

# Increased-Cure and Color Stable Dental Adhesives

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## Technology description

UT Health San Antonio researchers have developed a novel polyacrylate materials and/or light- and/or dual-cure resins that have low color and are color stable. The resins also demonstrate an increased degree of cure. The polyacrylate materials may be useful in dentistry applications as well as orthopedics and other biomedical applications.

### Background:

Typically, self-cure and light-cure and dual-cure systems produce a yellow resin that continues to further yellow over time as the resin ages. Because of the high degree of color and the significant color shift over time, self-cure and dual-cure resins are typically used as cements or in applications where esthetics is not a primary concern. Light-cure systems are typically less yellow and offer improved color stability, but suffer from shrinkage stress. Light-cure systems also suffer from incomplete cure, requiring time-intensive and high-cost procedures to reduce the potential for pulpal inflammation.

## Application area

The invention is applicable to the general Dentistry market and has both a light-cure and dual-cure component, allowing for use in a variety of products and applications.

Pit and fissure sealants

Composite restorative materials

Flowable composites

Dual-cure composite luting/restorative resins

Chemical cure bonding primers

Post and core buildup materials

## Advantages

Additionally, it resolves the problems exhibited by current systems by providing the following benefits:

Low color resin having increased color stability over time

Increased degree of cure and reduced shrinkage stress

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