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Fast-Curing Underwater Adhesive

Tech ID: 33663 / UC Case 2024-951-0

BRIEF DESCRIPTION

A scalable and less toxic underwater adhesive developed from two small molecule precursors, providing fast and stable adhesion.

FULL DESCRIPTION

Researchers at UCI have developed a new underwater adhesive technology that is composed of molecule precursors instead of complicated polymers, making it an efficient and less toxic alternative. The adhesive works by a hydrolysis, condensation, liquid-liquid phase separation, and zwitterionic interaction process, forming a sticky viscoelastic liquid that is tough and acts rapidly. It solidifies under light irradiation, providing stable adhesion within 2 minutes.

SUGGESTED USES

- » Use in the medical industry, particularly for emergency wound closures
- » Applicable in the watercraft industry for quick repairs
- » Potential use in other industries requiring underwater adhesion, such as construction and robotics

ADVANTAGES

- » Fast and stable bonding
- » Less toxicity because it does not require organic solvents
- » Easier to scale up due to its simple synthesis process
- » Cost-effective compared to polymer-based adhesives

PATENT STATUS

Patent Pending

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OTHER INFORMATION

CATEGORIZED AS

- » **Materials & Chemicals**
- » Chemicals
- » Other

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