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A Novel Nanocomposite (SR/HA/-nZnO) Material for Medical Application

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A novel biocomposite material SR/HA/ZnO for maxillofacial prosthetics and jawbone. In this work, hydroxyapatite synthesized by sol-gel technique. $Ca(NO_3)_2.4H_2O$ and $(NH_4)_2HPO_4$ used as precursors, and nano ZnO was prepared and modify the surface using Oleic acid to get uniform distribution Within the matrix and reduce nanoparticles agglomeration ZnO. Silicone rubber composites were prepared as a second part by using HA as to increase the biocompatibility ,mechanical properties of SR, and to get antibacterial nanocomposites ZnO modified were used. The mechanical properties as a property of tensile strength, elastic modulus, elongation, hardness, compressibility, and antibacterial were examined after the addition of HA and ZnO to silicon rubber. The results show the ability to prepare n-ZnO and HA used to enhance the mechanical properties also acts as antimicrobial media for the biocomposite that can be used for prosthetics and jawbone.