

## **Faculty of Engineering**

### **Summer Research Program 2023-2024**

Project Title: Pre-clinical testing of stent prototypes

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### **Objective**

The main objective is to test stent prototypes for thrombogenicity and coatings degradation.

### **Project Details**

The project aims to assist in the testing of a new fully resorbable and drug-eluting cardiac stent. A Chandler loop apparatus fabricated at Monash University will be used to evaluate coagulation and thrombus formation of a selection of materials, including polymers, magnesium alloy, and stent prototypes. The samples will be exposed to human blood under agitated conditions and then analysed by calorimetric and imaging assay. After testing, the materials that did not promote thrombogenicity will be selected. In addition, polymeric thin films will be prepared by a spraying coat technique to form a protective and drug-eluting layer on the stent alloy. The degradation rate of these films will be evaluated in dynamic conditions by a degradation flow rig.

### **Prerequisites**

Materials and Biomedical engineering background.

### **Additional Information**

Applicants will be required to attend an interview.