

## Supervisor's statement

Ilona S. Smolkova was born on 2nd of September, 1986, in Leningrad, USSR. She graduated from Saint-Petersburg State University, Faculty of Chemistry, Department of Polymer Chemistry.

M.Sc. Ilona S. Smolkova has joined the Ph.D. study programme "Technology of Macromolecular Substances" in September 2009 as a full-time student at the Faculty of Technology in Tomas Bata University in Zlin.

Her dissertation entitled "Iron oxide nanoparticles and polymer composites on thereof for magnetic hyperthermia" is devoted to the development of magnetic material with the set of properties ensured it application as a mediator in arterial embolization hyperthermia. It is actually a multidisciplinary subject that requires knowledge in the field of chemistry, solid state physics and medicine. The emphasis has been given for the preparation and characterization of magnetic iron oxide nanoparticles and polymer composite on thereof with high heating efficiency in alternating magnetic fields allowed for medical applications.

The aim of dissertation work is accomplished here, e.g. maghemite silicone composite was elaborated possessing the set of properties required for use in arterial embolization hyperthermia: ability for secure embolization, radiopaque property and high heating rate in alternating magnetic fields. The results obtained have been presented at international conferences; four research papers are submitted to the international journals with high impact factors.

During the period 2009 – 2014, Ilona S. Smolkova worked hard and sincerely. She had shown big interest to understand the subject and become master in methodology, characterization of materials properties, as well as aware of modern methods for processing and analysis of experimental results and research papers writing.

As a whole, I can conclude that Ilona S. Smolkova is able to execute the research at high level and work independently. Her dissertation work is of scientific and practical interest.

Thus, I recommend Ilona S. Smolkova for the award of Ph.D. degree by Tomas Bata University in Zlin.

Associate Professor  
Ing., Natalia E. Kazantseva, PhD



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