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3.3.2 Number of books and chapters/papers published in national/ international conference proceedings per teacher in the year 2019-20

. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	National / International	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	**Dr.G.NAGA MALLESWARA RAO**	**AIP conference Procedings**	VIBRATIONAL AND FINITE ELIMENT ANALYSIS OF T-SECTION CANTILEVER BEAM USING ANSYS AND MATLAB	AIP CONFERENCE PROCEEDINGS	**INTERNATIONAL**	978-0-7354-1951-3	ESWAR COLLEGE OF ENGINEERING	AIP PUBLISHING
2	**Dr.G.NAGA MALLESWARA RAO**	Materials Today: Proceedings	Optimization of process parameters by using Taguchi Techniques in abrasive air jet machining of Al2O3 ceramic material	MATERIALS TODAY: PROCEEDING	**INTERNATIONAL**	2214-7853	ESWAR COLLEGE OF ENGINEERING	ELSEVIER
3	R.RAMBABU	INTRODUCTION TO ENGINEERING THERMODYNAMICS			**International**	978-93-6285-082-9	ESWAR COLLEGE OF ENGINEERING	AMARAVATHI RESEARCH ACADEMY
4	Dr.G.NAGAMALLESWARARAO	INTRODUCTION TO ENGINEERING THERMODYNAMICS			**International**	978-93-6285-082-9	ESWAR COLLEGE OF ENGINEERING	AMARAVATHI RESEARCH ACADEMY
5	D Rekha	Number System and Boolean Algebra And Switching Functions			**International**	978-93-6285-377-6	ESWAR COLLEGE OF ENGINEERING	AMARAVATHI RESEARCH ACADEMY

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6	J Vishnumurthy	Number System and Boolean Algebra And Switching Functions			International	978-93-6285-377-6	ESWAR COLLEGE OF ENGINEERING	AMARAVATHI RESEARCH ACADEMY
7	Shaik Mona	Number System and Boolean Algebra And Switching Functions			International	978-93-6285-377-6	ESWAR COLLEGE OF ENGINEERING	AMARAVATHI RESEARCH ACADEMY
8	K.SOWJANYA	Atoms and Molecules in Chemistry			International	978-93-6285-339-4	ESWAR COLLEGE OF ENGINEERING	AMARAVATHI RESEARCH ACADEMY
9	SK.RIZWANA	Atoms and Molecules in Chemistry			International	978-93-6285-339-4	ESWAR COLLEGE OF ENGINEERING	AMARAVATHI RESEARCH ACADEMY

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Optimization of process parameters by using Taguchi Techniques in abrasive air jet machining of Al_2O_3 ceramic material

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ABSTRACT

Quality surface finish of Al_2O_3 work piece present variety of issues such as non conventional machine is one of the foremost often times used material process in machining of Al_2O_3 work material to produce outlined surface finish, surface finish associated good characteristics of the work material and input parameters used. The quality of the surface, dimensional precision greatly has an effect and the elements through their useful life. This project introduces a new technique of investigating the P, AFR, SOD and T on abrasive air jet machining of Al_2O_3 work material. Investigating of process parameters was done by Taguchi Technique. Experiments were conducted on Al_2O_3 work piece, the parameters of machining such as P, AFR, SOD and T of SiO_2 particles impinged on the Al_2O_3 Materials are optimized by responded concerns particularly Material removing rate. The optimum levels of parameters investigated by using Taguchi method.

Selection and peer-review under responsibility of the scientific committee of the 1st International Conference on Manufacturing, Material Science and Engineering.

1. Introduction

Nontraditional machining process in producing elements made out of Al_2O_3. Unconventional machining process could be a removing of unwanted metal removed from work piece by energy, during this method no direct contact between tool and work piece, work Material is a form of energy accustomed remove unwanted material on work piece. In any manufacturing industries accuracy and surface finish of the work piece is most vital in this case work piece material as incredibly hard and brittle material, abrasive air jet machining is best technique to produce accuracy and higher glaze the Al_2O_3 material. Abrasive could be terribly small non metallic hard particles, sharp edged irregular shape of particles. SiO_2 particles are strikes to the work material.

N. Jagannatha et al. [1], in this Analysis paper optimized method parameters of abrasive hot air jet machining for glass by using Taguchi Technique, he was consider process parameters are air temperature, feed rate and stand of distance machining is completed on soda lime glass then measure MRR and surface roughness of the work Material. This study finished more significance of the MRR at 100 °C because the temperature is increased surface roughness of the work piece is decreased additionally he observed from micrographs at high temperature there is sufficient evidence of additional plastic deformation.

Nageswar K. Rao et al. [3], in this research paper optimized machining parameters of abrasive jet machining on epoxy glass fiber composites. Optimized machining parameters by victimization box Behnkins methodology and analyzed percentage contribution of machining parameters by victimization Analysis of Variance. He was consider process parameters are pressure, nozzle tip distance and nozzle diameter sic abrasive particles are 60 μm grit size are impinged on epoxy glass fiber composites and measured MRR. Finally he was analyzed effective machining parameters.

2. Make a Al_2O_3 material powder metallurgy technique

2.1. Powder preparation

Smooth fine powders are obtained by using mesh method; I consider mesh size is 10 μm.

2.2. Powder blending

The alumina powder is mixed with lubricant, use of the lubricant as powder is converted as a good fluidity.

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Vibrational and finite element analyses of T-Section cantilever beam using ANSYS and MATLAB

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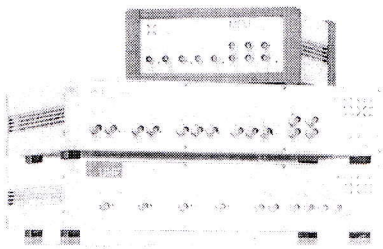

Vibrational and Finite Element Analyses of T-Section Cantilever Beam using ANSYS and MATLAB

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Abstract A structural member which is acted upon by a system of forces of external loads in perpendicular to it is known as beam. The beam bends whenever a horizontal beam is loaded with vertical loads. The amount with which a beam depends upon the amount and type of the loads, length of the beam and type of the beam. There are several types such as T, HSS and L shaped beams available to meet industrial and domestic applications. The major problems and failures with beams are fatigue failures, vibrations and improper analyses of various properties. This work discusses the effects of vibrations on T-Section Cantilever beam and frequency modes. Hence, to get an in-detail knowledge about T-Section Cantilever beams, the mode shapes and natural frequencies obtained by carrying out vibrational analysis in ANSYS are validated with the results that are obtained by carrying out the finite element analysis using MATLAB. It is found that, the results obtained by MATLAB may be accurate.

Keywords: *T-Section Cantilever Beam, ANSYS, MATLAB, Vibrational analysis, Finite Element Analysis, modes shapes, Natural Frequency.*

INTRODUCTION

A cantilever beam is a beam whose one end is fixed and another is free. The loads will be placed over the span of the beam. The cantilever carries the load when subjected to a structural load to the support where it is forced against by a moment and shear stress. These types of structures are allowed cantilever construction without external bracing, in contrast to constructions supported at both ends with loads applied between the supports. These are widely found in construction, notably in cantilever bridges and balconies. The T-shaped cross section serves as a flange in resisting compressive stresses.

OBJECTIVE OF THE WORK

- This work focusses on the study of the effect of vibrations on T-Section Cantilever Beam and vibrational analysis is carried out using both ANSYS and MATLAB by giving some free end conditions provided for the beam.
- Three materials, Structural Steel, Mild Steel and Aluminum are taken into consideration in this work and both vibrational and finite element analyses are carried out on those materials.
- The structure's vibration characteristics are determined by using Modal analysis.

METHODOLOGY

Modal analysis of cantilever beam of having length of 2000 mm is studied to determine the natural frequencies and mode shapes by using ANSYS and the results are compared with the results obtained by MATLAB.

For ANSYS, the following steps are performed to carry out this study.

- Beam Model
- Specifications of the Beam (The specifications of the beam under study is given in table1.)
- Modal Analysis with ANSYS Workbench R-15
- Beam Geometry
- Mesh Generation
- Applying Boundary Conditions
- Solution

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