

Gold Nanoparticles: Green and Conventional Synthesis

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The definition of nanotechnology was introduced in science in the 1960s, but only in the 1980s could we have microscopic observations of these components. From then on, nanotechnology has appealed to several industrial sectors, especially computation and electronics engineering, but the automotive industry, civil construction, textiles and agriculture have also explored these minuscule particle potentials. However, it's a healthy area where nanoscale has played a revolutionary part, with a considerable hope for the treatment of many diseases. When it comes to metallic nanoparticles, the gold nanoparticles (AuNPs) stand out for their biocompatibility and, in addition, their optical and electrical properties, which allow therapeutic applications and medical diagnosis. Yet conventional synthesis of AuNPs has a range of challenges, including high energy consumption, the use of toxic reagents, and high production costs, that limit the viability of large-scale. This work aimed to compare an alternative methodology of synthesizing AuNPs with the Turkevich method, widely used to synthesize these structures that dispense reducing traditional agents, promote a new approach that is more sustainable and potentially more economic, and assess particle parameters such as size, pH, stability and reaction time in order to analyze its efficiency. This study is expected to contribute to improving the synthesis of green nanoparticles and support new researchers in applying these structures to medicine, pharmacy and cosmetic procedures.