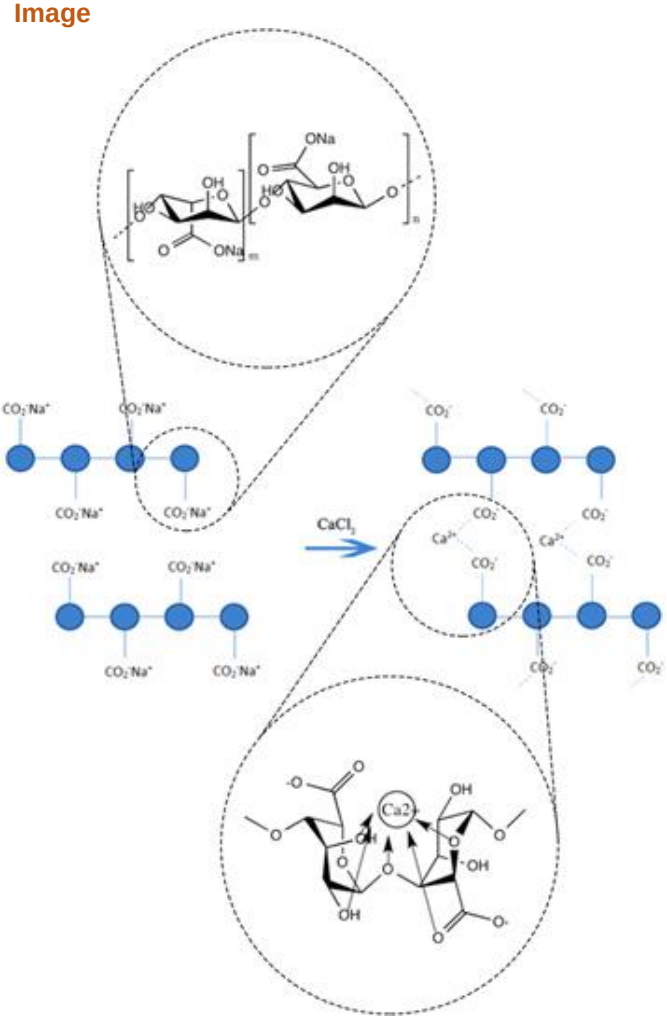
Study of the preparation of cosmetic teeth painting veneers based on polymeric materials

Hasan Nazha, PhD, University of Miskolc, Hungary

Abstract (300 word limit)

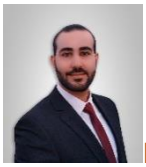
Statement of the Problem: Since the veneer does not last forever and may fail due to fracture or adhesion failure or wrong selection of the appropriate design, removing the large thickness of the outer layer of the tooth may make it vulnerable to weakness and long-term failure. The importance of the research is to save as much tooth structure as possible by the use of cosmetic teeth painting veneers. The aim of this study is to reach the polymeric material that helps us to prepare dental painting veneers and improve their physical, mechanical, optical, and chemical properties. Methodology & Theoretical Orientation: Six alginate/TiO2 tooth paint combinations were prepared and applied to extracted human teeth to obtain the required specimens. Findings: The results showed that it is possible to prepare a paint mixture based on cheap and locally available raw materials consisting of sodium alginate as a polymeric matrix material in this mixture, titanium dioxide as a coloring additive, and calcium chloride solution as a bonding for sodium alginate molecules and improving for their properties. The results showed also that the best combination was the highest chemical stability and had proper physical properties (viscosity) that make it suitable for preparation of cosmetic teeth painting veneers. Conclusion & Significance: It can be concluded that the combination (sodium alginate 2% + titanium dioxide 4%) immersed in a solution of calcium chloride (11.11% concentration) is the most suitable to use in the preparation of temporary paints due to its highest chemical stability and having appropriate physical and optical properties that enable them to use possibly as temporary cosmetic teeth painting veneers.

Image



Recent Publications (minimum 5)

1. Stavreva N and Kapusevska B (2019) Biocompatibility and reaction of dental polymers in oral environment Knowledge International Journal 31 835–839.
2. Patnaik A, Kumar S R and Godara M (2019) Investigating influence of low fraction of polytetrafluoroethylene filler on mechanical and wear behavior of light-cured dental composite Mater. Res. Express 6 085403.
3. Darwich A, Shash M, Ali A, Nazha H, Marouf A and Abbas W (2019) Numerical study of the influence of ultra-thin veneer materials and its thickness on their biomechanical behavior Biomedical Research 30 920–923.
4. Schwartz G T, McGrosky A and Strait DS (2020) Fracture mechanics, enamel thickness and the evolution of molar form in hominins Biol. Lett. 16 20190671.
5. Nazha H (2020). Investigating the potential use of polymeric materials in the preparation of temporary cosmetic teeth painting veneers. Materials Research Express, 7(7), 075307.



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Biography (150 word limit)

Dr. Hasan Nazha has his expertise in linking material, mechanical, and biomedical engineering in dental applications to improve the health and wellbeing of humanity. His passion made him obtain two patents registered in the SPO; the first one titled "Temporary cosmetic teeth painting veneers", and the second one titled "Design of the safe abutment of one-piece zirconia implants". He also has IELTS academic (6.5), more than 20 original articles, and I ranked the first out of the postgraduate students nationwide and was honored by the Minister of Higher Education (in Syria), and recently qualified for the finals in the Challenge and Innovation Forum (CIF) Qatar 2021.

Email: hasannazha15@gmail.com

Notes/Comments: -

Presenting author details

Full name: Hasan Nazha
Contact number: +36707204219
Twitter account: -
Linked In account: -
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