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Journal Name:	American Chemical Science Journal
Manuscript Number:	**Ms_ACSJ_25749**
Title of the Manuscript:	**LABORATORY PREPARATION OF THE PRECURSOR FOR SYNTHESIS OF GOLD NANOPARTICLES**
Type of the Article	**Original Research Article**

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.
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PART 1: Review Comments

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Compulsory REVISION comments	The authors describe the synthesis of gold nanoparticles using the citrate reduction method. The topic is very interesting because, as they said, nanoparticles show several important and promising applications in many fields. However, the paper needs, in my opinion, many improvements before publication. -The novelty of this investigation is not clear. Which is the novel aspect of this research respect to the current literature studies? Please, explain better this aspect both in the abstract, in the result and discussion section and in the conclusion. -The literature references are scarce and not updated. Please, add new and updated literature references because the topic of this paper is a central subject of the current scientific research, whereas the reported literature references are old. -In the Introduction, literature references regarding the general syntheses of nanoparticles can be added and the authors can take into account: Topics in Catalysis, 52, 2009, pp. 1065-1069; Applied Catalysis A: General, 350, 2008, pp. 46-52; International Journal of Chemical Reactor Engineering, 8, 2010, article A2; Applied Catalysis A: General, 386, 2010, pp. 124-131; ChemCatChem, 2, 2010, pp. 1444-1449; Applied Catalysis A: General, 421-422, 2012, pp. 99-107;	-The novelty is clearly stated that the precursor used in the synthesis of GNPs is mostly sourced commercially in the majority of the publications. Information on the laboratory preparation of the precursor is very scanty or inaccessible in the literature. Hence, this work has presented the laboratory preparation of the precursor. - More literature reference has been included and updated.

	Applied Catalysis A: General, 447-448, 2012, pp. 49-59; Applied Surface Science, 280, 2013, pp. 610-618; Applied Catalysis A: General, 468, 2013, pp. 95-101; Applied Catalysis A: General, 496, 2015, pp. 40-50.	
	-In the Introduction the sentences "Three different gold concentrations gave different particle size distribution curves [24]." and "In another study, the monodisperse nanogold with different particle sizes were obtained by the same procedure with different amounts of citrate [25]."are little analysed. Please explain better which are the three gold concentrations, which are the different particle size distributions for the first sentence and around what dimensions are obtained the monodisperse gold nanoparticles and which amounts of citrate are used for the second one.	We have rephrase the sentences in question
	-In the experimental section, the description of the synthesis of gold nanoparticle is not clear; please explain better.	The synthesis is clearly via citrate reduction procedure as explained.
	-The reported characterization of the obtained gold nanoparticles is scant, can the authors add some other characterizations? As an example, UV-VIS spectroscopy, ICP, IR and also a photograph showing the colour changes during the gold nanoparticle preparation, as the authors describe in the experimental section.	Other characterization requirements have been recommended for further research.
	-The paper reports only two types of gold nanoparticle preparations: the first one using sodium cyanide analar grade and the second one using cyanide solution from cassava, employing in both cases the same gold and sodium citrate concentrations. It should be interesting if they could study the effect of different gold concentrations on the size and shape of the obtained gold	That is part of the recommendation for further work.

	nanoparticles as well as the effect of different sodium citrate concentrations. -Gold nanoparticles can be employed in catalysis and in this case the presence of stabilizing agent can result detrimental for the catalytic behaviour. Have the authors tried to reduce the amount of citrate in the preparation, maintaining the properties of the gold synthesized nanoparticles? Otherwise, have the authors tried to remove the excess of citrate after the preparation? -In the result and discussion section, it is necessary to add a graph showing the distribution of sizes of gold nanoparticles when the authors say "The TEM images show that the gold colloid is in monodispersional state, this is because of negatively charged layer of citrate ions which repel from each other". The analogous graph should be added later when the authors say "The average diameter of colloidal gold was in the range of 18.2 nm with more particles of lower size distribution.". -In the result and discussion section, when the authors say "The size of gold nanoparticles has been determined by measuring the diameter of whole particles on TEM images." at lines 75-77 it is necessary to add the number or at least an evaluation of how many particles the authors had used to know the average diameter. It is necessary to add the same information later when the authors repeat the same sentence at lines 90-91. -In the result and discussion section the authors say "The strongest diffraction peak at 38 degrees is considered to be of {1 1 1} facet of the face centered cubic structure (Figure 1), while the diffraction peaks of other gold peaks at {2 0 0}, {2 2 0}, {3 1 1}, {2 2 2}, {4 0 0} and {3 1 1} are	No. we did not consider these factors in this work but we appreciate your insight and hope to further this work on this path. We have included the number of particles on TEM being evaluated on average in lines 75 – 77 and lines 90 – 91.

	found to be much weaker compared to standard GNPs." , why are the diffraction peaks at {2 0 0}, {2 2 0}, {3 1 1}, {2 2 2}, {4 0 0} and {3 1 1} weaker respect to standard GNPs? The authors should add an explanation of this and then add, as they have written, that this is in agreement with the literature work [26]. -The authors should delete the experimental information reported in the result and discussion section and insert them in the experimental section ("The size of gold nanoparticles has been determined by measuring the diameter of whole particles on TEM images."; "X-ray diffraction measurements of the films and powders in the present studies were carried out using Rigaku automated x-ray diffractometer. The filtered copper Kα (λ = 1.5418 °A) radiation was used for recording the diffraction pattern." These sentences should be reported in the experimental section.	We have given the explanation. We have deleted the experimental information from result and discussion.
Minor REVISION comments	-In the whole manuscript there are some typing errors. Please, check carefully the manuscript. -English should be improved. Please, review it with the help of a native speaker.	We have corrected the typing errors.
Optional/General comments	The topic of the paper is interesting but many improvements are needed before publication.	