Biomaterials Journal
http://www.biomatj.com
Online ISSN: 2812-5045

Type of the Paper (Editorial)

Using nanostructure modelling for ideal dental care

Tamer M. Hamdy [1,*]

[1] Restorative and Dental Materials Department, Oral and Dental Research Institute, National Research Centre (NRC), Giza, Dokki, 12622, Egypt
* Corresponding author e-mail: dr_tamer_hamdy@yahoo.com

Citation: Tamer M. Hamdy. U*sing nanostructure modelling for ideal dental care* . *Biomat. J., 2 (7),1 – 2 (2023).*

https://doi.org/10.5281/znodo.5829408

Received: 25 July 2023
Accepted: 30 July 2023
Published: 31 July 2023

Abstract: Human instinct drives us to seek out and unravel nature's mystery. In biomimicry, we use nature as a guide, benchmark, and teacher. Using either artificial or natural alternatives should make biomimicry practicable. In the past, dental restorative materials were generated at the micromolecular level of matter, but now researchers are more interested in creating materials that are more like nature by building them at the nanoscale, giving rise to the discipline of nanotechnology.

Keywords: Nanostructure; dental care; nanotechnology.

Human inclination dictates that we should try to solve the mystery that is nature. Using nature as a guide, benchmark, and teacher, biomimicry examines human behaviour. Using artificial or natural replacements should make biomimicry practicable. Prior to the development of nanotechnology, dental restorative materials were made at the micromolecular level of matter, but now that researchers are interested in creating materials that are more like nature, they are building materials at the nanoscale [1].

The most fundamental components of life systems are what biomimetic nanotechnology identifies with, as is the transfer of these components' qualities to useful human uses. The majority of natural materials, structures, and processes are thought to have nanoscale functions. From their first degree of association, the most fundamental traits and abilities of every single natural framework are characterised at the nanoscale. The main idea of nanotechnology is to use low-energy bonding to hierarchically arrange molecules into objects. Materials and methods for nanoscale fabrication and analysis are provided by nanotechnology [2].

In my opinion, all modern dental materials, especially their active ingredient, should be made at the nanoscale for the best possible replication of natural dental tissues. Nanosize will ensure that mechanical qualities are best suited to their intended use, with the best aesthetics, repairability, and energy efficiency, making materials more intelligent in how they respond to their surroundings.

Enamel, dentin, or cementum of the tooth can be painted with fluoride varnish, Clinical dental practise will change as a result of nanotechnology. Dental restoration materials will soon be extremely accurate, intelligent, and similar to natural ones. In order to accomplish dental restorative materials in nanoscle, all necessary efforts should be made. These materials include dental medication, resin composite, cements, sealers, ceramics, impression materials, remineralizing agent, dentures, bone replacement agent, root fillings, and dental implant materials.

Refernces

[1] R. H. Selwitz, A. I. Ismail, and N. B. Pitts, “Dental caries,” Lancet, vol. 369, pp. 51–59, 2007.

[2] C. Sicca, E. Bobbio, N. Quartuccio, G. Nicolò, and A. Cistaro, “Prevention of dental caries: A review of effective treatments,” Journal of Clinical and Experimental Dentistry, vol. 8. pp. e604–e610, 2016.