

## ORGANIC-INORGANIC NANOCOMPOSITES COATED WITH CHLORHEXIDINE

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### Abstract

The field of nanocomposites involving organic and inorganic materials is a rapidly rising area of research and application development. The general class of nanocomposite organic-inorganic materials is a fast growing area of research. Important activity is focused on the ability to obtain control of the nanoscale structures via innovative synthetic approaches. The properties of nanocomposite materials depend not only on the properties of their individual parents, but also on their morphology and interfacial characteristics. The general class of organic-inorganic nanocomposites may also be of relevance to issues of antibacterial materials in which layered nanocomposites represent an extreme case of a composite in which interface interactions between the two phases are maximized. Since the remarkable properties of conventional composites are mainly due to interface interactions, the materials dealt with here could provide good model systems in which such interactions can be studied in detail using conventional bulk sample techniques. Nanocomposite materials on the base of zinc oxide and chlorhexidine nanoparticles as fillers in layered structures are widely known as a chemical antiseptic and antibacterial agent. They are highly effective in destroying gram-negative and gram-positive organisms. Chlorhexidine nanoparticles as organic phase can be prepared in different concentrations as a part of a solution or as an ingredient in antibacterial products.

**Keywords:** Nanocomposite, Chlorhexidine, Zinc oxide

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