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## Microstructural characterization of Titanium to copper alloys with their antibacterial rate improvement for biomedical application

Ti-Cu alloys are promising alloys for biomedical application in dentistry. Previously, metal ions (Ag+ and Zn+) have been widely used as antibacterial agents, however these ions have been found to be toxic to the human body [1]. Copper has been preferred as a good antibacterial agent due to its low toxicity and high cytocompatibility. The current study is aimed at producing biocompatible Ti-Cu alloys with good mechanical properties, corrosion resistance and antibacterial properties.

## Methods

Several TiCu alloys were synthesized with the following composition: Cp-Ti, Ti-0.88wt.%Cu, Ti-2.44wt.%Cu, Ti-3.24wt.%Cu and Ti-10wt.%Cu. The alloys were then exposed to staphylococcus epidermidis bacteria. Then they were characterized using the scanning electron microscopy (SEM), energy dispersive spectroscopy (EDS), scanning transmission electron microscopy (STEM), focused ion beam SEM (FIBSEM) and transmission Kikuchi diffraction (TKD) technique.

Rsults of this study will be available during the date of the conference presentation

## Apply to be<br> considered for a student <br> &nbsp; award (Yes / No)?

No

## Level for award<br>&nbsp;(Hons, MSc, <br> &nbsp; PhD, N/A)?

Msc

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