

Supervisor's report

Academic year: **2023/2024**

Student's name: Ing. Ondřej Wojewoda

Doctoral programme: **Advanced materials and nanosciences**

Field of study: **Advanced nanotechnologies and microtechnologies/Advanced materials**

Supervisor's name: Ing. Michal Urbánek, Ph.D.

Name of doctoral thesis topic:

BRILLOUIN LIGHT SCATTERING STUDIES OF MAGNONIC DEVICES

Overall evaluation of doctoral thesis and study of the doctoral student:

Ondřej Wojewoda's doctoral thesis focuses on the characterization of magnonic devices using Brillouin light scattering spectroscopy and microscopy, the most versatile and widely used analytical technique for studying spin waves. During his PhD, Ondřej developed this technique to the highest world level, both theoretically and experimentally. He showed that it is possible to circumvent the fundamental limit of the minimum detectable wavelength of a spin wave (currently around 260 nm) using dielectric nanoreactors and demonstrated the detection of spin waves of 40 nm. Moreover, he supported all experiments with complex analytical model, thanks to which we were able to get deeper understanding of the studied processes of inelastic light scattering on magnons.

In addition, Ondřej has repeatedly demonstrated the ability to use the knowledge not only from his main physics background, but he also showed the ability to adapt to new research directions and contribute to the state of the art in other projects. He has communicated and collaborated independently with many international partners and has actively contributed to multiple publications. He is the first author of four research articles and co-author of six other publications in peer-reviewed scientific journals. With his broad scope, expertise, and enthusiasm, I am convinced that he can achieve many more great successes in his future academic career.

In my opinion, the reviewed thesis **fulfills** all requirements posed on theses aimed for obtaining PhD degree. This thesis **is** ready to be defended orally, in front of the respective committee.

Place... Brno....date...20.8.2024



Supervisor's name