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A Review On Recent Advanced Materials For Biomedical Applications And Wearable Biosensors

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ABSTRACT

Biomedical applications with the help of innovative advanced materials have been provide new healthcare technologies those are more sustainable than conventional one. In early stage if deceases detected then best healthcare treatment possible by using advanced biomedical instruments. Now day's smart materials have capability of different properties so used in the biomedical field in variety of devices. The review paper highlights on biomedical surgical tool used by advanced materials, biomaterials for femur bone fracture and healing, gold nanoparticles for dental caries ,bio-piezoelectric composites for biomedical applications and graphene oxide for drug delivery .This review focuses on biosensors of wearable technology for healthcare monitoring with the expansion of nanotechnology of recent advancement in biosensing also in shortly review on futuristic emerging trends for diabetes management has been apply by effective nanobased therapy.

Keyword : biomaterials, biomedical surgical tools, gold nanoparticles (AuNPs), grapheme oxide, bio-piezoelectric composites, wearable biosensor.

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Elimination of Benzoic Acid Through Degradation Under Visible Light Photocatalysis Using C, N Co-Doped TiO2 Derived From Chicken Egg White

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ABSTRACT

This study used the sol-gel method to create a TiO_2 photocatalyst doped with carbon and nitrogen using 10 ml of titanium butoxide and 8 grams of chicken egg white. Instruments such as scanning electron microscopy (SEM), X-ray diffraction (XRD), UV-Vis diffuse reflectance spectroscopy (UV-DRS), and Fourier transform infrared (FTIR) were used to characterize the C,N co-doped TiO_2 photocatalysts. To evaluate the photocatalytic activity of co-doped TiO_2, the photodegradation of benzoic acid was observed in a batch photoreactor under both visible and ultraviolet light. A successful co-doping of carbon and nitrogen atoms from chicken egg white into TiO_2 utilizing a combination of interstitial and substitutional doping was demonstrated in the study. The result was a dramatic narrowing of their band gap energy, which brought them into the visible part of the spectrum. When C and N are co-doped into TiO_2, the gap narrows, and the photocatalytic activity under visible light for benzoic acid photo-degradation may be improved

Keywords: benzoic acid, photocatalyst, co-doping, TiO_2, visible light photocatalysis.