

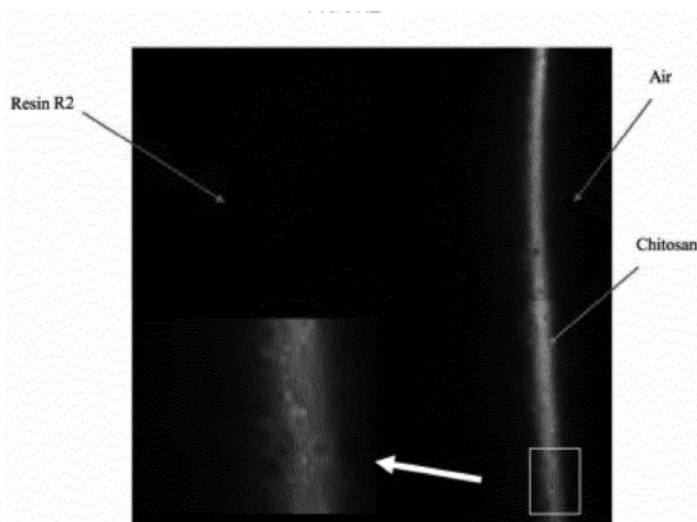


UNITY FVG

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Technology Transfer

NEW ENAMEL-DENTIN ADHESIVES BASED ON CHEMICALLY MODIFIED NATURAL POLYSACCHARIDES

An innovative use of chemically modified chitosan



Category:

Life Sciences

Patent Ownership:

UNIVERSITA' DI TRIESTE

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Granted in Italy, in Europe (France, Germany, UK, Italy Switzerland) and in United States

Licensing Availability:

Available

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Brief description

The present invention concerns the preparation of chemically modified derivatives of chitosan with acrylic groups and their use in the field of enamel-dentin adhesives. Chitosan derivatives have physical-chemical features which allow them to interact with the organic part of the demineralized tooth. At the same time, the acrylic groups incorporated in the polymer chain allow the formation of a covalent bond with the restorative material used in the dental field that is typically composed of acrylic resins.

Innovative aspects and main advantages

By combining the adhesion to the tooth surface and the bond with the restorative material, the chemically modified chitosan is able to increase the lifespan of the dental restoration. This invention further allows to reduce the long-term cost of the dental treatment.

Applications

This invention can find use in the field of dental restoration, in particular enamel-dentin adhesives. Chitosan, one of the most polysaccharide-based systems, is highly biocompatible and, as such, it is ideal for applications involving the direct contact with biological tissues.

Potential market

The whole biomedical industry should be interested in this chitosan application. Adhesive systems are primarily addressed to the dental field. The orthopedic and the ophthalmic filed are related target markets.

Development status

Technology validated at lab level.

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