

**UNIVERSITI TEKNOLOGI MARA**

**ANALYSIS OF BLOOD FLOW IN  
ARTIFICIAL CANCELLOUS BONE  
ON CFD SIMULATION**

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## **ABSTRACT**

Artificial cancellous bone is a promising medium for tissue engineering due to its ability to provide long-term or transient support for cell development. Researchers investigate the permeability and hydraulic conductivity of scaffolds with various porosities using computational fluid dynamics (CFD) simulation. Using ANSYS Workbench software to identify the factors influencing blood flow in faulty artificial cancellous bone. This project using ANSYS Workbench which is fluent to run the simulation. The results show that the mechanical characteristics of the scaffold affect the patterns of blood flow within bone scaffolds. These results imply that bone scaffold design can be optimized to increase blood flow. The conclusion, the inlet velocity affects the pressure and the permeability of artificial cancellous bone. One of the suggestions for making this analysis better is to use a high-end device, which will allow for a quicker examination.

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