Experimental Investigation For Laser Cutting On

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Experimental Investigation For Laser Cutting
Experimental Investigation and Analysis of Laser Cutting Process Parameters Senthil Kumar Abstract— Laser cutting is one of the popular unconventional processes in which complicated shapes of ...

Experimental Investigation and Analysis of Laser Cutting ...
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Experimental Investigation For Laser Cutting On
This study reports on complete glass cutting using a single CO 2 laser beam with a low power of several tens of watts. In this study, the morphological characteristics of a cut surface and the process window for complete cutting were investigated at various process conditions.

Experimental investigation on the CO 2 laser cutting of ...
The surface roughness of laser cutting edge were measured by Mahr Perthometer M2. The morphology images of laser cut sections were taken by Olympus SZ-X16 Stereoscope. The experiments are carried out to evaluate the effect of the laser cutting process

Experimental investigation of the effect of process ...
laser cutting of various engineering materials with special emphasis on experimental investigations that dealt with ana lyzing process parameters that affect the cut quality charac teristics. In...

(PDF) Experimental investigations of CO2 laser cut quality ...
Abstract. A three-dimensional analytical model of pulsed laser cutting has been developed, particularly aimed at predicting the quality of cut under various cutting conditions. The model is based on infinitesimal point heat sources, representing the effect of the laser beam on the surfaces inside the cutting zone, and it includes the contribution of the oxygen reaction to the heating of the metal.

Theoretical and Experimental Investigation of Pulsed Laser ...
ELSEVIER Journal of Materials Processing Technology 58 (1996) 323-330 Jourmd of Materials Processing Technology Experimental investigation into CO2 laser cutting parameters Bekir S. Yilba Department of Mechanical Engineering, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia Received 21 November 1994; accepted 20 July 1995 Industrial summary The quality of laser cuts is of the utmost importance in laser processing.

Experimental investigation into CO2 laser cutting ...
The CO 2 laser cutting of three polymeric materials namely polypropylene (PP), polycarbonate (PC) and polymethyl methacrylate (PMMA) is investigated with the aim of evaluating the effect of the main input laser cutting parameters (laser power, cutting speed and compressed air pressure) on laser cutting quality of the different polymers and developing model equations relating input process parameters with the output. The output quality characteristics examined were heat affected zone (HAZ ...

Laser cutting of polymeric materials: An experimental ...
engineering materials. This study involves effect of laser power, cutting speed and assisting gas pressure on surface roughness and kerf width. Aluminum alloy 8011 is one of the difficult to cut material by laser beam machine because of its reflectivity. Because of its excellent properties it is widely used in electronic,

Experimental Investigation and Analysis of Process ...
Abstract. A theoretical model has been developed for simulating the laser grooving process. It takes into account the interaction among subsequent pulses, the required time for the melting temperature to be reached and the subsequent removal of a finite volume of material during each laser pulse. The model predicts the maximum groove depth that can be achieved for a specified set of process parameters, such as laser power, pulsing frequency, and scanning velocity.

Theoretical and experimental investigation of pulsed laser ...
This paper experimentally investigates the cut quality of laser cutting for the age hardened Inconel 718 nickel based super alloy, with the use of a continuous CO2 4.0 kW laser cutting system.

(PDF) Laser cutting process – A Review
The experimental results showed that water jet–guided laser had a finishing effect on the final workpiece surface, just like the trim cut in wire electric discharge machining. All in all, water jet–guided laser technique is a potential processing method for CFRP and the follow-up researches should be conducted.

The experimental investigation of water jet–guided laser ...
Vol-3 Issue-3 2017 IJARIIE -ISSN(O) 2395 4396 5210 www.ijariie.com 900 EXPERIMENTAL INVESTIGATION OF SS321 AND SS316L USING CO 2 LASER CUTTING MACHINE 1. Miss Riya Patel –M.E student at Merchant Engineering Collage Basna,Gujarat

EXPERIMENTAL INVESTIGATION OF SS321 AND SS316L USING CO ...
Experimental investigations on Nd:YAG laser cutting of silicon nitride Experimental investigations on Nd:YAG laser cutting of silicon nitride Kuar, A.S. ; Doloi, B. ; Bhattacharyya, B. 2005-01-01 00:00:00 A laser beam has great ability to machine very hard conductive as well as non-conductive materials such as high speed steel, ceramics, and diamonds, etc. Present paper includes the parametric ...

Experimental investigations on Nd:YAG laser cutting of ...
Motivated by the need to enhance the kerf quality during cutting of Poly(methyl methacrylate) (PMMA) sheets using pulsed CO 2 laser beam, this study presents an experimental investigation and optimization of laser cutting parameters including cutting speed, assisted gas pressure, laser beam power, and sheet thickness. The kerf quality characteristics including the top kerf width, bottom kerf width, and kerf taper have been considered as the process responses and have been measured using ...

Improving laser cutting quality of polymethylmethacrylate ...
The experimental investigations of pulsed Nd:YAG laser cutting of silicon nitride ceramic composite show that thermal affected zone and micro-cracks increases on increasing the pulse energy and feed rate but decreases very little with pulse frequency (Jhang et al., 1996). Also the flexural strength of cut specimen was found to be reduced by 40%.

Experimental study of Nd:YAG laser beam machining—An ...
The improvement of machinability during laser-assisted milling of Ti-6Al-4V alloy was investigated. The effects of laser processing and milling parameters on cutting forces and tool wear have been examined.

Experimental investigation of cutting forces and tool wear ...
Experimental investigation of cut quality characteristics on SS321 using plasma arc cutting. ... Patel R, Patel JD (2017) Experimental investigation of SS321 and SS316L using co 2 laser cutting machine. IJARIIE 3:900–908. Google Scholar Download references. ...

Experimental investigation of cut quality characteristics ...
orthogonal array in order to investigate the effect of laser cutting parameters: Laser Power, Cutting Speed and Gas Pressure on cut quality parameter erfwidth. Based on the experimental K results, Second Order Regression, Artificial Neural Network (ANN) and Fuzzy Logic (FL) based predictive models have been developed.