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Editor-in-Chief, Journal of the Serbian Chemical Society

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August 14th, 2020

Dear Editors,

We have received your report on our manuscript Ref. No. 9653 entitled “Zinc oxide nanoparticles prepared by thermal decomposition of zinc benzenepolycarboxylato precursors: photoluminescent, photocatalytic and antimicrobial properties”. Thank you for useful suggestions and remarks. Below, you will find the list of changes in the revised manuscript together with our answers.

**Reviewer A**

***Remark 1***: *Lines 22 and 75-75: “UV-Vis diffuse reflectance spectroscopy” instead of “UV-Vis spectroscopy”.*

**Answer:** The reviewer’s suggestion is accepted.

***Remark 2***: *Authors should add in Experimental part basic information about commercial ZnO e.g. manufacturer because they are omitted in ref 28 as well.*

**Answer:** The information about manufacturer of commercial ZnO has been added in Experimental part of the Manuscript.

***Remark 3***: *Lines 262-263: please rephrase the sentence regarding agglomeration – it is very well recognized problem and very often discussed in papers dealing with adsorption properties, so it is not correct to say that it is “often overlooked”.*

**Answer:** The sentence is rephrased according to reviewer’s suggestion. The following is now written in the Manuscript: “The problem of particle agglomeration, together with considerations about agglomerate size is often discussed in studies dealing with adsorption properties of ZnO nanoparticles. [A. Kołodziejczak-Radzimska, T. Jesionowski, *Materials* **7** (2014) 2833 (<https://doi.org/10.3390/ma7042833>); F. Pellegrino, L. Pellutiè, F. Sordello, C. Minero, E. Ortel, V. D. Hodoroaba, V. Maurino, *Appl. Catal. B-Environ.* **216** (2017) 80 (<https://doi.org/10.1016/j.apcatb.2017.05.046>).].”

**Reviewer B**

***Report:*** *The manuscript is well written, and the topic is interesting and suitable for the journal. There are plenty of experimental results and the results are well discussed. Just the results of thermal analysis are not well connected to other results. It is stated that “The thermal analysis, as the most suitable method to study the thermal decomposition of complexes, was used to establish the optimal conditions for the thermal conversion of precursors to ZnO.” However, there is no clear conclusion from the thermal analysis why the temperature of 450 ºC was chosen for the precursor calcination in order to obtain ZnO powders. Please, give the explanation.*

**Answer:** The main aim of the thermal analysis and solid-state kinetics was to investigate the thermal stability and decomposition mechanism of the precursors. Thermal analysis and solid-state kinetics were performed under non-isothermal conditions, while the ZnO nanoparticles were prepared under isothermal conditions by calcination of the precursors at 450 °C. The DSC curves (Fig. 1 c in the Manuscript) have the large exothermic peak in the temperature region 430–560 °C which is attributed to the complete burning of the organic components, resulting in the formation of ZnO. The temperature of 450 °C was chosen for the precursor calcination as the lowest temperature for complete degradation of precursors, as well as to avoid the increase of crystallite size of the obtained ZnO nanoparticles [Y. Guo, R. Weiss, R. Boese, M. Epple, Thermochim. Acta 446 (2006) 101 (https://doi.org/10.1016/j.tca.2006.01.002); M. I. Khalil, M. M. Al-Qunaibit, A. M. Al-zahem, J. P. Labis, Arab. J. Chem. 7 (2014) 1178 (<https://doi.org/10.1016/j.arabjc.2013.10.025>)].

Hopefully, the manuscript is now suitable for publication in *Journal of Serbian Chemical Society.*

Kind regards,

Lidija Radovanović