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Dear Sir, Dear Madame,

I have carefully read the PhD thesis by Kateřina Osterrothová 'Application of Raman spectroscopy for the identification of organic inclusions in minerals for the field of exobiology' (Thesis supervisor: Jan Jehlička).

The thesis is well-written and well-structured. It starts with an introduction and in chapter 2 the necessary background information concerning astrobiological studies is given. Chapter 3 describes the applied methodology and in chapter 4 the results are provided. This thesis comprises 4 research papers. In the last chapter Kateřina Osterrothová finishes with a discussion and an outlook to future research activities in this field.

The work that is performed here, is original and relevant for the research field. The thesis is nicely written, in a correct scientific language. The author proves that she is able to perform (Raman) spectroscopic research in a challenging (biological and geological) research field.

With this thesis, the author shows that she is able to perform good quality research in this interdisciplinary domain. From my background I see different topics that could be raised during a discussion with the candidate.

- One of the topics for discussion could be the selection of the biomolecules in this work (why were these molecules selected? Why are these relevant for exobiology?) and why did you select halite as a matrix as mineralogical standards? Could other minerals be suggested as possible matrices?

- Another point for a possible discussion could be the comparison between laboratory measurements and field measurements. What is the influence of using different spectrometers, with different optics? What is the influence on ease of operation, spectral resolution and sensitivity? What are the main drawbacks during fieldwork?

Concluding, this work is certainly of sufficient level to allow the candidate to defend her work. It definitely reaches the standards for the Ph.D. degree.

I would like to congratulate Kateřina Osterrothová and her supervisor with the quality of this thesis!

Sincerely,



Prof. dr. Peter Vandenabeele
Professor in archaeometry
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