

## عنوان مقاله:

Effect of Particle Distribution on Nano-indentation of Particle Reinforced Nano-composites

## محل انتشار:

ششمین کنفرانس بین المللی کامپوزیت، مشخصه سازی، ساخت و کاربرد (سال: 1397)

تعداد صفحات اصل مقاله: 3

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## خلاصه مقاله:

This study aims to investigate the effect of particle distribution around the indentation region on the results of nano-indentation experiment of a dental nanocomposite. Some disk shaped specimens were prepared from Filtek Z350 XT nanocomposite, which is widely used in restorative dentistry. Several nano-indentation experiments were done on different regions of the nanocomposite specimens. Some representative models of the nanocomposite with regular and irregular particle distributions were created to simulate the nano-indentation experiment based on the finite element method. The validity of the simulation method was examined with the experiment results then, the material deformation under the Berkovich indenter was determined for different particle distributions. The results showed that the load-displacement curves vary slightly in the indentation on the regular and irregular particle distribution models of the nanocomposite. Moreover, the plastic deformation of the equilateral indentation mark shows a disordered shape which represents the interaction of particles and matrix

## کلمات کلیدی:

.Nano-indentation experiment, dental nanocomposite, finite element simulation, plastic deformation

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/901599>



