Polyethylene woven fabric reinforced dentures - properties and construction

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3257 Development of Calcium Phosphate Cement for Fast-Setting Formation to Appliance. M. KNONP, H. H. LEE, AND J. CROW (Department of Dentistry, Tokyo University, Tokyo, Japan)

A calcium phosphate (TCP) cement is used in orthodontic treatments to provide temporary support for the movements caused by orthodontic forces. The cement is designed to harden quickly and provide a temporary appliance for orthodontic purposes. However, the hardening process can take a significant amount of time, which can be uncomfortable for the patient. The authors describe the development of a new calcium phosphate cement that hardens faster than conventional cements, allowing for faster orthodontic appliance formation and improved patient comfort.

3261 Use of microwave energy for processing acrylic resin near metal. K. O. BRAUN, A. DEL BEL CURY, R. M. RODRIGUES GARCIA (Faculty of Dentistry of Pontificia, UCIC, Camp, Brazil)

The convective method to process acrylic resin is a time-consuming step to construct removable prosthodontics. Various microwave processing would be a solution, but there are doubts about this process in metal presence. So, the aim of the study was to compare residual monomer, microhardness and process of two acrylic resins cured by different methods in the presence of a metal plasma of Cu and Ni. The considered materials were GA - acrylic resin classic, short-cured for 3 h, and GB - acrylic resin Classic cured for 3 min at 700 W in microwave and GA - Acrylic resin Cu cured for 3 min at 500 W. For each group 12 specimens were measured 30 mm diameter (10 specimens) and kept in the same metal framework (2x10 mm). After the cure, the specimens were immersed individually 10% of deionized water. Residual monomer released in the metal framework and consequently for both acrylics. The specimens were divided into two groups: Tested and untested. The results were presented as the mean of ± standard deviation. The results showed that microwave curing significantly increased the residual monomer release compared to the traditional curing method. The microwave curing also significantly increased the microhardness of the acrylic resin.

3262 Effect of glue-discharge treatments on acrylic resin surfaces. A. N. OZDEN, F. AKCAYLAN, S. DIZER, A. GOKCALI (Ankara University Faculty of Dentistry, Bilkent University, METU, TURKIYE)

The adhesive action of a thin film of saliva between the palatal and surface of a complete denture has been one of the principal sources of denture retention. The objectives of the study were to show the changes in wettability of acrylic resin denture base material under different atmospheres and compare the surface modifications by XPS, Scanning electron microscopy, and Water contact angle. The results obtained from XPS showed that the surface treatments with the two different atmospheres significantly altered the surface composition. The Scanning electron microscopy revealed that the surface treatments caused changes in the surface morphology, and the Water contact angle measurements showed that the surface treatments significantly altered the surface wettability.

3263 Dental Materials: Properties and Applications. Y. Y. CHENG, T. W. CHOW, and N. L. LADEKESZ (Polymer Chemistry - Dental Materials, Hong Kong)

The site of this index is to highlight the mechanical properties of denture base polymers and their applications in dental materials. The index includes various terms such as denture base polymers, impact strength, hardness, and thermal properties. The index also mentions the use of dental materials in various applications such as orthodontic appliances, crowns, and bridges. The index is intended to provide a comprehensive overview of the properties and applications of dental materials, allowing researchers and practitioners to quickly access relevant information.

3264 Denture polymers and lining materials containing antimicrobial agents. S. R. SHUKLA, A. S. GOHAR, N. O. SUGA (Osaka University Faculty of Dentistry, Osaka, Japan)

Polymeric and lining materials containing antimicrobial agents are widely used in denture prostheses to prevent the growth of microorganisms. The index mentions various types of polymers used in denture prostheses, such as polyacrylates, polyurethanes, and silicone elastomers. The index also mentions the use of these materials in combination with other substances, such as antibiotics and antifungal agents. The index is intended to provide a comprehensive overview of the properties and applications of denture polymers and lining materials.