



# Karbala International Journal of Modern Science



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## Article Title

[Expanding Potential Dental Applications of Glass Ionomer Cement by Incorporating with Nano-Hydroxyapatite](https://kijoms.uokerbala.edu.iq/cgi/viewcontent.cgi?article=3285&context=home)  
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## Abstract

Glass ionomer cement (GIC) is a common restorative material in dentistry, but it exhibits relatively weak mechanical properties. The present study focuses on incorporating nano-hydroxyapatite (nHAP) with different ratios (1, 3, 5, and 7wt%) in GIC to improve its properties. Mechanical properties, sorption, solubility, and diffusion coefficients after storage in distilled water for 60 days were studied. The highest sorption was measured at 7%wt (46.66 µg/mm<sup>3</sup>), and the lowest solubility was in the case of the sample containing 5% (29.166 µg/mm<sup>3</sup>). Moreover, the highest value of diffusion coefficient was 8.5 mm/s in the case of the sample with 7%wt nHAP. All in all, an ideal nHAP/GIC composition was prepared, and it can be applied as the basis of underneath dental filling.

## Recommended Citation

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