

# Effect of the Nanoclay Type on Curing Kinetics and Mechanical Properties of Dental Nanocomposite Resins

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## Introduction

The aim of this study was the synthesis and characterization of dental resin nanocomposites containing organomodified nanoclays with variant functional groups.

## Methods

Nanocomposites were prepared by mixing BisGMA, TEGDMA, camphorquinone, DMAEMA, and incorporating different organomodified nanoclays.

Unpolymerized composites were exposed to visible light of a halogen lamp, and scanned by a FTIR spectrometer at different curing time intervals. The degree of conversion (DC %) at each time period was calculated.

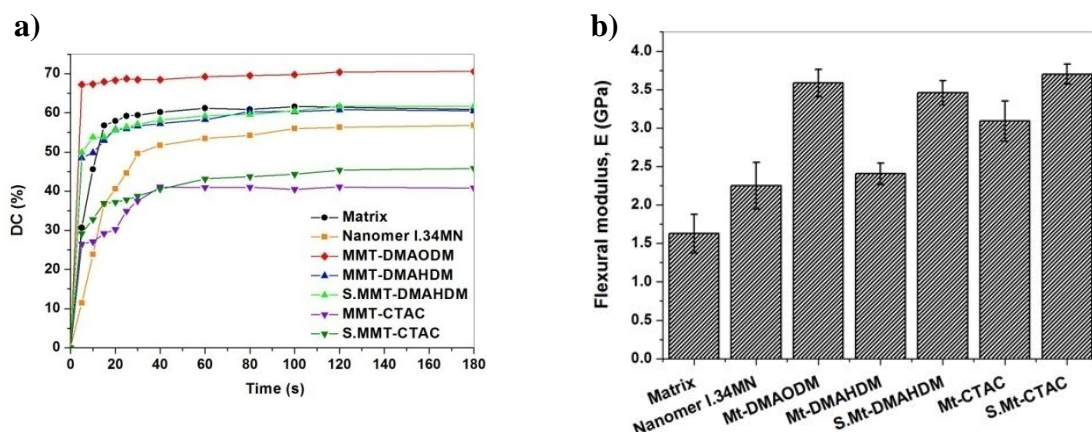
Bar- shaped specimens (25 x 2 x 2 mm) were prepared and polymerized. Flexural strength and modulus were measured by 3-point bending test.

## Results

According to Figure 1, nanoclays with methacrylated groups can increase the DC (%) and flexural modulus of dental resins.

## Conclusions

The different type of nanoclay organic modifier may significantly affect curing behavior and mechanical properties of dental nanocomposites.



**Figure 1.** Effect of the different type of nanoclay on a) DC (%) and b) flexural modulus of dental resins.