

## Utilizing the technique of industrial computed tomography (iCT) in reverse engineering field for industrial products

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### **Abstract:**

Reverse engineering plays a significant role in the industrial design field by assisting industrial companies through identifying competing products within markets and clarifying the strengths and weaknesses, it also helps industrial designers and provides them with necessary knowledge and information about the nature of these products by analyzing their different parts besides the relationship of each part to the other, which helps the designers to develop either enhance their products to increase its ability to compete for other products within markets.

Reverse engineering also helps significantly in the process of spreading knowledge and science between different countries by analyzing products and manufacturing methods then to study the geometrical relationship in different parts of the product, which leads to development and modernization in engineering and industrial sciences within these countries were to help them in enhancing their products thus many institutions and research centers start searching about how to develop and update methods and trials of reverse engineering then to take advantage of modern and promising techniques where these countries and institutions may reach out to maximum possible benefit through analyzing these products and revealing their engineering and industrial secrets. Therefore this research aims to shed light on industrial computed tomography (iCT) as it is the most promising technology in the reverse engineering field with its unique features rather than other used techniques. ICT technology is characterized by being non-destructive to the examined and photographed sample. Moreover, it reveals the internal and external engineering details of any shape, color, surface or material regardless of their thickness or density. The mentioned technology also assists engineers and designers in getting a wealth of information of the examined and photographed body by determining the type of material, the shape of the fibers and the areas of stress in that body ....etc.

In the research process, the researcher relies upon the descriptive approach to provide accurate scientific research on what that technology is and how to take its advantages in the reverse engineering field besides providing information to industrial designers to recognize the modern and promising methods in the reverse engineering field to serve the field of industrial product design.

### **Keywords:**

Reverse Engineering, Industrial Products, Industrial Computed Tomography, Industrial Designer

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