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

CONTACT

Richard Y. Tun
tunr@uci.edu
tel: 949-824-3586.



OTHER INFORMATION

CATEGORIZED AS

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

RELATED CASES

2024-951-0

UCI Beall
Applied Innovation

5270 California Avenue / Irvine,CA
92697-7700 / Tel: 949.824.2683

© 2024, The Regents of the University of California
Terms of use
Privacy Notice