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commentary article

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Functionalism of Plumbagin-Loaded Fibrin Nano Composites Analysis

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DESCRIPTION

Nanotechnology makes use of information from physics, chemistry, biology, material science, health science, and engineering. Fibrin, Graphene Oxide, and Iron Oxide are used to make a Nano composite. Depending on the particle and its final purpose, nanoparticles are produced using a variety of processes. Physical, chemical, and biological approaches are available. Physical approaches (mostly top-down) include attributionor mechanical milling, thermal and vapour gas decomposition, and laser ablation synthesis in solution (LASIS) Bottom-up strategies are used in chemical synthesis. Microwave and ultrasonic irradiation of a reaction system has been used in micro-emulsion/micelle-based procedures. Bovine blood was taken in a sanitary manner from a municipal slaughterhouse.

To isolate the fibrin, which was in crude form, it was manually agitated with a glass rod. The term "Nano" is derived from the Greek word Dwarf and meaning "a billionth." A nano meter is a billionth of a metre, or 250 millionth of an inch, or roughly 1/80,000 of the diameter of a human hair or 10 times the diameter of a hydrogen atom. Tokyo Science University coined the term "Nanotechnology" in 1974 to describe the accurate manufacture of materials with nanometer tolerances, and it was unknowingly appropriated by Drexler in his 1986 book "Engines of Creation: The Coming Era of Nanotechnology." It has numerous applications in practically every sector of science and human life. An essay explained the relationship between the hue of stained glass Physics, chemistry, biology, materials science, health sciences, and engineering understanding are required. It has numerous applications in nearly every branch of science and human life.

A paper reviewed the association between stained-glass colour and nanoparticle size/shape. Fibrin is a naturally occurring protein that is produced during the blood coagulation cascade. It is widely employed in a variety of surgical operations for hemostasis and wound healing. Fibrin is an ideal substrate for cell adhesion, proliferation, and the production of extracellular matrix in wound healing and tissue engineering. It is frequently employed in biomedical applications as a sponge, adhesive, and micro beads. It is both biocompatible and biodegradable. Fibrin is also an efficient anticancer medication carrier. Graphene is a hexagonally organised sheet of carbon atoms packed into a honeycomb lattice that is one atom thick and two dimensions. It is very relevant to materials science, physics, and chemistry.

Due to its distinct physical, chemical, and biocompatibility properties, graphene has been used for a range of purposes, including biosensing, diagnostics, the development of antibacterial and antiviral materials, and the targeting of cancer. Because to its distinct physical, chemical, and biocompatibility properties, graphene has been used in a range of applications, such as cancer diagnostics and targeting. The flexible lamellar material graphene oxide (GO) has numerous functional groups on both the basal planes and the edges, such as epoxy (C-O-C), hydroxyl (OH), and carboxyl (COOH). A two-dimensional nano sheet of carbon atoms with sp2 hybridization makes up graphene oxide in nature. The magnetic iron oxide nanoparticle (IONP)-based technology has several bio-medical uses, including tumour targeting drug delivery carriers, (MRI) contrast agents, and hyperthermia treatment. Gold, silica, iron oxide, quantum dots, and calcium phosphate are the most important materials in biology and medicine.

Among these, iron oxide nanoparticles (IONPs) have received a lot of attention due to their simplicity of manufacture and biocompatibility. IONPs are being studied for a variety of applications including tissue-specific medication delivery, cell separation, and cell separation (MRI). IONPs are especially interesting as contrast enhancement agents for MRI and as a medication delivery platform. In vitro haemolysis is thought to be a simple method for assessing nanomaterial compatibility with RBCs. Incubation with water resulted in complete lysis of RBCs .The resultant supernatant was crimson in colour, resulting in a high absorbance at 577 nm (absorbance maxima of haemoglobin). The incubation of varied concentrations of (F+IO+GO) nanocomposites, Plumbagin loade nanocomposites for 4 hours did not result in haemolysis, as detected visually. The supernatant produced following centrifugation of the treated RBCs was clear. The lysed haemoglobin was quantified. The absorbance of haemoglobin at 577 nm revealed very little haemolysis.