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(54) Title: NOVEL GOLD-PLATINUM BASED BI-METALLIC NANOCRYSTAL SUSPENSIONS, ELECTROCHEMICAL MANUFACTURING PROCESSES THEREFOR AND USES FOR THE SAME

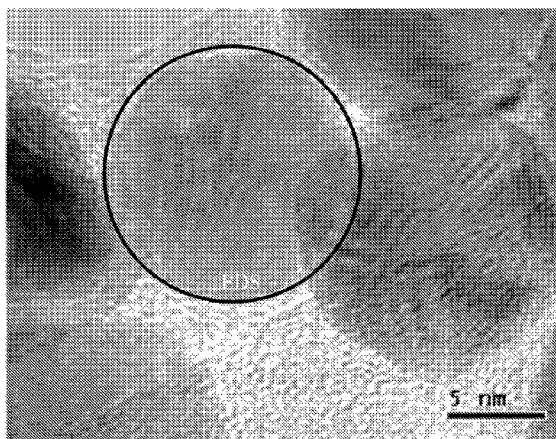


Figure 29c

(57) Abstract: The present invention relates to novel gold-platinum based bi-metallic nanocrystal suspensions that have nanocrystal surfaces that are substantially free from organic or other impurities or films associated with typical chemical reductants/stabilizers and/or raw materials used in nanoparticle formation processes. Specifically, the surfaces are "clean" relative to the surfaces of metal-based nanoparticles made using chemical reduction (and other) processes that require organic (or other) reductants and/or surfactants to grow (and/or suspend) metal nanoparticles from metal ions in a solution. The invention includes novel electrochemical manufacturing apparatuses and techniques for making the bi-metallic nanocrystal suspensions. The techniques do not require the use or presence of chlorine ions/atoms and/or chlorides or chlorine-based materials for the manufacturing process/final suspension. The invention further includes pharmaceutical compositions thereof and the use of the bi-metallic nanocrystals or suspensions or colloids thereof for the treatment or prevention of diseases or conditions for which metal-based therapy is already known, including, for example, for cancerous diseases or conditions.

