

# COMPARATIVE EVALUATION SHEAR BOND STRENGTH BETWEEN DIGITAL PROVISIONAL CROWN AND PMMA



**Keywords:** 3D-printing provisional crown | Milling provisional crowns | Polylactic acid | Shear bond strength

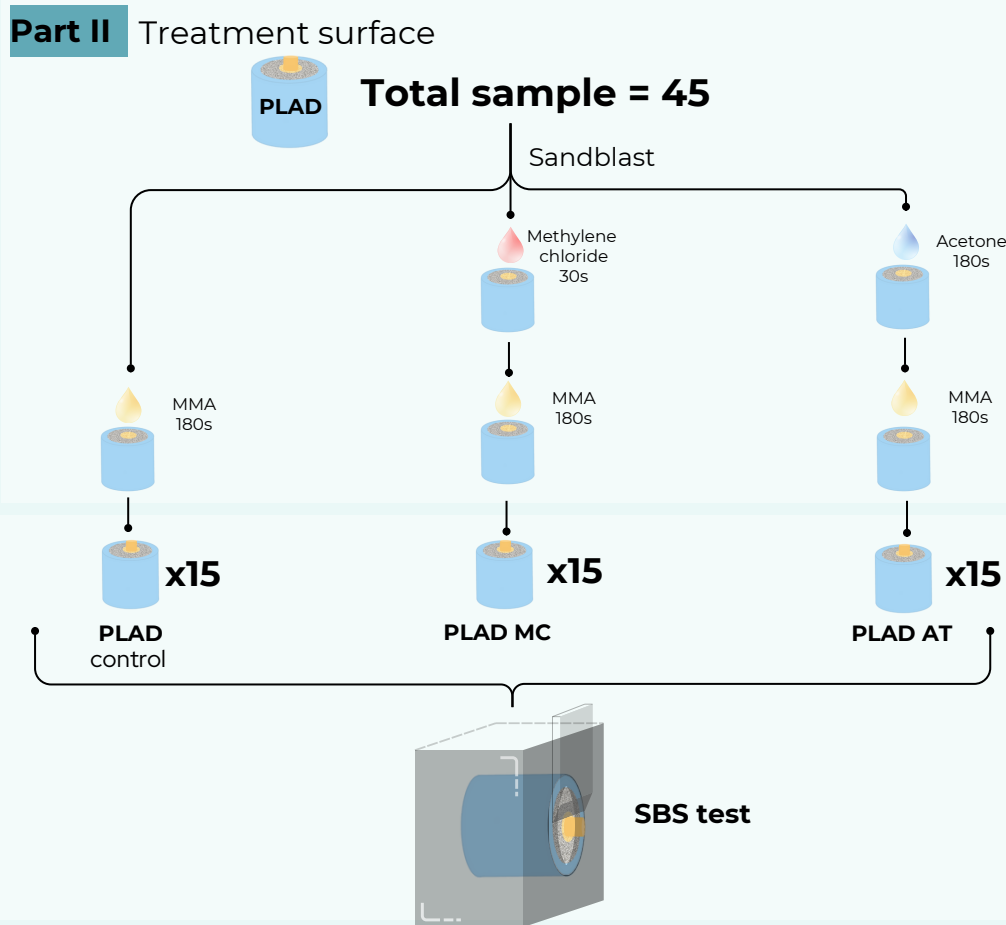
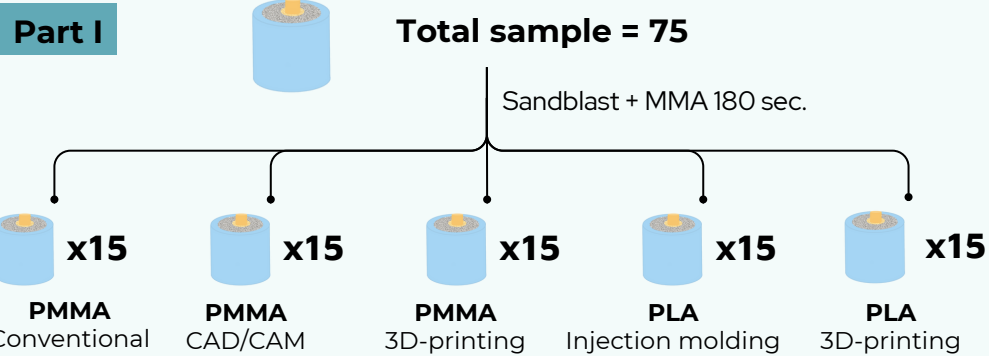
## Background & Review literature

One of the most significant fixed prosthodontic procedures is the provisional crown. Polymethyl methacrylate (PMMA) is the most often used due to its low cost, color stability, simplicity of repair, and mechanical qualities. Nevertheless, PMMA undergoes an exothermic polymerization process. **Polylactic acid (PLA)** is one of the most popular biopolymers due to its multiple benefits. It is made from nontoxic renewable sources in an environmentally benign. PLA's property is its biocompatibility, particularly in biomedical applications, as well as research into the compatibility of PLA with other materials through proper surface modification or blend preparation for potential dentistry applications.

## Objective

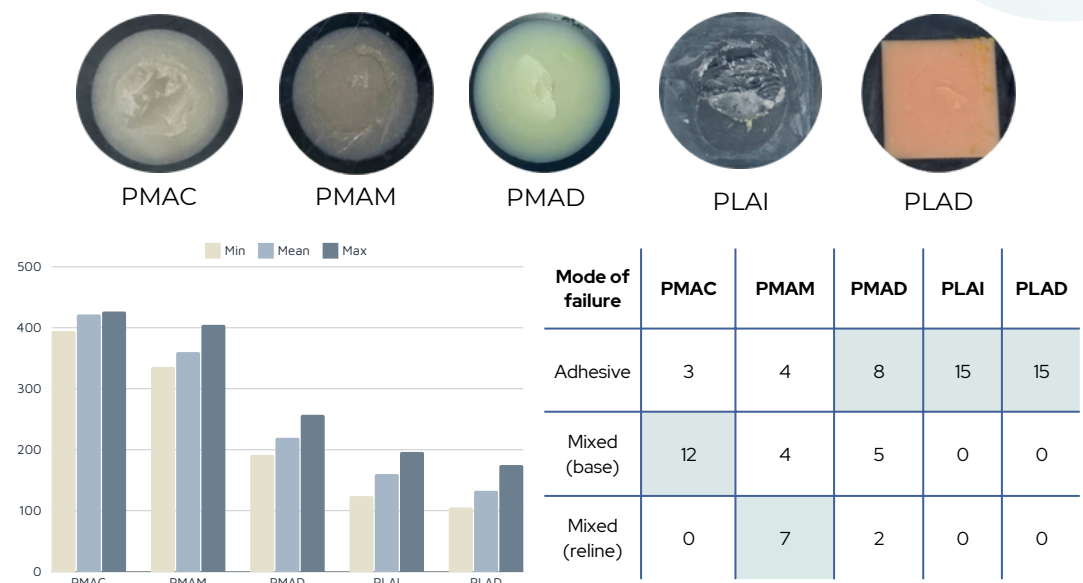
To compare the shear bond strengths (SBS) between different types of provisional crown materials and different surface treatment with auto-polymerizing polymethyl methacrylate (PMMA).

## Method

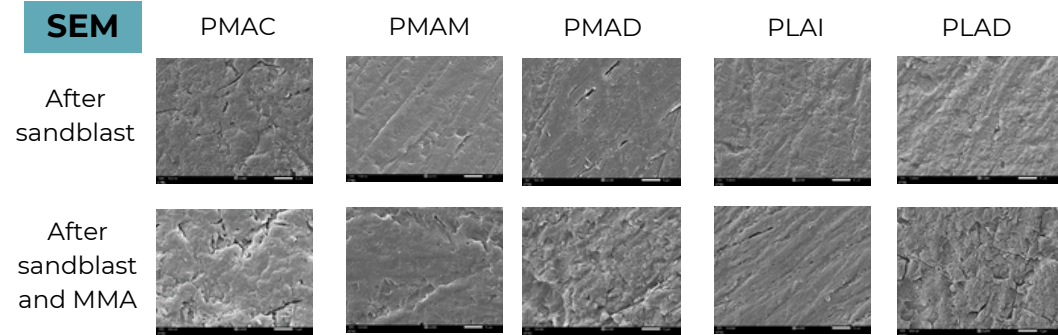


## Result

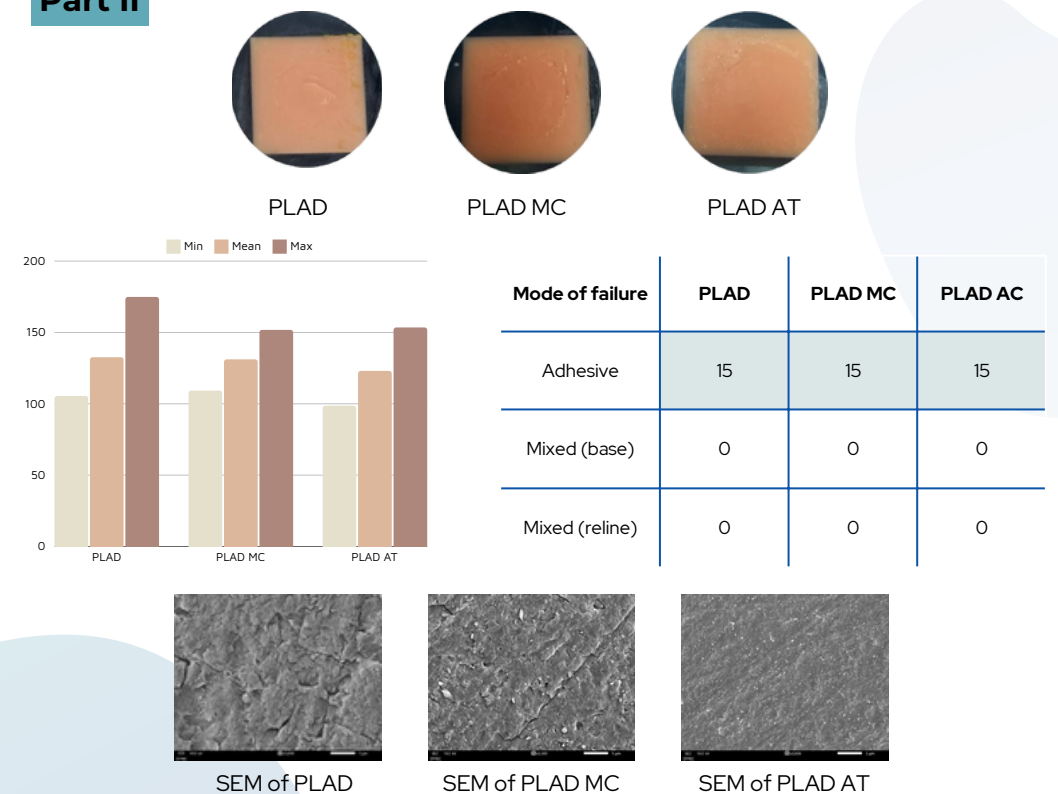
### Part I



### SEM



### Part II



## Conclusion

The provisional crown material PMAC group provided the highest SBS compared to other groups, and there was no significant statistical difference in SBS between Group PLAD when treated with methylene chloride, and acetone on the surface after sandblasting, MMA and relined with auto-polymerizing PMMA.

## Advisors



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