

## SYNTHESIS OF BIOACTIVE DENTAL COMPOSITES BY SOL-GEL AND MICROWAVE PROCESSING

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Bioactive dental composites offer great advantages in dental applications. They inhibit bacterial growth and provides calcium and phosphorous ions for tissue regeneration after acid attack. They also reduce the marginal gap by the formation of hydroxyapatite. In this work, four dental composites were prepared using dental resins and 8 wt% 45S5 bioactive glass synthesized using a process that combines the sol-gel methodology and microwaves processing for the dry gel stabilization that allows considerable energy savings and avoids that glass crystallization occurs according to X-Ray diffraction analysis. The synthesized composites were characterized by Scanning Electron Microscopy, Energy Dispersive X-Ray Spectroscopy, Fourier Transformed Infrared Spectroscopy and their mechanical and bioactivity properties were determined. These results were compared with commercial bioactive dental composites and it was found that the synthesized composites exhibit similar or improved properties to the commercial brands.

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