@UVCE, Bangalore, Ph.D@IIT, Bombay. Working @Dr.AIT, Bangalore as a professor in Mech. Dept. .

IV. RAPID WHEEL DEPICTING THE FOUR ASPECTS OF RP

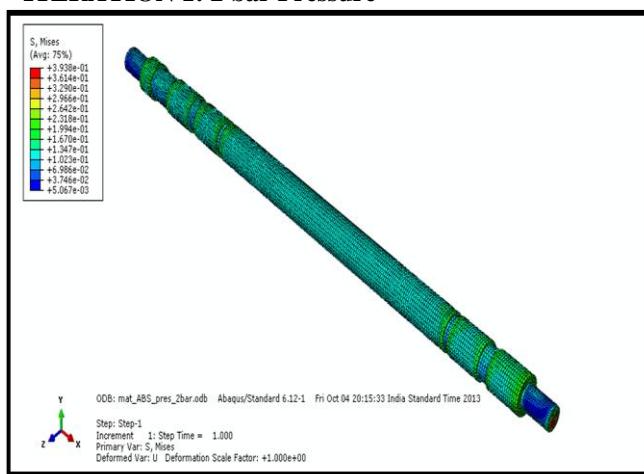


Most of the RP parts are touched up before they are used for their intended applications. Applications can be grouped in to design, engineering analysis and planning, tooling and manufacturing a wide range of RP is benefited for industrial applications such as aerospace medical bioconsumer military etc should be cited as “to be published” [6]. Please give affiliations and addresses for private communications [7].

Capitalize only the first word in a paper title, except for proper nouns and element symbols. For papers published in translation journals, please give the English citation first, followed by the original foreign-language citation [8].

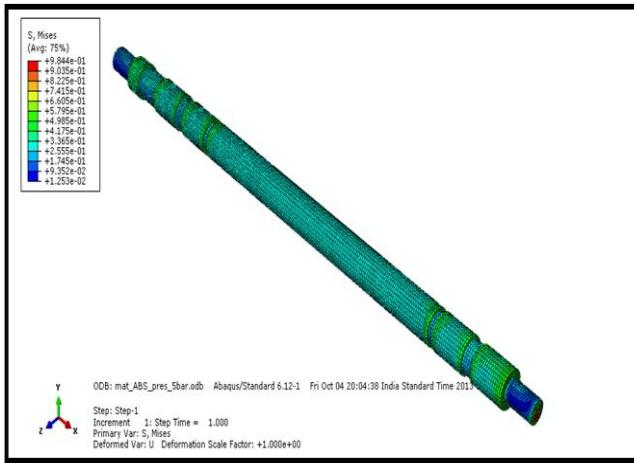
CASE 1: ABS Material

ITERATION 1: 2 bar Pressure



Be sure that the symbols in your equation have been defined before the equation appears or immediately following. Italicize symbols (T might refer to temperature, but T is the unit tesla). Refer to “(1),” not “Eq. (1)” or “equation (1),” except at the beginning of a sentence: “Equation (1) is ...”

ITERATION 2: 5 bar Pressure



V. SOME COMMON MISTAKES

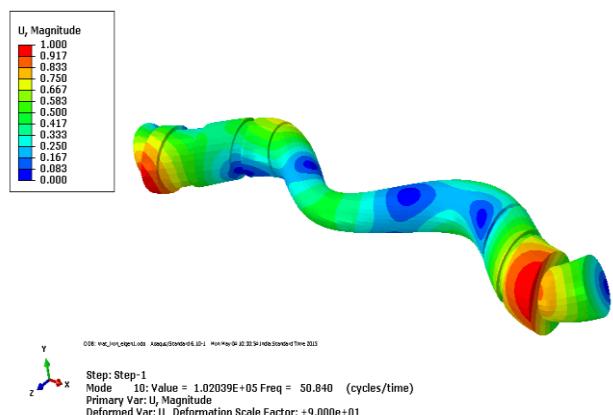
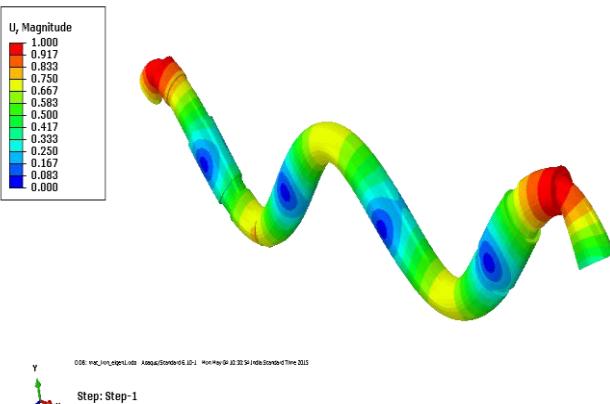
The word “data” is plural, not singular. The subscript for the permeability of vacuum μ_0 is zero, not a lowercase letter “o.” The term for residual magnetization is “remanence”; the adjective is “remanent”; do not write “remnance” or “remnant.” Use the word “micrometer” instead of “micron.” A graph within a graph is an “inset,” not an “insert.” The word “alternatively” is preferred to the word “alternately” (unless you really mean something that alternates). Use the word “whereas” instead of “while” (unless you are referring to simultaneous events). Do not use the word “essentially” to mean “approximately” or “effectively.” Do not use the word “issue” as a euphemism for “problem.” When compositions are not specified, separate chemical symbols by en-dashes; for example, “NiMn” indicates the intermetallic compound $\text{Ni}_{0.5}\text{Mn}_{0.5}$ whereas “Ni–Mn” indicates an alloy of some composition $\text{Ni}_x\text{Mn}_{1-x}$.

Be aware of the different meanings of the homophones “affect” (usually a verb) and “effect” (usually a noun), “complement” and “compliment,” “discreet” and “discrete,” “principal” (e.g., “principal investigator”) and “principle” (e.g., “principle of measurement”). Do not confuse “imply” and “infer.”

Prefixes such as “non,” “sub,” “micro,” “multi,” and “ultra” are not independent words; they should be joined to the words they modify, usually without a hyphen. There is no period after the “et” in the Latin abbreviation “*et al.*” (it is also italicized). The abbreviation “i.e.,” means “that is,” and the abbreviation “e.g.,” means “for example” (these abbreviations are not italicized).

An excellent style manual and source of information for science writers is [9].

VI. ANALYSIS VIEWS



VII. CONCLUSION

For the past 100 years that sand casting process has been acceptable for the development of CF pump parts. Today the emphasis is on meeting customer’s unique hydraulic requirements and meeting those requirements in ever shorter period of time. This reality is new challenges for pump manufactures and caused a rethinking of the processes of design, development and implementation of the product. The project focused on how rethinking is applied in terms of the application of advanced engineering tools and methods to specify the design and development of products. Among all the pumps the submerged pump is a many number of applications the design and development of the CF pumps using conventional manufacturing process (Sand Casting) is very complicated, difficult and also time consuming.

REFERENCES

- [1] Nuri [14] has written a computer program according to two lifting environment, 1964, pp. 15–64.
- [2] Gopal et al. [11] have been investigated the performance characteristics of a centrifugal pump, 1993, pp. 123–135.
- [3] Orban et al. [7] have disclosed a pump stage for use with an electrical submersible pump which includes an impeller and diffuser, 1985, ch. 4.
- [4] Joseph [8] has developed an implantable ventricular assist blood pump in cooperation with the NASA Lewis Research Center.
- [5] Sung-Hoon et al. [17] have characterized the properties of ABS parts fabricated by the FDM 1650, using a Design of Experiment.

- [6] An-Ke et al. [3] have considered the importance of developing highly efficient de-nitrogenation R. J. Vidmar. (1992, August).

AUTHOR



Mr. Syed Salman received the B.E. degree in Mechanical Engineering from AIT, Chikkamagalore, 2010. now pursuing M.Tech at GEC, Hassan in 2015.



Mr. Mahesh T S B.E. from SIT Tumkur in 1992, ME from UVCE Bangalore University in 2005 and Pursuing Ph.D. at VTU Belgaum. Before joining GECH, he served at KIT, Tiptur from 1997-2010. His areas of interest are Design Optimization, Mechanical Vibrations, FEA and Smart Materials. He has 01 national publication to his credit.



Mr. Prakash H R received the B.E. degrees in Mechanical Engineering from Malnad College of Engineering, Hassan in 2012. M.Tech in Government Engineering College, Hassan in 2014. at present he is served at GEC, Hassan As a guest lecture from 2014.

Dr. Nandeeshiah B.E and M.Tech@UVCE, Bangalore, Ph.D@IIT, Bombay. Working @Dr.AIT, Bangalore as a professor in Mech. Dept. .