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Positively Charged Adhesives

Positively charged catechol adhesives achieve strong underwater bonding and potential antimicrobial coatings.

Researchers at Purdue University developed biomimetic, positively charged adhesive polymers with excellent binding properties in both wet and dry environments. These adhesives contain catechol groups and varying amounts of either positively charged groups or groups that cross-link when placed in water. The researchers carried out structure-function studies and arrived at an optimum polymer charge content that provided maximum bulk adhesion and surface bonding in both dry and underwater conditions. These adhesives may also be suitable for making surface binding coatings with antibacterial properties.

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Category
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Chemicals & Advanced Materials/Materials Processing & Manufacturing Technologies

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Advantages

- Effective under both wet and dry conditions

- High performance in extreme conditions

- Reproducible synthesis

Applications

- Adhesives

-Antimicrobial coatings

Related Publications: Positive Charge Influences on the Surface Interactions and Cohesive

Bonding of a Catechol-Containing Polymer. ACS Appl. Mater. Interfaces. DOI: 10.1021/acsami.3c16889

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