

EDITORS

ERRY YULIAN TRIBLAS ADESTA

MOHAMMAD YEAKUB ALI

AKM NURUL AMIN

DESIGN FOR MANUFACTURE

Towards Improved Manufacturability



IIUM Press

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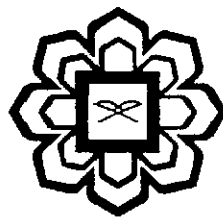
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EMAIL: iiumprinting@yahoo.com

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2,3 School of Technology, Tunku Abdul Rahman College
✉ : tasnim@iium.edu.my

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✉ : tasnim@iium.edu.my

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1, 2, 3 Faculty of Engineering – International Islamic University Malaysia
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1, 2, 3 Faculty of Engineering - International Islamic University Malaysia
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✉ : yusmawiza@iiium.edu.my

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Belal Ahmed Ghazal¹ and Erry Yulian Triblas Adesta²
1, 2 Faculty of Engineering – International Islamic University Malaysia
✉ : belalghazal88@gmail.com ; ✉ : eadesta@iium.edu.my

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Tasnim Firdaus Ariff
Faculty of Engineering – International Islamic University Malaysia
✉ : tasnim@iium.edu.my

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1. Faculty of Engineering – International Islamic University Malaysia
✉ : mohammad_iqbal@iium.edu.my

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✉ : mahmoodfattah@yahoo.com / ✉ : eadesta@iium.edu.my

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1, 2, 3 Faculty of Engineering – International Islamic University Malaysia
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Faculty of Engineering, International Islamic University Malaysia
✉: mkonneh@iium.edu.my

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Mohamed Konneh¹, and Abdul Halim
Faculty of Engineering - International Islamic University Malaysia
✉: mkonneh@iium.edu.my

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Mohamed Konneh¹, Nur Jannah Shad and Noor Fazlin Saharudin
Faculty of Engineering - International Islamic University Malaysia
✉: mkonneh@iium.edu.my

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Abdus Sabur¹ and Mohammad Yeakub Ali
Department of Manufacturing and Materials Engineering
Faculty of Engineering, International Islamic University Malaysia
✉: asbur72@yahoo.com

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Belal Ahmed Ghazal¹ and Erry Yulian Triblas Adesta²
1, 2. Faculty of Engineering – International Islamic University Malaysia
✉: belalghazl88@gmail.com; ✉: eadesta@iium.edu.my

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Umer Mushtaq¹ and Erry Yulian Triblas Adesta²
^{1, 2} Faculty of Engineering – International Islamic University Malaysia
✉ : mirkaz9@hotmail.com ; mirkaz9@yahoo.com / ✉ : eadesta@iium.edu.my

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Mohamed Konneh¹, and Muhammad Mukhtar
Faculty of Engineering, International Islamic University Malaysia
✉: mkonneh@iium.edu.my

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Mohamed Konneh¹, and Abdul Halim
Faculty of Engineering - International Islamic University Malaysia
✉: mkonneh@iium.edu.my

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Abdus Sabur¹ and Mohammad Yeakub Ali
Department of Manufacturing and Materials Engineering
Faculty of Engineering, International Islamic University Malaysia
✉ : asbur72@yahoo.com

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Mohammed Kaleemullah¹, Erry Yulian Triblas Adesta¹, Waleed F. Faris¹
¹ Faculty of Engineering, International Islamic University Malaysia
mkalim@gmail.com, eadesta@iium.edu.my, waleed@iium.edu.my

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Belal Ahmed Ghazal¹ and Erry Yulian Triblas Adesta²
1, 2. Faculty of Engineering – International Islamic University Malaysia
✉: belalghazl88@gmail.com; ✉: eadesta@iium.edu.my

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Umer Mushtaq¹ and Erry Yulian Triblas Adesta²
^{1, 2} Faculty of Engineering – International Islamic University Malaysia
✉ : mirkaz9@hotmail.com ; mirkaz9@yahoo.com / ✉ : eadesta@iium.edu.my

Reverse Engineering for Rapid Prototyping of Automotive Components

WAY Yusoff¹, Muhammad Ridhuan Kamarudin² and Noor Iliana Mohd Salimi³

1, 2, 3 Faculty of Engineering – International Islamic University Malaysia

✉ : yusmawiza@iium.edu.my; wan_ching05@yahoo.com.my; nuriliana@yahoo.com

1. Introduction

Reverse engineering (RE) is the backward process of engineering which obtain new product from an existing product. It transfers the parametric and geometrically data into the CAD models. CAD models used to redrawn the original geometry into new design. Rapid prototyping and reverse engineering would consent to ability of remanufacture to the designer and manufacturer as well. This two process gives an advantages that could be expand and yet eliminate disadvantages of design. The functions of an existing part still are not perfect. It needs more improvement to be more effective.

The main purpose of this project is to enhance the knowledge on the procedure of geometrical conversion from initial model into 3D Solid CAD data and evaluating an accuracy of model by scanning and conversion process using articulate arm scanner which called FARO laser scanning arm. After the process of RE, this project require on redesign and remanufacture the part in a way to improve the function of it by rapid prototyping technology.

2. Reverse Engineering (RE)

Several procedures are defined in RE process. It was includes copy of an existing part, improvement of the part and designing for a new part. The step by step process required for designing in Computer Aided Design (CAD). This CAD model shows the parametric and geometry of original part which then being recovered with a new design. Character of the new design should fulfill an ergonomic matters and other factors. RE techniques can be used