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Full Name of the claimant Garte Santosh Sangappa

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Two paper published in IJAETMAS 1) Effect of Notch angle on fract. Toughness of MC steel 45C8 2) Effect of specimen dia. on Fracture toughness of M.S. steel 45-C8 Encl. Receipt of Rs 2000 per paper. Total Amt. 4000/-	2000-00		Garte S.S.
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International Journal of Advancement in Engineering Technology, Management & Applied Science

ISSN No: 2349-3224

Notification of Acceptance of Manuscript

Dear **Garte S.S, M. C. Swami**

Paper ID **IJ18M0425**

Paper Title: **Effect of Notch Angle on the Fracture Toughness of Medium carbon steel 45 C 8- An Experimental Approach**

Volume: 5 Issue: 4 Month: April

Congratulations! The review processes for "Effect of Notch Angle on the Fracture Toughness of Medium carbon steel 45 C 8- An Experimental Approach" has been completed. The journal received submissions from various regions of country and institutions and outside country, which were reviewed by field experts and only some quality papers, have been selected for publication. Based on the recommendations of the reviewers and the Technical Experts, we are pleased to inform you that your paper identified above has been accepted for publication.

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In order to register the journal and get your paper included in the Journal successfully, you must finish following steps.

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Notification of Acceptance of Manuscript

Dear **Garte S.S, M. C. Swami**

Paper ID **IJ18M0501**

Paper Title: **Effect of Specimen Diameter and Notch Diameter on the Fracture Toughness of Medium carbon steel 45 C 8- An Experimental Approach**

Volume: 5 Issue: 5 Month: May

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Effect of Notch Angle on the Fracture Toughness of Medium carbon steel 45 C 8- An Experimental Approach

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29.06.2018

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Effect of Notch Angle on the Fracture Toughness of Medium carbon steel 45 C 8- An Experimental Approach

Garte S.S,[1] M. C. Swami[2]

[1](M.E Machine Design Student of Mechanical Department, M. S. Bidve Engineering College, Latur, Maharashtra, India

[2](Faculty of Mechanical Department, M. S. Bidve Engineering College, Latur, Maharashtra, India.)

Abstract— **In this paper fracture toughness (K_{IC}) of 45 C 8 has been determined by using circumferentially cracked round bar (CCRB) specimen having three notch angles (α) namely 45^0, 60^0, 75^0 respectively. The purpose of the study was to determine the effect of notch angle on the fracture toughness of the 45 C 8. The result shows that the value of notch angle has significant effect on the value of fracture toughness (K_{IC})**

Keywords*—" Medium carbon steel 45c8", "CCRB specimen", "Fracture toughness", "notched specimen"

I. INTRODUCTION

Failures have occurred for many reasons, including uncertain loading or environment, defects in the materials, lack of design, and deficiencies in construction or maintenance. Design against fracture has a technology of its own, and this is a very active area of current research. The term "fracture mechanics" refers to a specialization within solid mechanics in which the presence of a crack is assumed. Fracture mechanics may be used to estimate crack propagation fatigue growth rate and time to final failure.

Faith Bzkurt, Eva Schmidova[1] worked on two different approaches for S355 steel. In first method, a circumferentially cracked round bar was loaded in tensile mode and pulled till failure. Using suitable equations, fracture toughness can be calculated. In the second method, a circumferentially notched bar specimen without fatigue pre-cracking was loaded in a tensile machine. By means of fracture load values, fracture toughness was determined by the proposed equations.

*Adviteeya Gupta ,Ashutosh Bansal [2]*concluded that generation of notch increases Strength of notched bar member as compared to un notched bar. It should be evaluated by taking in to account the notch effect. Since the bar can be subjected to axial tensile loading. In this work nine specimens of notched bar with V shape have been analysed under tensile load on universal testing machine.

S. K. Nath & Uttam Das [3] has found that lower notch diameter and higher notch angle shows higher value of (K_{IC}). In general machine components and structural components are designed over sized in order to avoid failure. This leads to consumption of more material and over weight problem. Hence such efforts are not cost effective. This problem is basically due to non availability of fracture toughness data to the design engineers.

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[2](Faculty of Mechanical Department, M. S. Bidve Engineering College, Latur, Maharashtra, India.)

Abstract— **In this paper fracture toughness (K_{IC}) of 45 C 8 has been determined by using circumferentially cracked round bar (CCRB) specimen having three three specimen diameters (D) 12 mm,10mm,8mm and three notch diameters(d)10mm, 8mm, 6.7mm rspectively with D/d ratio as 1.2. The purpose of the study was to determine the effect of specimen diameter sand notch diameter on the fracture toughness of the 45 C 8. The result shows that the value of notch diameter has significant effect on the value of fracture toughness (K_{IC})**

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