Dear Professor Ražić,

Firstly, we would like to thank you and the Reviewers for consideration of our manuscript. We have performed a careful revision of our manuscript and we believe that we have addressed all the issues raised by the Reviewers.

Our responses to the specific points are given in the appendix to this letter and the changes to the manuscript are marked in blue. We hope that our responses and changes we’ve made to the paper are satisfactory and that you will be able to accept our manuscript for publication in the Journal of Serbian Chemical Society. Finally, we would like to thank you and the Reviewers for handling our paper and for making suggestions which we feel have improved it.

Best wishes,

Ljiljana Damjanović

**Appendix: Detailed responses to Reviewers’ comments**

**Reviewer #A:**

Row 192-193 The mineralogical composition obtained on the basis of XRPD is very poor and not completely determined. Thus similarity between the pottery body and local raw material should be complemented by determination of their elemental composition.

We agree with Reviewer’s comment that the additional analysis of mineralogical composition would be a sound supplement to our results. However, due to the nature of the samples used in this study (samples from a museum collection), the amount of material available for destructive analysis was quite limited. Therefore, we have prioritized the techniques that could provide us with more information by using the lowest amount of samples.

We have adjusted the statements regarding the XRPD results in accordance with the Reviewer’s comments.

Row 269-271 Table with position of Si-O stretching band and estimated firing temperature should be given for all the analysed samples in order to confirm that preparation and firing of the clay was well controled.

According to this comment we have made changes in the manuscript and listed the positions of the Si-O stretching band in the analyzed samples. Following sentence has been added to the text:

Detected positions of Si-O stretching band for the investigated samples were following: 1033 cm-1 for P-7; 1035 cm-1 for P-4; 1040 cm-1 for P-2, P-3, P-5; 1047 cm-1 for P-9; 1050 cm-1 for P-6; 1035 and 1077 cm-1 (split band) for P-10; 1040 and 1080 cm-1 (split band) for P-3. Poor quality of FTIR spectra of samples P-1 and P-8 did not allow precise determination of the band position, but were estimated to be in the same spectral region of about 1040 cm-1.

We also reconsidered the statement that firing of the clay was well controlled and decided to remove it from the text.

Row 179-180, Fig. 6 The identification of white pigments applied on sample 9 and 10 are correct as well as corresponding discussion. However the general conclusion that „Vinča potters used two white pigments, calcium carbonate and ancient pigment Bone White, which was confirmed by FTIR analysis” (Row 371-373) can not be given based on the results of only one sample.

Thank you for pointing this out. We agree with the comment and have changed the statement accordingly:

In order to produce white decorations Vinča potters used different white pigments, among which calcium carbonate and ancient pigment Bone White were confirmed by hereby presented FTIR analysis.

Rows 328-337, Fig. 7 gives no data about pigments used for red and black decorations and it should be excluded. If some iron oxide was used as a pigment, vibrations of these pigments should be seen in FTIR spectra.

We agree with the Reviewer that characteristic bands of iron oxide should be present in FTIR spectra. However due to the quality of obtained FTIR spectra and characteristics of samples those bands overlapped with other signals and were therefore not detected.

Also, we believe that Fig. 7 should remain because it shows typical spectra of clay constituents. It shows that both black and red decorations do not differ appreciably in chemical composition.

We also add additional explanation about colouration of ceramics (Rows 150-158):

The body of ceramics obtained from Pločnik locality is usually black or gray, such as observed in samples P3-P10. It is known from the literature that the Neolithic potters obtained different colorations of the ceramics by controling the fire conditions in the kiln or the pit.23,24 Under the reducing conditions the black colour could be produced and under the oxidizing firing conditions, shades of pale yellow to red colour could be obtained. It is also known that consecutive colouring of the ceramics could be done after firing by usage of certain pigments. For this purpose usualy red or yellowish clays as a red pigment were used.23,24 Among the samples investigated in this study only P9 and P10 samples look like aditional colouring was performed after the firing .

Rows 342-363 It is obvious that the main element which contribute to the colour of red and black decorations is Fe. However different iron oxides alone or in the mixture with clay can give different coluors from yellow, red to black. Authors could apply some supplementary method to determine which of the iron oxides were used as pigments.

We fully agree with Reviewer’s. As aforementioned, due to the nature of samples we could only consider non-destructive methods for analysis. The only available such technique, besides the employed XRF spectroscopy, was micro-Raman spectroscopy. Unfortunately, the investigated samples have shown strong fluorescence which masked the signal from the samples, and some samples (e.g. P-10) were too large to fit in the available sample compartment. Hence, we did not obtain any useful data.

REPORT:
    The manuscript “Physicochemical characterisation of pottery from Vinča culture, Serbia, regarding firing temperature and decoration technique” by N. Perišić et al. presents interesting and valuable results which contribute to better knowledge and understanding of Vinča culture pottery production during the Neolithic period. Ten pottery shards collected at Pločnik excavation site in Toplica district near Prokuplje, where analysed by XRPD, FTIR and XRF methods. The main goal was to determine firing conditions used for pottery manufacturing and techniques adopted to produce particular decorations using the available raw materials. The results contribute to archaeological knowledge of the Neolithic in Europe in general but specifically are of great importance for Serbian cultural heritage knowledge. However, there are some remarks and suggestions to the authors. General remark is that number of analysed samples (ten) is too small to get some genaral conclusions. Therefore, the authors shoud make conclusions only mentioning „for the analysed shards“.

Thank you for the useful comment. The conclusions are adjusted accordingly.

The suggestions to authors are given in Additional comments

In my opinion, this manuscript should:

be published after minor revision without additional review

If manuscript is suitable for publishing, referees recommendation:

Original scientific paper